MINISTRY OF AGRICULTURE, FORESTRY AND WATER ECONOMY
THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

SPECIAL ASSISTANCE FOR PROJECT IMPLEMENTATION (SAPI)
ON
ZLETOVICA WATER USE IMPROVEMENT PROJECT
IN
THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

FINAL REPORT

SEPTEMBER 2014

JAPAN INTERNATIONAL COOPERATION AGENCY

ORIENTAL CONSULTANTS CO., LTD.

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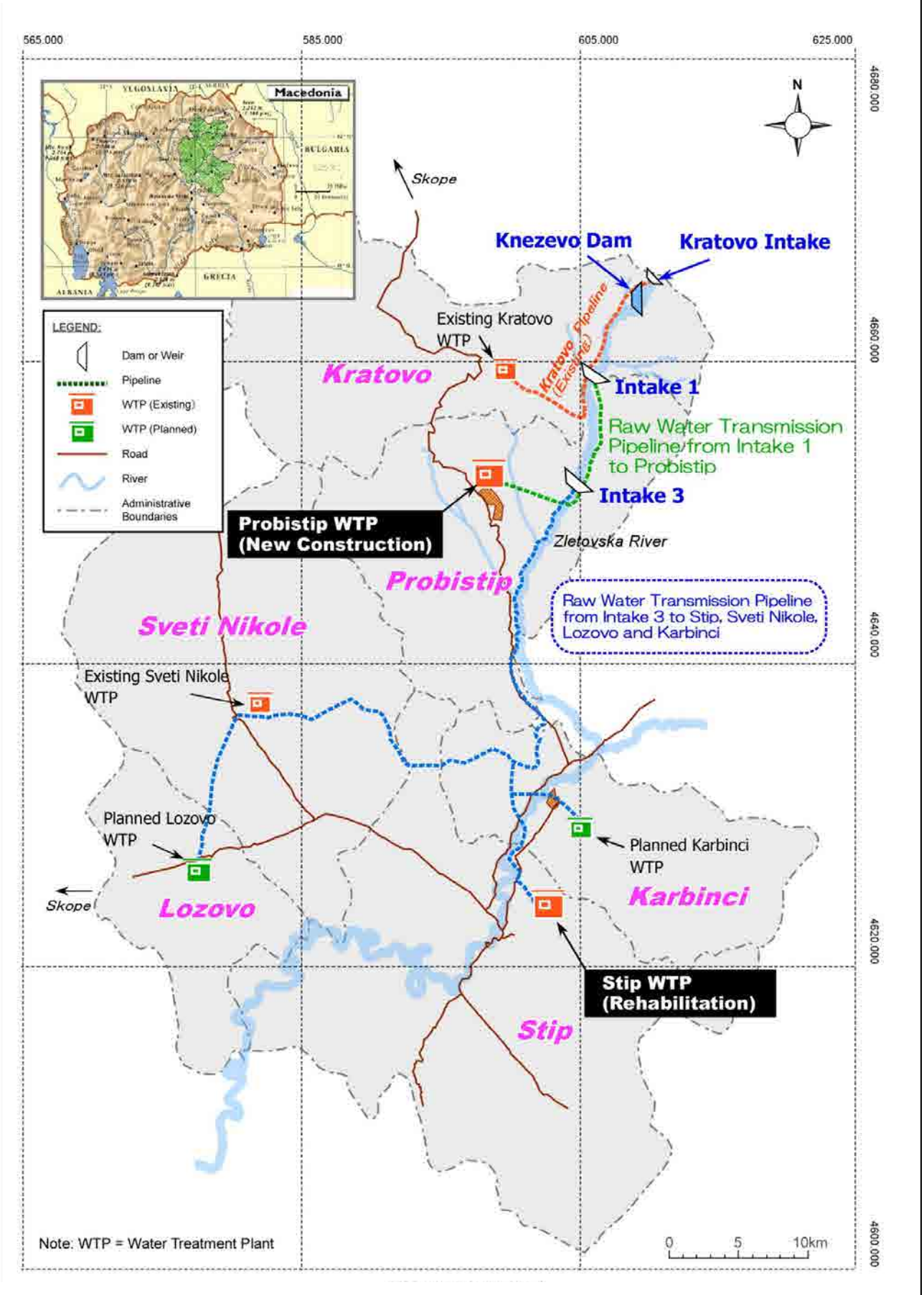
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Macedonia
YUGOSLAVIA
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GRECIA
ALBANIA
Skope
Knezevo Dam
Kratovo Intake
Existing Kratovo WTP
Kratovo Pipeline (Existing)
Kratovo
Intake 1
Raw Water Transmission Pipeline from Intake 1 to Probistip
Intake 3
LEGEND:
Dam or Weir
Pipeline
WTP (Existing)
WTP (Planned)
Road
River
Administrative Boundaries
Probistip WTP (New Construction)
Zletovska River
Probistip
Raw Water Transmission Pipeline from Intake 3 to Stip, Sveti Nikole, Lozovo and Karbinci
Sveti Nikole
Existing Sveti Nikole WTP
Planned Lozovo WTP
Planned Karbinci WTP
Skope
Lozovo
Karbinci
Stip WTP (Rehabilitation)
Stip
Note: WTP = Water Treatment Plant
0
5
10km

STUDY AREA

PHOTO

PROBISTIP Water Treatment Plant

Before Construction

WTP Site

Under Construction

Plant Building

Under Construction

Plant Building

After Construction

Installed Water Treatment Facilities (UF Membrane and Back Wash Pump)

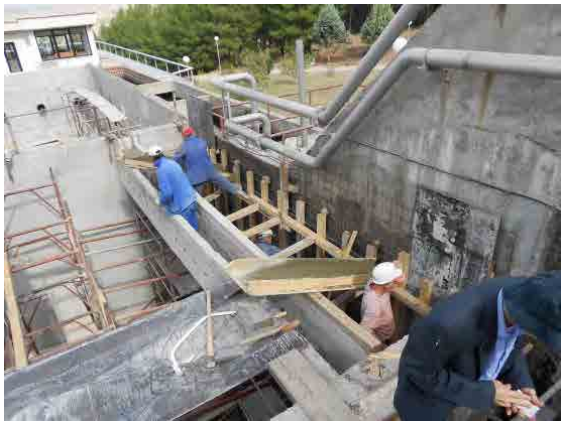
Installed Water Treatment Facilities (Chemical Dosage Equipment and Neutralization Tank Equipment)

STIP Water Treatment Plant

Before Rehabilitation

	
Flocculation Basin	Concrete Surface Improvement

Under Rehabilitation

	
Flocculation Basin	Roofing
	
Roofing	Roofing

Under Rehabilitation

	
Sedimentation Basin	Flocculation Basin

After Rehabilitation

	
Chemical Equipment	Water Quality Sensor
	
Flocculation Basin	ODA Logo

Components of the YEN LOAN PROJECT

	
Access Road (Package 1)	Knezevo Dam (Package 2)
	
Intake No.1 (Package 3)	Intake No.3 (Package 3)
	
Transmission Pipe (Package 3)	SCADA (Package 4)

SUMMARY

Zletovica, located in the north-eastern region of the Former Yugoslav Republic of Macedonia (hereinafter referred to as "Macedonia"), suffers from water shortages during the summer season. The Zletovica Basin Water Utilization Improvement Project (hereinafter referred to as the "Yen Loan Project"), the first Japanese ODA Loan project in Macedonia, began in 2003 to supply raw water to five municipalities in the Zletovica river basin. The Yen Loan Project comprised of four packages; 1) construction of an access road (Package 1), 2) construction of the multi-purpose Knezevo Dam (Package 2), 3) construction of two intakes downstream of the Knezevo Dam and transmission pipelines from the intakes to the five municipalities (Package 3), and 4) installation of SCADA (Package 4).

Water treatment plants (hereinafter referred to as "WTPs") were supposed to have been constructed by the local municipalities under their own budget, but most of the municipalities were not able to construct the planned WTPs due to budgetary constraints. In April 2011, however, construction of the Probistip WTP and rehabilitation of the Stip WTP were additionally included in the Yen Loan Project in response to the request from the Macedonian government.

Some two main issues were observed before WTP construction and rehabilitation: 1) the implementation agency (Ministry of Agriculture, Forestry and Water Economy, hereinafter referred to as "MAFWE"), the implementation unit (Public Enterprise Hydrosystem Zletovica, hereinafter referred to as "PEHZ"), the Ministry of Finance (hereinafter referred to as "MOF"), and the contractors were not familiar with international standards, and 2) WTP construction and rehabilitation for the municipalities were delayed due to difficulty in getting a consensus among the related stakeholders such as MOF, MAFWE, Administration for the MAFWE, PEHZ, the Municipality of Probistip, and the Municipality of Stip .

There was another constraint on the time schedule because the original Disbursement Period was January 2013 according to the Loan Agreement (hereinafter referred to "L/A") of the Yen Loan Project. The two WTP construction and rehabilitation works required effective coordination with the stakeholders on solving unknown technical and administrative issues to complete the Yen Loan Project.

The "Special Assistance for Project Implementation (SAPI) on Zletovica Water Use Improvement Project" (hereinafter referred to as the "SAPI Project") started in August 2011 to assist and support the stakeholders to complete the construction and rehabilitation of the WTPs

in Probistip and Stip. It was granted as a response to the request by the Macedonian government.

When the SAPI Project began, it was identified that three agreements - On-Lending Agreement (between Probistip / Stip municipalities and the MOF), Implementation Agreement (between Probistip / Stip municipalities and PEHZ) and Water Usage Agreement (between Waterworks Departments under Probistip / Stip municipalities and PEHZ) - were required before proceeding with the two WTP construction and rehabilitation works. It took time to clear the agreements as they were submitted in February and March 2012 to the municipalities resulting in a delay in the construction schedule.

Regarding the construction of the new Probistip WTP, a design build contract was applied and the Consultant for the SAPI Project (hereinafter referred to as the "SAPI Consultant") confirmed the design and cost estimation. The construction was funded by the Yen Loan Project, a grant from Slovenia (hereinafter referred to as the "Slovenian Fund") and the municipal budget. The construction started in May 2012 and was completed in December 2012.

Regarding the rehabilitation of the Stip WTP, the design and cost estimation were carried out by the Waterworks Department of Stip municipality and the SAPI Consultant later confirmed them. The budget for the WTP rehabilitation work originally consisted of the Yen Loan Project fund and the Stip municipal budget when construction started in July 2012. But later, Stip municipality applied the Slovenian Fund in the same manner as Probistip. The grant agreement between Stip municipality and the Center for International Cooperation and Development (hereinafter referred to as "CMSR"), which is in charge of handling the Slovenian grant under the Slovenian government, was initially scheduled to be completed in January 2013, but was postponed until May 2013 for two reasons. The first was the local government election in Macedonia. All financial and construction agreements were suspended until after the election. The other was the reformation of the cabinet in the Slovenian government caused by the economic crisis in Europe. CMSR was not able to sign the agreement until the new cabinet was established. The delay of the Slovenian Fund agreement was the main cause for the delay of the Stip WTP rehabilitation work.

Consequently, the Macedonian government requested JICA to extend the SAPI Project contract term, and it was approved to run until July 2014. As a result, the SAPI Consultant assisted in supervising the cooperation fund project consisting of the Yen Loan Project fund and the Slovenian Fund.

The Stip WTP rehabilitation work under the Yen Loan Project was completed in December 2012. The remaining rehabilitation work under the Slovenian Fund was stopped in January 2013

because the fund was unavailable due to the reasons stated above. Stip WTP rehabilitation work resumed after the Slovenian Fund became available in September 2013, and was completed in June 2014.

The Probistip WTP and Stip WTP were completed on 10 December 2012, and 30 June 2014, respectively. Probistip WTP, which has a design capacity of 6,480 m^3/day, started operations on 1 April 2013. Stip WTP, which has a design capacity of 43,200 m^3/day, started operations on 1 July 2014. Both WTPs have been supplying water that satisfies the Macedonian quality standards since these dates.

TABLE OF CONTENTS

STUDY AREA
PHOTO
SUMMARY
TABLE OF CONTENTS
LIST OF TABLES
LIST OF FIGURES
ABBREVIATIONS

Page

1. Introduction 1
   1.1 Background 1
   1.2 Objective 3
   1.3 Project Area 3
   1.4 Counterparts 3
   1.5 Scope of Work 5
   1.6 Consultant Team Members, Roles and Assignment Schedule 6
   1.7 Work Schedule 8
   1.8 Reports 12
2. Issues and Required Measures 13
   2.1 Probistip WTP 13
   2.2 Stip WTP 18
3. Activities Undertaken 21
   3.1 Common Activities 21
   3.2 Probistip WTP 22
   3.3 Stip WTP 32
   3.4 CP Training in Japan 38
4. Noteworthy Activities 41
   4.1 Three Agreements 41
   4.2 Probistip WTP 43
   4.3 Stip WTP 44
5. Output and Conclusion 46
   5.1 Items Assisted by SAPI Project 46
   5.2 Impacts of the Project 46
   5.3 Future Challenges 48

Attachments

LIST OF TABLES

Page

Table 1-1 Outline of Water Supply Condition and Planned WTP 2
Table 1-2 Assignment Schedule (Original) 7
Table 1-3 Assignment Schedule (Amended) 7
Table 1-4 Work Schedule (Original) 10
Table 1-5 Work Schedule (Revised) 11
Table 1-6 Reports of SAPI Project 12
Table 2-1 Fund Allocation (Probistip) 13
Table 2-2 Fund Allocation (Stip) 19
Table 3-1 Environmental Standards 21
Table 3-2 Comparison of Treatment System 24
Table 4-1 Chronology of the Project 45
Table 5-1 Outline of the Supported WTP 46

LIST OF FIGURES

Page

Figure 1-1 Relationship of the Organizations for the SAPI Project 4
Figure 1-2 Organizational Structure of PEHZ 4
Figure 2-1 Construction Budget Flow 15
Figure 2-2 Relationship of Implementation Agreement Entities 16
Figure 2-3 Relationship of Water Usage Agreement Entities 17
Figure 2-4 Existing Stip WTP Layout 18
Figure 3-1 Draft Probistip WTP Layout 23
Figure 3-2 One Unit of UF 25
Figure 3-3 Edge of the UF Unit 25
Figure 3-4 Layout of the New Probistip WTP (white roof) and Reservoir (red roof) 25
Figure 3-5 Plan and Cross Section of Newly Constructed Probistip WTP 27
Figure 3-6 Bird's Eye View of Newly Constructed Probistip WTP 29
Figure 3-7 High Turbidity Inlet Water at the Beginning of the Commissioning Test 33
Figure 3-8 Soil Erosion by Discharging Water 34
Figure 3-9 Landscape Downstream of the WTP Drainage 34
Figure 3-10 Jar Test to Identify the Chemical Dosage Rate 34
Figure 3-11 System Flow Diagram of Stip WTP 35
Figure 3-12 Attendance to CP Training in Japan 39
Figure 5-1 Upper Stream (spillway) 48
Figure 5-2 Lower Stream (spillway) 49

ABBREVIATIONS

BOD5:	Biochemical oxygen demand within 5 days
BOQ:	Bill of Quantity
CMSR:	Center for International Cooperation and Development
COD permanganate:	Chemical oxygen demand with permanganate
CP :	Counterpart
EIB :	European Investment Bank
EUR :	EURO (Currency)
FIDIC:	Fédération Internationale des Ingénieurs Conseils
F/S:	Feasibility Study
JICA:	Japan International Cooperation Agency
JICA Expert Report:	Field Survey Completion Report for Technical Assistance for Water Supply Improvement (Dispatch of JICA Expert) on "Zletovica Basin Water Utilization Improvement Project", September 2010
L/A:	Loan Agreement
MAFWE:	Ministry of Agriculture, Forestry and Water Economy
MKD:	Macedonian Denar （Currency）
MOF	Ministry of Finance
MM:	Man Month
NRW:	Non-Revenue Water
NTU:	Nephelometric Turbidity Unit
ODA:	Official Development Assistance
P.E.:	Public Enterprise
PEHZ:	Public Enterprise Hydrosystem Zletovica
SAPI:	Special Assistance for Project Implementation
SAPI Consultant:	Consultant for the SAPI Project
SAPI Project:	Special Assistance for Project Implementation (SAPI) on Zletovica Water Use Improvement Project
SAPROF II:	Special Assistance for Project Formation II (2003, JICA)
SCADA:	Supervisory Control And Data Acquisition
Three Agreements:	On-Lending, Implementation and Water Usage Agreement
TOC:	Taking Over Certificate
UF:	Ultrafiltration
VO:	Variation Order
WTP:	Water Treatment Plant

Yen:	Japanese Yen (Currency)
Yen Loan Consultant:	Consultant for the Yen Loan Project
Yen Loan Project:	Zletovica Basin Water Utilization Improvement Project

1. Introduction

1.1 Background

Zletovica, located in the north-eastern region of the Former Yugoslav Republic of Macedonia (hereinafter referred to as "Macedonia") suffers from water shortages during the summer season. In order to stabilize the raw water supply, a Loan Agreement (L/A) was made between the Macedonian government and JICA in November 2003 for the "Zletovica Basin Water Utilization Improvement Project" (hereinafter referred to as the "Yen Loan Project"), the first Japanese Official Development Assistance (ODA) Loan project in Macedonia. The Yen Loan Project was comprised of Package 1: construction of an access road (total length: 20 km), Package 2: construction of the multi-purpose Knezevo Dam (rock fill type, capacity: 1,500,000 m^3), Package 3: construction of the two intakes downstream of the dam and the transmission pipelines from the intakes to five municipalities (total length: 90 km), and Package 4: construction of the Supervisory Control And Data Acquisition (SCADA) center building and establishment of the SCADA system.

Probistip municipality is located in a mountainous region with a population of 16,200 (in 2013 according to the municipality) and has prospered through lead mining. Before the "Special Assistance for Project Implementation (SAPI) on Zletovica Water Use Improvement Project" (hereinafter referred to as the "SAPI Project") started, tap water was supplied to users after simple treatment of adding chlorine to raw water pumped up from shallow wells located along the Zletovica River in Probistip municipality. Due to the lack of rainfall, the water supply was frequently interrupted in the summer season, and the municipality made a request obtain a stable water source.

Stip municipality is located among the hills with a population of 48,000 (in 2013 according to the municipality) and is famous for being a center of textile production and having the sole public university in Eastern Macedonia. Before the SAPI Project started, tap water was supplied through a water treatment plant (hereinafter referred to as "WTP") using raw water pumped up from shallow wells located near the Bregalnica River in Stip municipality. The condition of the existing WTP was poor; surface concrete had flaked off and the reinforcing bar was exposed. Thus, Stip municipality began to seek an additional economical, stable, clean and safe water source.

Probistip WTP construction and Stip WTP rehabilitation works were estimated at roughly EUR 779,000 (equivalent to Yen 93,480,000 at an exchange rate of 120 yen/euro in April 2011) and EUR 389,500 (equivalent to Yen 46,740,000 with the same exchange rate). The

WTPs works were originally planned to be financed by Macedonian budget, but due to lack of funds in the responsible municipalities, this was not realized. Hence, the Ministry of Finance (hereinafter referred to as "MOF") of Macedonia requested that JICA provide financial assistance for the construction of a WTP in Probistip municipality and for the rehabilitation of a WTP in Stip municipality. The two works were later rearranged to be financed under the Yen Loan Project budget. *(Attachments 1, 2)*

Table 1-1 Outline of Water Supply Condition and Planned WTP

Item	Probistip	Stip
Outline of Water Supply Condition when the SAPI Project Started		
Water Served Population in 2010 *1	15,964	47,160
Water Served Population in 2009 *2	14,751	42,000
Supply Amount in 2010 *3	1,600 m^3/day	21,600 m^3/day
WTP Design Capacity	8,640 m^3/day (=100 L/sec)	30,200 m^3/day (=350 L/sec)
Water Source of Groundwater	Shallow wells located along the Zletovica River in Probistip municipality	Shallow wells along the Bregalnica River in Stip municipality
WTP System	Chlorination	Cascade gravity aeration chamber, pre-ozonation and rapid sand filters, and post-ozonation and chlorination
Outline of Planned WTP		
Total Population in 2013 *4	16,200	48,000
Planned WTP Design Capacity	6,480 m^3/day (=75 L/sec)	43,200 m^3/day (=500 L/sec)
Water Source	Intake 1 along Zletovica River downstream of Knezevo Dam	Intake 3 along Zletovica River downstream of Knezevo Dam
Note	New Construction	Rehabilitation

Note: "SAPI Consultant" in source means the SAPI Consultant prepared the product based on the study.
Source: *1: SAPROF II, *2, 3: JICA Expert Report, *4: each municipality, others: SAPI Consultant

Additionally, the MOF asked JICA for financial assistance to supervise the construction of the two WTP works, which JICA approved *(Attachment 3)*. The contract for the SAPI Project to assist the Implementation Unit, which is the Public Enterprise Hydrosystem Zletovica (hereinafter referred to as "PEHZ"), in supervising the WTP construction and rehabilitation was in effect from August 2011 until March 2013.

1.2 Objective

The objective of the SAPI Project was to assist PEHZ in the construction and rehabilitation of WTPs, and to contribute to the improvement of the efficiency of the Yen Loan Project.

1.3 Project Area

Municipalities of Probistip and Stip in the Zletovica Region, Macedonia

1.4 Counterparts

(1) Implementation Agency and Implementation Unit

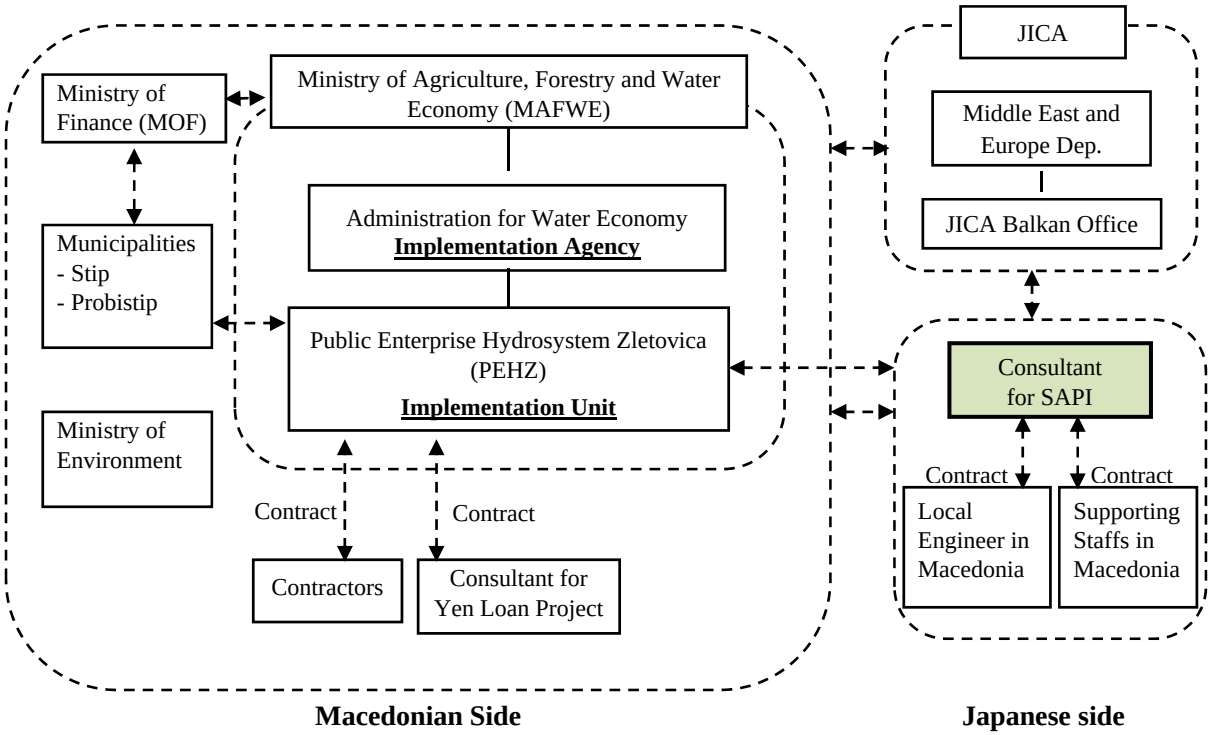
Implementation Agency: Ministry of Agriculture, Forestry and Water Economy (MAFWE)

Implementation Unit: Public Enterprise Hydrosystem Zletovica (PEHZ)

(2) Organizational Structure

The related organizational structure is shown in Figure 1-1. The role of each organization is mentioned below.

- **The Ministry of Finance (MOF)** was in charge of borrowing and allocating the funds for the Yen Loan Project and refunding the loan to JICA.
- **The Ministry of the Environment** was in charge of protecting the environment from any negative effects caused by construction and operation. They are also currently responsible for evaluating the quality of raw and treated water.
- **The Consultant for the Yen Loan Project** on the Zletovica Water Use Improvement Project (hereinafter referred to as the "Yen Loan Consultant") supervised the Yen Loan Project.
- **The Consultant for the SAPI Project** on Zletovica Water Use Improvement Project (hereinafter referred to as the "SAPI Consultant") assisted MAFWE and PEHZ in completing the construction and rehabilitation of WTPs on schedule and in accordance with the contracts exchanged and with the Macedonian laws and regulations. The SAPI Consultant employed local engineers and supporting staff to assist in the data collection, to support MAFWE and communicate with the stakeholders.



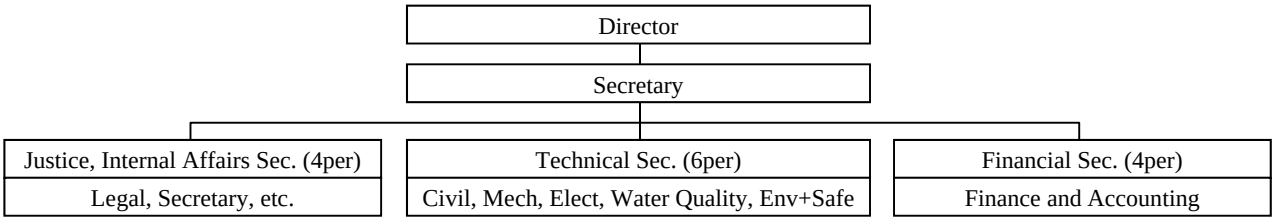
Source: SAPI Consultant

Figure 1-1 Relationship of the Organizations for the SAPI Project

The construction and rehabilitation of the WTPs were carried out as part of the Yen Loan Project. The Implementation Agency for the SAPI Project was the Administration for Water Economy under MAFWE, and the Implementation Unit was PEHZ, which was under the Administration for Water Economy under MAFWE. The completed WTPs were handed over to the Municipalities of Probistip and Stip. They are going to be operated and maintained by the following public enterprises (P.E.) / Waterworks Department of each municipality:

- P.E. Nikola Kalev for Probistip municipality
- P.E. ISAR for Stip municipality

The organizational structure of PEHZ as the Implementation Unit which is the counterpart of the SAPI Project is as follows:



Source: SAPI Consultant

Figure 1-2 Organizational Structure of PEHZ

1.5 Scope of Work

(1) The main activities of the SAPI Project

The main activities of the SAPI Project were as follows:

- To collect information and analyze the issues for the construction and rehabilitation of the WTPs.
- To assist and support MAFWE in the preparation of the basic design, cost estimation and materials required for the tender / variation order (VO).
- To assist and support with the negotiation of the contract and construction supervision through coordination with the related organizations.

(2) Activities of the SAPI Consultant

Activities of the SAPI Consultant were as follows:

- To examine the WTP system in Probistip municipality.
- To prepare the Feasibility Study (hereinafter referred to as "F/S") on WTP operation in Probistip municipality.
- To assist Probistip municipality and Stip municipality in making the three agreements (refer to Chapter 4. "Noteworthy Activities").
  - On-Lending agreement:
    The agreement between Probistip / Stip municipality and the MOF to utilize any unused Yen Loan amount for WTP construction and rehabilitation and the same amount shall be repaid to MOF in local currency (Macedonian Denar: MKD) by the municipalities.
  - Implementation agreement:
    The agreement between Probistip / Stip municipality and PEHZ to implement the Project cooperatively.
  - Water usage agreement:
    The agreement between Probistip / Stip municipality and PEHZ to sell and distribute raw water by PEHZ to the Waterworks Departments under municipalities.
- To assist MAFWE in the supervision of the construction of the WTP in Probistip municipality.
- To assist MAFWE in the supervision of the rehabilitation of the WTP in Stip

municipality.

- To assist Probistip municipality and Stip municipality in reaching an agreement with CMSR to receive Slovenian Funds for the construction and rehabilitation of the WTPs.
- To examine the water quality of the Zletovica River.

1.6 Consultant Team Members, Roles and Assignment Schedule

The SAPI Consultant's members, roles and the assignment schedule are shown below.

Because of the issues mentioned in Section 1.7 "Work Schedule", the SAPI Consultant assignment schedule was revised to increase the MM (man months) from 17.79 to 26.79 as the assignment of 9 MM were added to manage the three agreements and to assist the final process in 2014.

Table 1-2 Assignment Schedule (Original)

Location	Task	Person in charge	2011					2012											2013
			8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
Filed Work	Project Manager / Water Treatment Engineer	Kunio Kimata		■	■		■			■					■		■	■		
	Deputy Project Manager / Construction Engineer	Yuichi Hashimoto			■			■					■					■		
	Mechanical / Electrical Engineer	Hiroshi Omura			■			■			■				■			■		
Work in Japan	Project Manager / Water Treatment Engineer	Kunio Kimata	□			□						□				□				□
	Deputy Project Manager / Construction Engineer	Yuichi Hashimoto	□									□				□				□
	Mechanical / Electrical Engineer	Hiroshi Omura	□						□							□				
Report			△ ICR													△ ITR			△ DFR	△ FR

Source: SAPI Consultant

7

Table 1-3 Assignment Schedule (Amended)

Location	Task	Person in charge	2011					2012											2013											2014								
			8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9
Field Work	Project Maneger/Water Treatment Engineer	Kunio Kimata		■	■		■	■			■	■	■			■	■			■	■	■	■	■	■		■								■				
	Deputy Project Maneger/Construction Engineer	Yuichi Hashimoto			■		■				■	■					■		■	■					■									■			■			
	Mechanical/ Electrical Engineer	Hiroshi Omura			■			■			■	■							■						■												■			
Work in Japan	Project Maneger/Water Treatment Engineer	Kunio Kimata	□			□						□								□		□													□				
	Deputy Project Maneger/Construction Engineer	Yuichi Hashimoto	□									□								□													□					
	Mechanical/ Electrical Engineer	Hiroshi Omura	□				□													□																			
Report			△ ICP												△ ITR																						△ DFR	△ FR

Source: SAPI Consultant

1.7 Work Schedule

The work schedule of the SAPI Project is shown in Tables 1-4 (Original) and 1-5 (Revised). The SAPI Project schedule was extended from the original period of 18 months to 37 months mainly due to the following four issues, the three agreements and procuring Slovenian Funds, as described in detail in Chapter 4. “Noteworthy Activities”.

Major events related to the SAPI Project are shown in Table 4-1 “Chronology of the Project”.

(1) Issues related to the Construction of Probistip WTP

Once the rapid sand filter process was selected for the Probistip WTP during preparation of the basic design in September 2011, Slovenian Funds were organized for additional funding. Probistip municipality proposed using an ultrafiltration (UF) method as the treatment method since it was common in Slovenia. The SAPI Consultant reviewed and compared the two systems, rapid sand filter and UF, in terms of technology, construction period, construction cost and operation cost. After comparison, the UF method was selected in April 2012.

The design change and additional Slovenian Fund caused a delay in the start of the WTP construction from January 2012 to May 2012. However, the WTP construction was completed on schedule by December 2012, because the UF method construction period was shorter than that of the rapid sand filter.

(2) Issues related to the Rehabilitation of Stip WTP

Initially, the SAPI Consultant was supposed to review the rehabilitation plan as a basic design prepared by the local consultant hired by Stip municipality. But, the preparation of the basic design was delayed and affected the start of WTP rehabilitation starting time delaying it from January 2012 to July 2012. After the rehabilitation started, a decision was made to receive a Slovenian Fund in the same manner as Probistip. This resulted in some revisions on the WTP rehabilitation work.

Because the Slovenian Fund was scheduled from January 2013, the construction schedule was planned according to the funding schedule so that the Yen Loan Project fund was utilized until the end of 2012 and the Slovenian Fund was utilized from the beginning of 2013. The Yen Loan Project portion was completed on schedule by December 2012.

The mayoral election in Stip municipality and the reorganization of the Slovenian government cabinet also caused a delay in completion of the Slovenian Fund agreement. Even though it was signed in May 2013, it took until June 2013 to be authorized by the

European division of the Macedonian government, which has the authority to activate the agreement. After it was clear that the Slovenian Fund was available, the scope of the work was revised by adding a roof, a wall and other items as additional work. The rehabilitation work resumed in September 2013, and the rehabilitation work was completed and the commissioning test was done in June 2014, although the original completion date was set for March 2014. This delay stemmed from the rehabilitation work including the additional work taking longer than expected. Moreover, receiving clean raw water was not yet possible since almost five years had passed since completion of the pipeline from the intake to the Stip WTP, and many turbidity-causing materials had settled in the pipeline necessitating cleaning by flushing. In order to avoid erosion of the adjoining farmland, the pipeline had to be cleaned by gradually flushing small volumes of water, which consequently took four months from March 2014 till June 2014.

(3) Compliance with the international construction methods

The supervision of WTP construction / rehabilitation was carried out based on the technical specifications and General Conditions referring to “Conditions of Contract for Works of Civil Engineering Construction, Fourth Edition 1987, reprinted 1992 with amendments”, FIDIC (Fédération Internationale des Ingénieurs Conseils / International Federation of Consulting Engineers) according to the supervision methods for yen loan projects. However, neither PEHZ nor the contractors were familiar with construction or supervision under the FIDIC so that The SAPI consultant assisted the CP on the WTP construction and rehabilitation work according to the FIDIC.

(4) Coordination between raw water supplier (PEHZ) and tap water suppliers

Separate organizations are responsible for water supply systems from the source to the point of delivery: one is PEHZ as the raw water supplier, under MAFWE, which handles water from the river to the municipality, and the other, under the municipality, is the tap water supplier that handles the raw water and treats it for the end users. Because of their opposing interests, the entire process became complicated and it was difficult to obtain smooth cooperation in terms of planning, construction, and management.

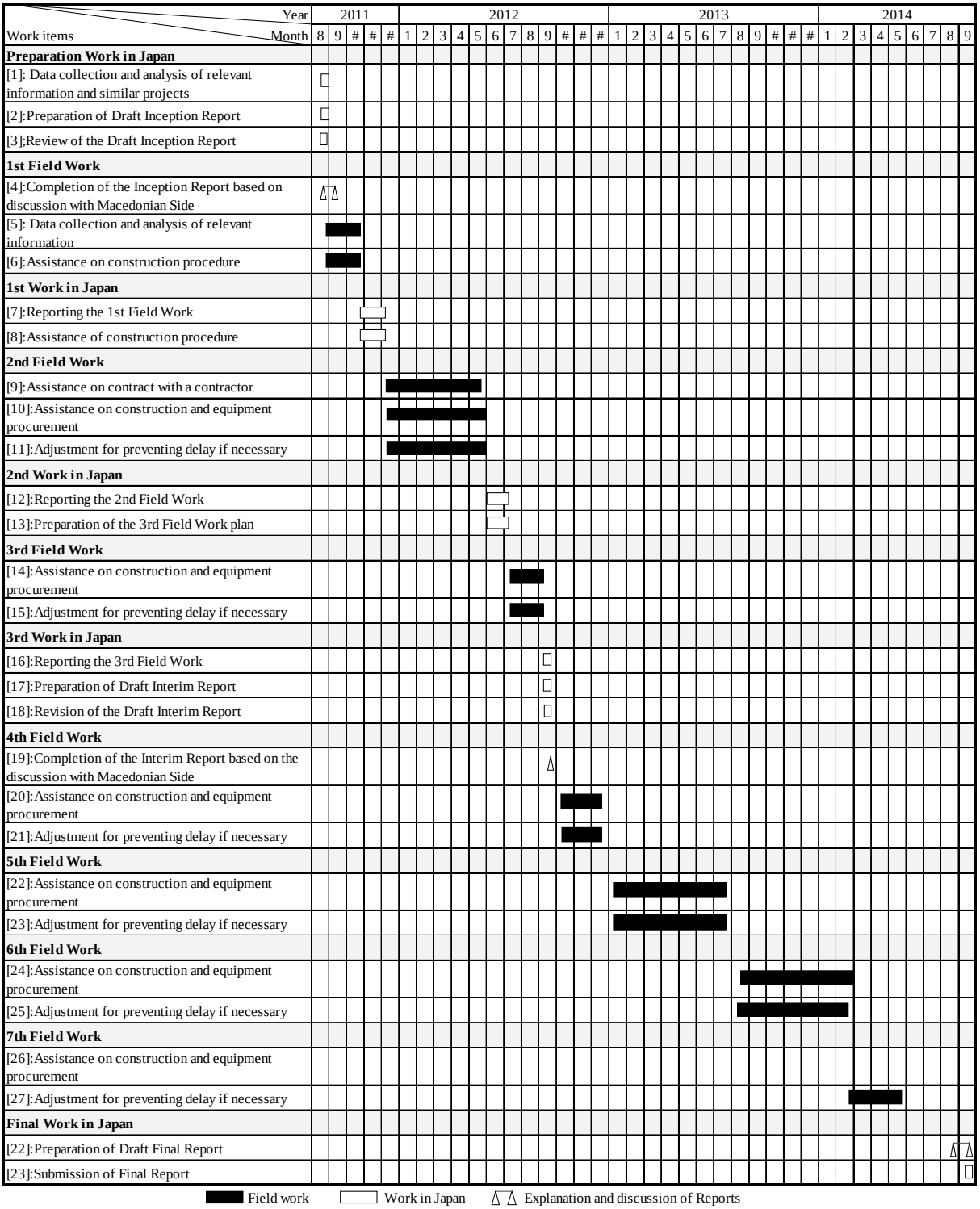
Table 1-4 Work Schedule (Original)

Work items	Year	2011					2012												2013
	Month	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
Preparatory Work in Japan																			
【1】: Data collection and analysis of relevant information and similar projects		□																	
【2】: Preparation of Draft Inception Report		□																	
【3】: Revision of the Draft Inception Report		□																	
1st Field Work																			
【4】: Completion of the Inception Report based on discussion with Macedonian Side		△	△																
【5】: Data collection and analysis of the relevant information			■	■															
【6】: Assistance on construction procedure			■	■															
1st Work in Japan																			
【7】: Reporting the 1st Field Work					□														
【8】: Assistance on construction procedure					□														
2nd Field Work																			
【9】: Assistance on contract with a contractor						■													
【10】: Assistance on construction and equipment procurement							■	■	■	■									
【11】: Adjustment for preventing delay if necessary							■	■	■	■									
2nd Work in Japan																			
【12】: Reporting the 2nd Field Work											□								
【13】: Preparation of the 3rd Field Work plan											□								
3rd Field Work																			
【14】: Assistance on construction and equipment procurement												■	■	■					
【15】: Adjustment for preventing delay if necessary												■	■	■					
3rd Work in Japan																			
【16】: Reporting the 3rd Field Work															□				
【17】: Preparation of Draft Interim Report															□				
【18】: Revision of the Draft Interim Report															□				
4th Field Work																			
【19】: Completion of the Interim Report based on the discussion with Macedonian Side																△	△		
【20】: Assistance on construction and equipment procurement																	■		
【21】: Adjustment for preventing delay if necessary																	■		
Final Work in Japan																			
【22】: Preparation of Draft Final Report																		△	△
【23】: Submission of Final Report																			□

■ Field work　□ Work in Japan　△—△ Explanation and discussion of Reports

Source: SAPI Consultant

Table 1-5 Work Schedule (Revised)



Source: SAPI Consultant

1.8 Reports

The SAPI Consultant submitted the following reports to JICA.

Table 1-6 Reports of SAPI Project

Report	Components	Due (Original)	Due (Revised)
Inception Report	• Objectives • Study components and procedures • Work schedule • Organization • Others	September 2011	September 2011
Interim Report	• Evaluation of the tender / VO with the result and issues • Construction progress of the Probistip and Stip WTPs, future plans and variations of the Yen Loan Project components • Components of technical assistance carried out through the SAPI Project • Capacity development status of MAFWE and the related organizations • Letters, memorandums and other documents exchanged between MAFWE and the related organizations • Others	September 2012	September 2012
Final Report	• Construction progress of the Probistip and Stip WTPs, future plans and variations of the Yen Loan Project components • Components of technical assistance carried out through the SAPI Project • Capacity development status of MAFWE and the related organizations • Letters, memorandums and other documents exchanged between MAFWE and the related organizations • Others	February 2013	September 2014

Source: SAPI Consultant

2. Issues and Required Measures

2.1 Probistip WTP

(1) Water Supply Condition when the SAPI Project Started

Prior to the SAPI Project, the water system in Probistip was composed of shallow wells located near the Zletovica River, a reservoir, and chlorine dosage facilities. The pump equipment and piping were superannuated, and the water supply frequently failed due to pump and pipe breakage. Moreover, the water source was not reliable in summer, as Probistip had been suffering from drought. In addition, Probistip municipality was a city that prospered in lead mining, and use of groundwater was regarded as questionable although the water quality analysis results were acceptable according to the Macedonian standards. Therefore, the citizens of Probistip often waited to use the clean water sourced from the upper stream of the Zletovica River, which turbidity in Nephelometric Turbidity Unit (NTU), is usually less than two.

(2) Change of Budget and Treatment System

Probistip WTP construction was not included in the Yen Loan Project because the basic design had not been prepared by the municipality. WTPs were supposed to be constructed by the municipalities with their own budget, but Probistip municipality was not able to construct them due to budgetary constraints. In April 2011, MOF made a request to JICA to construct the Stip WTP within the Yen Loan Project, and it was accepted. When the SAPI Project started, a rapid sand filter system was designed for the WTP under the Yen Loan Project budget. The Yen Loan Consultant recommended this rapid sand filter system because of budget limitations. Shortly after the SAPI Project started, an additional Slovenian Fund was organized, and Probistip municipality submitted a proposal for construction of a WTP with an ultrafiltration treatment system under the Slovenian Fund. Probistip municipality eventually decided to use the UF method instead of the rapid sand filter system and the design was revised. Fund allocation by source is shown in Table 2-1.

Table 2-1 Fund Allocation (Probistip)

Construction Cost	Yen Loan	Slovenia	Municipality	Total
Budget (Yen)	93,480,000	51,110,000	4,472,000	149,062,000
Work item	Treatment Equipment	Building, Foundation	Miscellaneous	-

1 EUR=106.48 yen on 11 May 2012
Source: SAPI Consultant

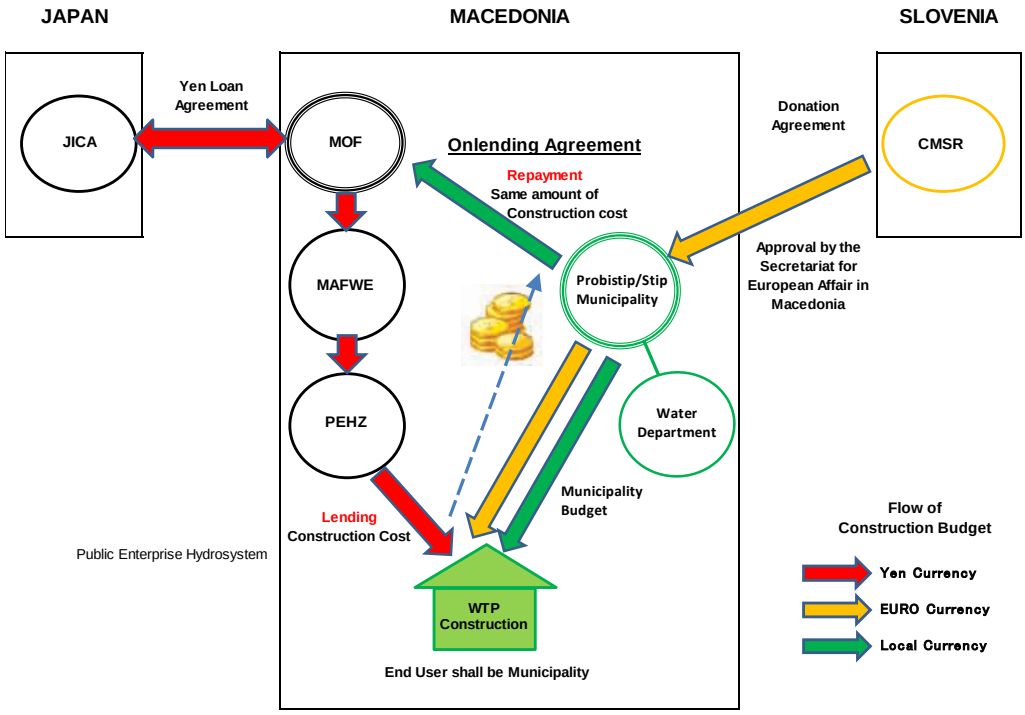
(3) Three Agreements (On-Lending, Implementation, Water Usage Agreement)

1) On-Lending Agreement between MAFWE under the MOF and Probistip Municipality

As mentioned in Section 1.1 “Background”, the budget for WTP construction was rearranged to be financed under the Yen Loan Project. As the municipality had the necessary budget for WTP construction, they started to prepare for implementation. Nevertheless, this budget was prepared under the L/A between the MOF and JICA for the Yen Loan Project implemented by MAFWE so the constructed facility would belong to MAFWE. Since the final user of the WTP facility would be an Enterprise of the municipality, it was to be handed over from MAFWE to the municipality after the completion of construction. Therefore, an agreement was required on how the municipality would repay the construction cost amount to the MOF.

An On-Lending Agreement was made between Probistip municipality and the MOF for repayment in Local Currency in the same amount as the construction cost. The interest of the On-Lending Agreement was set at 1.5%, the same as the L/A. The municipality would operate the WTP and the income would be used for repayment of the borrowed amount. Moreover, the lending limit was based on the fiscal scale of the municipality, and Probistip municipality needed to negotiate with the MOF based on their fiscal program.

The flow of the Yen Loan Project budget and On-Lending Agreement amount is indicated in Figure 2-1 for Probistip and Stip WTPs construction and rehabilitation.



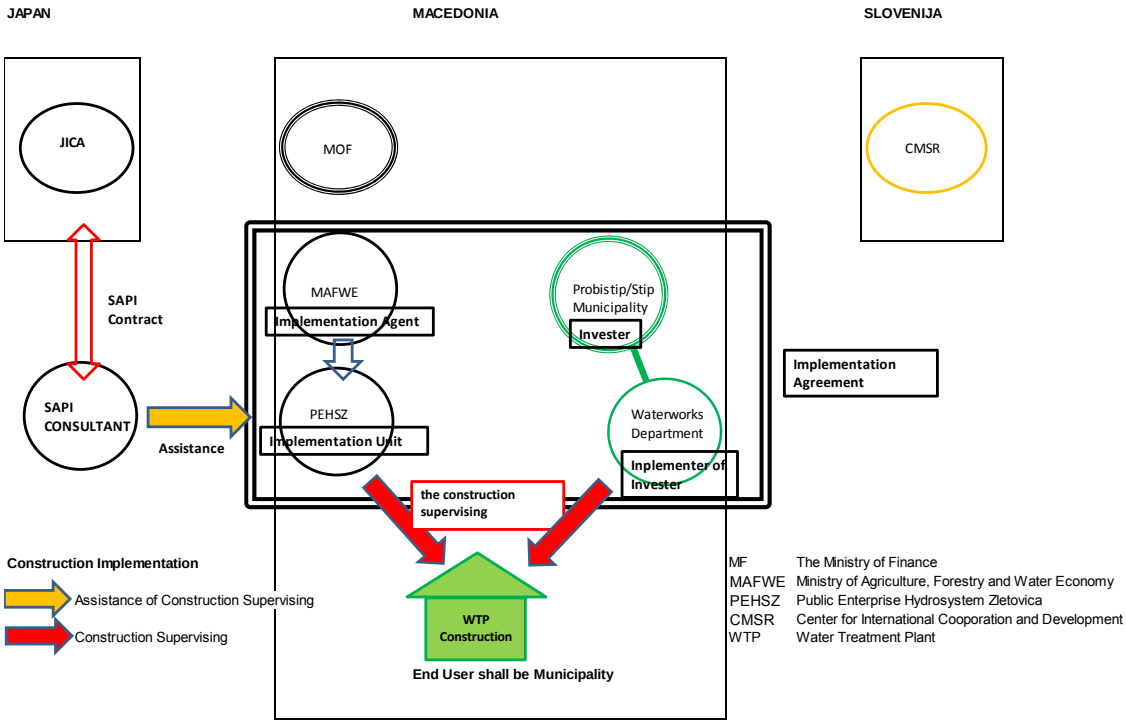
Source: SAPI Consultant

Figure 2-1 Construction Budget Flow

2) Implementation Agreement

In the Yen Loan Project, PEHZ under MAFWE was supervising construction with the Yen Loan Consultant. PEHZ covered their operation cost with the annual appropriation provided by MAFWE, and income from the sale of raw water. With the ownership of the facility belonging to the municipality, the budget for the construction supervision of the WTP was not accepted by MAFWE. Therefore, the SAPI Consultant provided assistance to PEHZ in supervising construction on the WTP and certifying the progress.

The relationship between the entities of the Implementation Agreement is indicated in Figure 2-2 for Probistip and Stip WTP construction and rehabilitation.



Source: SAPI Consultant

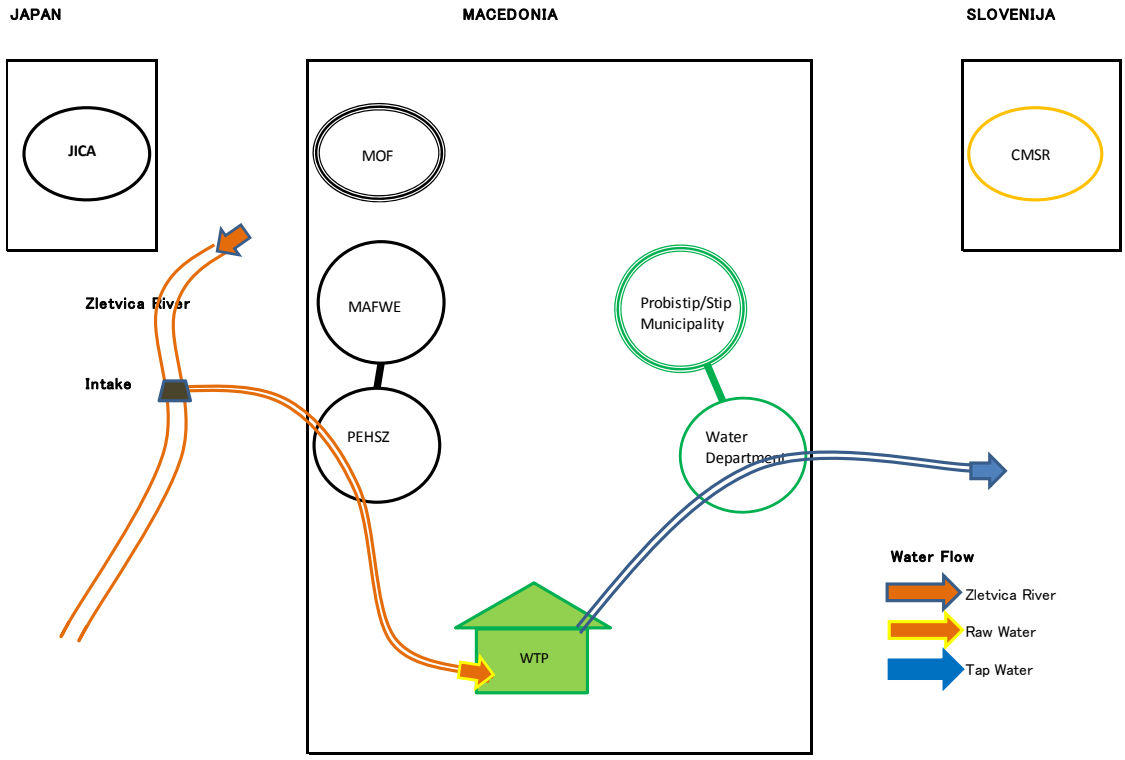
Figure 2-2 Relationship of Implementation Agreement Entities

3) Water Usage Agreement

In order to operate the intake, treatment and distribution facilities of raw water rationally and economically, the handling rule including price should be agreed between the supplier (PEHZ) and the receiver (the Public Enterprise / Waterworks Department).

Although the Water Usage Agreement was signed by both the municipality and PEHZ, their deliberations were prolonged because of their conflicting interests.

The relationship of entities involved in the Water Usage Agreement is indicated in Figure 2-3 for Probistip and Stip WTP construction and rehabilitation.



Source: SAPI Consultant

Figure 2-3 Relationship of Water Usage Agreement Entities

(4) Raw Water Quality Control

Turbidity of raw water needs to be below 20 NTU to prevent damage to the membranes in a UF method. Thus, it was decided that intake would be switched from the Zletovica River to existing shallow wells when the NTU of the river water exceeds 20 due to rain. PEHZ and the Waterworks Department will communicate closely with each other so that PEHZ will close the intake valve to stop water distribution to the transmission pipe and the Waterworks Department will operate the well pump when the river water turbidity becomes high.

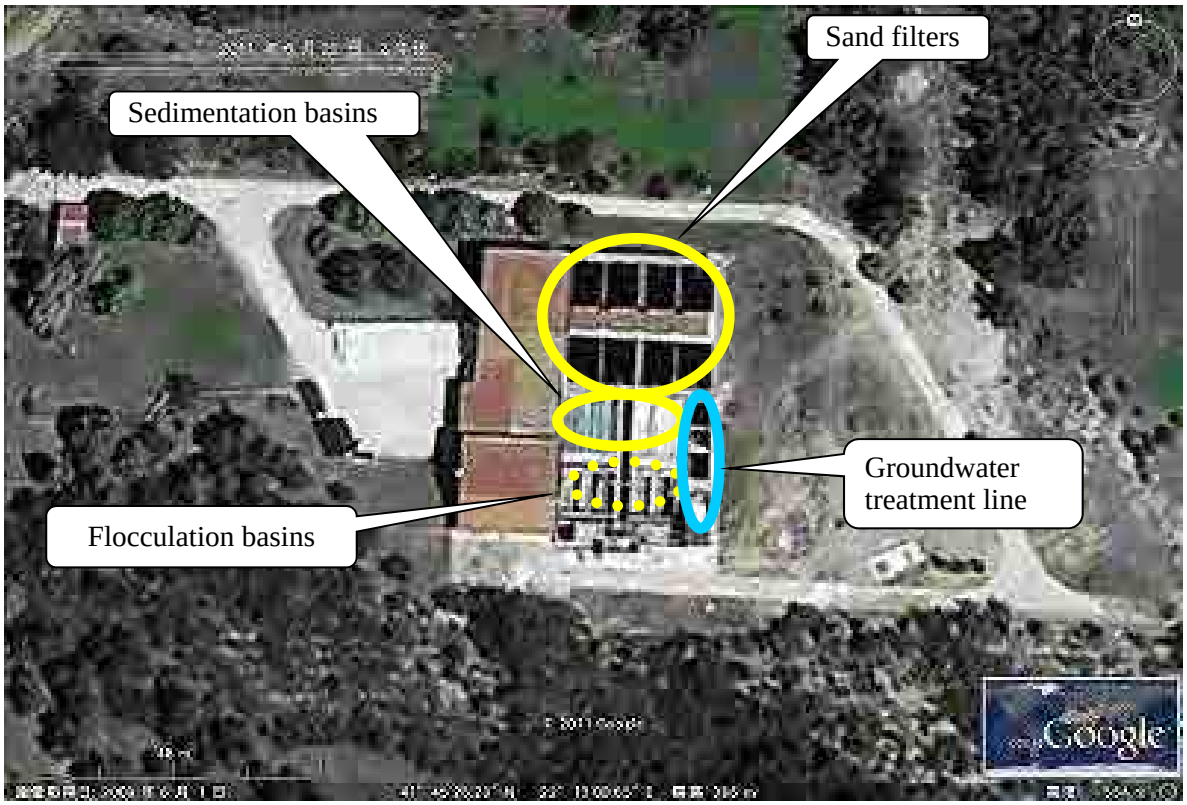
(5) Construction Supervision of the Slovenian Fund Portion

The Implementation Agreement was established for constructing and rehabilitating the WTPs under the Yen Loan Project but the Slovenian Fund was not considered when the agreement was prepared. It was necessary to supervise construction and issue the progress certifications under the Slovenian Fund, but PEHZ had no budget for consultant who took responsibility for this when the Slovenian Fund was applied because it was added after Implementation agreement. The situation was same to Stip WTP rehabilitation.

2.2 Stip WTP

(1) Water Supply Condition when the SAPI Project Started

The existing Stip WTP was designed in 1987 and constructed in 1990. The features are shown in Figure 2-4.



Source: SAPI Consultant

Figure 2-4 Existing Stip WTP Layout

The existing WTP is composed of two systems: the groundwater treatment line and the surface water treatment line.

When the SAPI Project started, the groundwater treatment line was operational and supplying tap water to the city, but the efficiency was low because of aging facilities. The system is composed of a cascade gravity aeration chamber, pre-ozonation and rapid sand filters, and post-ozonation and chlorination. The water source is a shallow well near the Bregalnica River.

The surface water treatment line, which is also composed of pre-ozonation, a flocculation basin with sludge blanket method, a sedimentation basin and a rapid sand filter, which is common for groundwater lines, was not operational due to malfunctions in water supply facilities. Although the raw water supply facilities were constructed to receive water from

the Zletovica River in 2010, the treatment line could not operate due to malfunctions in the WTP system such as chemical dosage equipment, valves, concrete structure corrosion and others.

(2) Change of Budget and Design

A request to rehabilitate the Stip WTP within the Yen Loan Project was made by the MOF to JICA in April 2011, and it was accepted.

When the SAPI Project started, WTP rehabilitation was designed under the Yen Loan Project budget. Shortly after the SAPI Project started, an additional Slovenian Fund was organized and the revision of the design was considered. The original plan under the Yen Loan Project was to rehabilitate the WTP only. However, with the allocation of the Slovenian Fund, installation of the roof over the entire treatment plant was added. Because the temperature of the site drops below minus 10 degrees Celsius in winter, installation of the roof allowed hygienic and safe operation. Fund allocation by source is shown in Table 2-2.

Table 2-2 Fund Allocation (Stip)

Construction Cost	Yen Loan	Slovenia	Municipality	Total
Budget (Yen)	46,740,000	44,231,000	3,250,000	94,221,000
Work item	Treatment Equipment	Installation, piping, roofing	Miscellaneous	

1 EUR=98.58 Yen (28 July 2012)
Source: SAPI Consultant

(3) Three Agreements (On-Lending, Implementation, Water Usage Agreement)

They are the same as those for Probistip municipality. Please refer to Section 2.1(3).

(4) Raw Water Quality Control

It was agreed between PEHZ and the Waterworks Department that raw water turbidity (NTU) would be below 20 in order to reduce the chemical usage volume, while the treatment system is capable of treating water up to NTU 1,000. To this end, PEHZ and the Waterworks Department will communicate closely with each other so that PEHZ will close the intake valve to stop water distribution to the transmission pipe and the Waterworks Department will operate the well pump when the river water turbidity becomes high.

(5) Local Election in Macedonia

Due to the local election in March 2013 in Stip, new contracts, including the Slovenian Fund contract, were suspended. After the election, it was necessary to explain to the new

mayor the background of the WTP rehabilitation and the three above-mentioned agreements, and request that he should proceed with the contract execution of the Slovenian Fund.

(6) Re-establishment of Cabinet in Slovenia

The Cabinet of Slovenia fell in 2013 due to the European economic crisis, and it became impossible for CMSR, who were handling the grant funds in Slovenia, to continue this responsibility for the WTP rehabilitation.

(7) Approval by the Secretariat for European Affairs of the Macedonian Government

After the Agreement for the Slovenian Fund was signed between the mayor and CMSR in May 2013, approval by the Secretariat for European Affairs of the Macedonian government was required but it was difficult to persuade them on early issuance.

(8) Construction Supervision of the Slovenian Fund Portion

The situation was the same as that in Probistip municipality. Please refer to Section 2.1(5).

(9) Additional Repair Work

The need for additional repair work, leakage rehabilitation of the water channel leading to the sand filter was revealed during the rehabilitation work in 2013. Requirements were considered.

(10) Re-washing of Transmission Pipeline

In preparation for examining the treatment function, flushing out the transmission pipeline was required. PEHZ was asked to carry out the flushing work until the turbidity value of distributed water reached an acceptable level (NTU<20).

3. Activities Undertaken

3.1 Common Activities

(1) Confirmation of Raw Water Quality

The Zletovica River, including the points of intakes 1 and 3, is categorized as Class II in the following standards:

- Decree on Water Classification (Official Gazette No. 18/99)
- Decree of Categorization of the River, Lake, Reservoir, Groundwater

Concentrations of major items by class as categorized in the Decree on Water Classification as the Environmental Standards are shown in Table 3-1.

Table 3-1 Environmental Standards

Indicators	Concentrations for adequate class				
	Class I	Class II	Class III	Class IV	Class V
Turbidity in NTU	<0.5	0.5-1.0	1.1-3.0	>3.0	>3.0
Dissolved oxygen in mg/L	>8.00	7.99-6.00	5.99-4.00	3.99-2.00	<3.00
BOD5 in mg/L	<2.0	2.01-4.00	4.01-7.00	7.01-15.00	>15.00
COD permanganate in mg/L	<2.50	2.51-5.00	5.01-10.00	10.00-20.00	>20.00
Coliform bacteria number in 100 ml	5	5-50	50-500	>500	>500

Source: SAPI Consultant

Class II implies that the water quality is relatively clean and allows the use of the water as raw water for water treatment plants (WTPs). Any human activities should not damage the Class II water quality.

The Environmental Standards specify a desired state in turbidity, contamination and others. The standards are policy guidelines that regulate the effect of human activity upon the environment to maintain the particular environmental components and function.

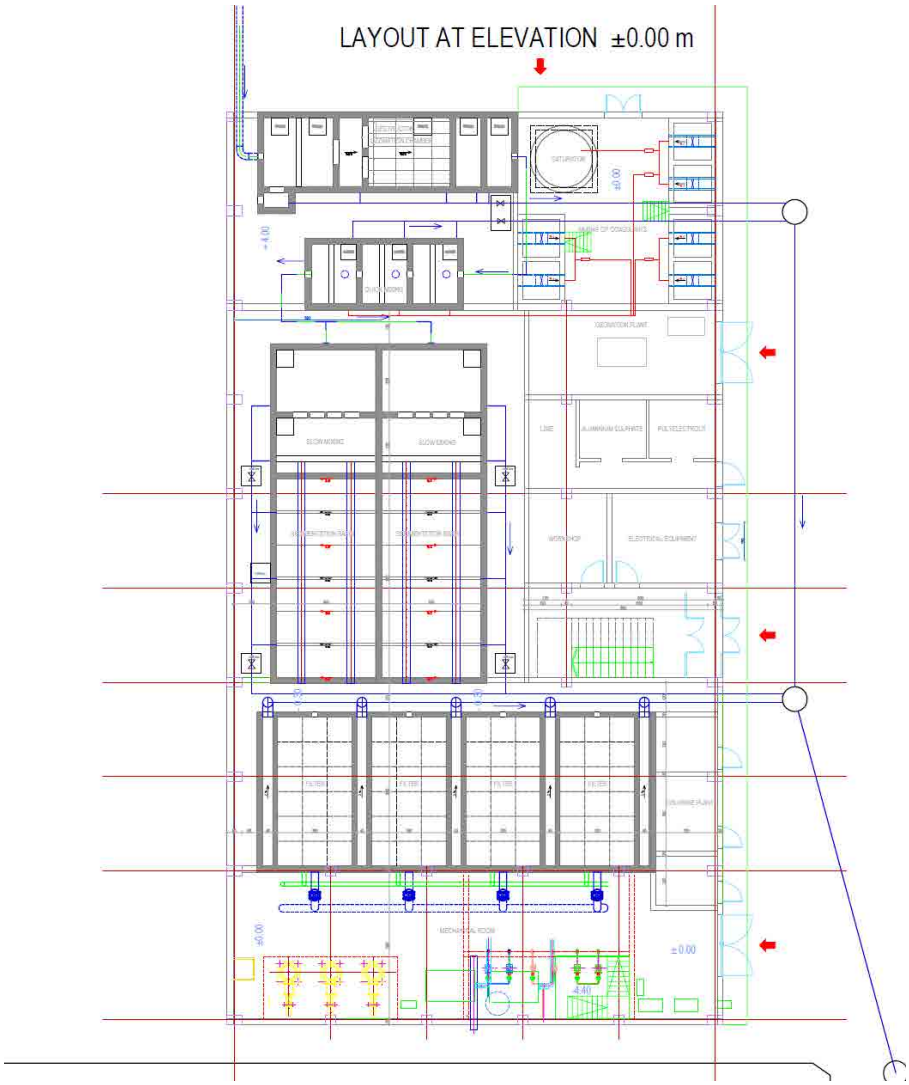
The SAPI Consultant confirmed that raw water quality is acceptably below the standard levels.

Class II water requires that the turbidity is 0.5-1.0 NTU, but after rainfall, the river water quality becomes high in turbidity reaching over 100 NTU. The SAPI Consultant advised that PEHZ was not obliged to supply raw water of Class II to WTPs. WTPs treat the raw water supplied from PEHZ to match the drinking water quality standards of less than 1.0 NTU as regulated in the Macedonian Standard (Official Gazette of the Republic of Macedonia, No. 46 on 7 April, 2008) of Drinking Water Standards.

3.2 Probistip WTP

(1) Review of Design for Probistip WTP

In the Yen Loan Project, basic design work started from June 2011. In September 2011 during the basic design work period, a selection of treatment processes were studied, comparing the classical method (coagulation, sedimentation and filtration) and the UF method. The construction costs were estimated at 1.0 million euros for the classical method and 1.5 million euros for the UF method. As the result of the comparison study, the classical method was initially selected because it was economical and more reliable as the UF method was not commonly used in Macedonia. Although the basic design was scheduled for completion by October 2011, the draft basic design was not prepared until March 2012 by a local consultant with the assistance of the SAPI Consultant. The layout of the WTP with the classical method is shown below and the cost was estimated at 1.8 million euros.



Source: SAPI Consultant based on results of data collection

Figure 3-1 Draft Probistip WTP Layout

There were two conditions on implementation of the Probistip WTP in March 2012. One was related to the time schedule, as the WTP's construction was to be completed by the end of 2012, which was the term of the L/A. The other was related to the budget, as only about 1.4 million Euros were available, including the JICA Loan of 800,000 Euros, the Slovenian Fund of 480,000 Euros and the Probistip municipal budget of 120,000 Euros.

Therefore, in order to comply with the above conditions, the draft basic design was reviewed, and it was discovered that the construction cost for the classical method was able to be reduced to 1.3 million Euros by changing the tank and equipment layout.

Additionally, the application of the UF method was studied again, whereas a comparison of the two treatment systems is shown in Table 3-2.

Table 3-2 Comparison of Treatment Systems

Items	Classical method (Rapid sand filter)	UF method
Construction cost	1.3 million euros	1.4 million euros
Operation maintenance cost	0.07 euro/m^3	0.06 euro/m^3
Treatment capacity in turbidity	<1,000 NTU	<100 NTU
Required staff numbers	About 15	About 5
Reliability	High, many similar cases are applied.	In Macedonia, it has not been applied, but it is becoming common in the world.
Construction period	Longer and difficult to complete the construction by the end of 2012.	Shorter and possible to complete the construction by the end of 2012.

Source: SAPI Consultant

As shown above, the construction cost of the classical method was slightly more economical, but the OM cost was more expensive. Additionally, the classical method can handle higher water turbidity levels with the WTP (about ten times more than the UF method). Furthermore, the use of the existing groundwater system would continue as a backup system, even after the WTP is constructed. Thus, groundwater would be used when the river water turbidity is high. Therefore, the limitation of the UF method capacity to treat raw water up to 100 NTU does not cause any problems. Regarding the construction period, the UF method is shorter than it of the classical method. In addition, the water level head is sufficient enough to supply water to the ultrafilter by gravity, as the elevation of the pipeline upstream point is about 800 m and that of the WTP is about 500 m, resulting in 300 m (30 bar) of available pressure. Thus, the required pressure for UF operations (3 bar) can be obtained by natural gravity and pumps are not needed to supply water to the UF. Therefore, with the UF method not requiring pumps, a lower OM cost is enabled.

In consideration of the above, and with the assistance of the SAPI Consultant, the UF method was adopted for the Probistip WTP construction.

The plant contains three units, each with a capacity of 25 L/sec., for a total capacity of 75 L/sec, in which space for one extra set was allocated to meet future demands. Additionally, a hollow fiber membrane of 0.01-0.001 micrometers in size was used for the UF film, which is expected that all the pathogenic bacteria and viruses will be removed from raw water in this system. The UF unit and the fiber pictures are shown below in Figures 3-2 and 3-3.

Source: SAPI Consultant

Figure 3-2 One Unit of UF

Source: SAPI Consultant

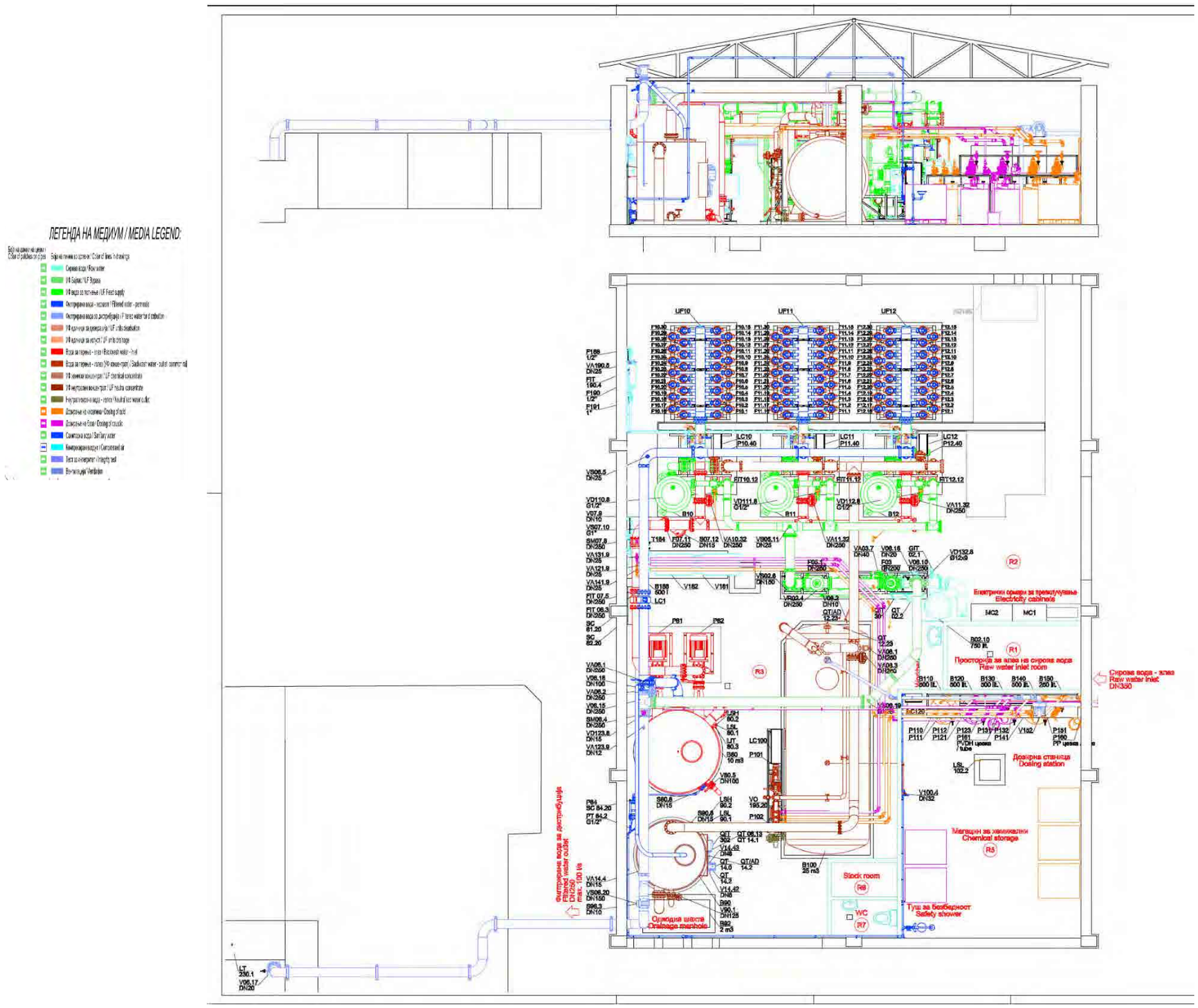
Figure 3-3 Edge of the UF Unit

Raw water passes along the inside of the tube and is filtered at a pressure of 3 bars through to the outside of the tube. In order to wash the filth collected at the ultrafilter, backwash is applied about every half an hour. The ultrafilter is also cleaned with chemicals such as NaOCl, HCl and NaOH, and these backwashes and chemical cleaning are applied automatically. Backwashed water is drained into a tank to be neutralized and drained to a sedimentation tank. Overflow water from the sedimentation tank is drained to public drainage or the mining factory for use and sediment material is removed periodically, about once a year.

The layout of the existing reservoir and the newly constructed WTP is shown in Figure 3-4.

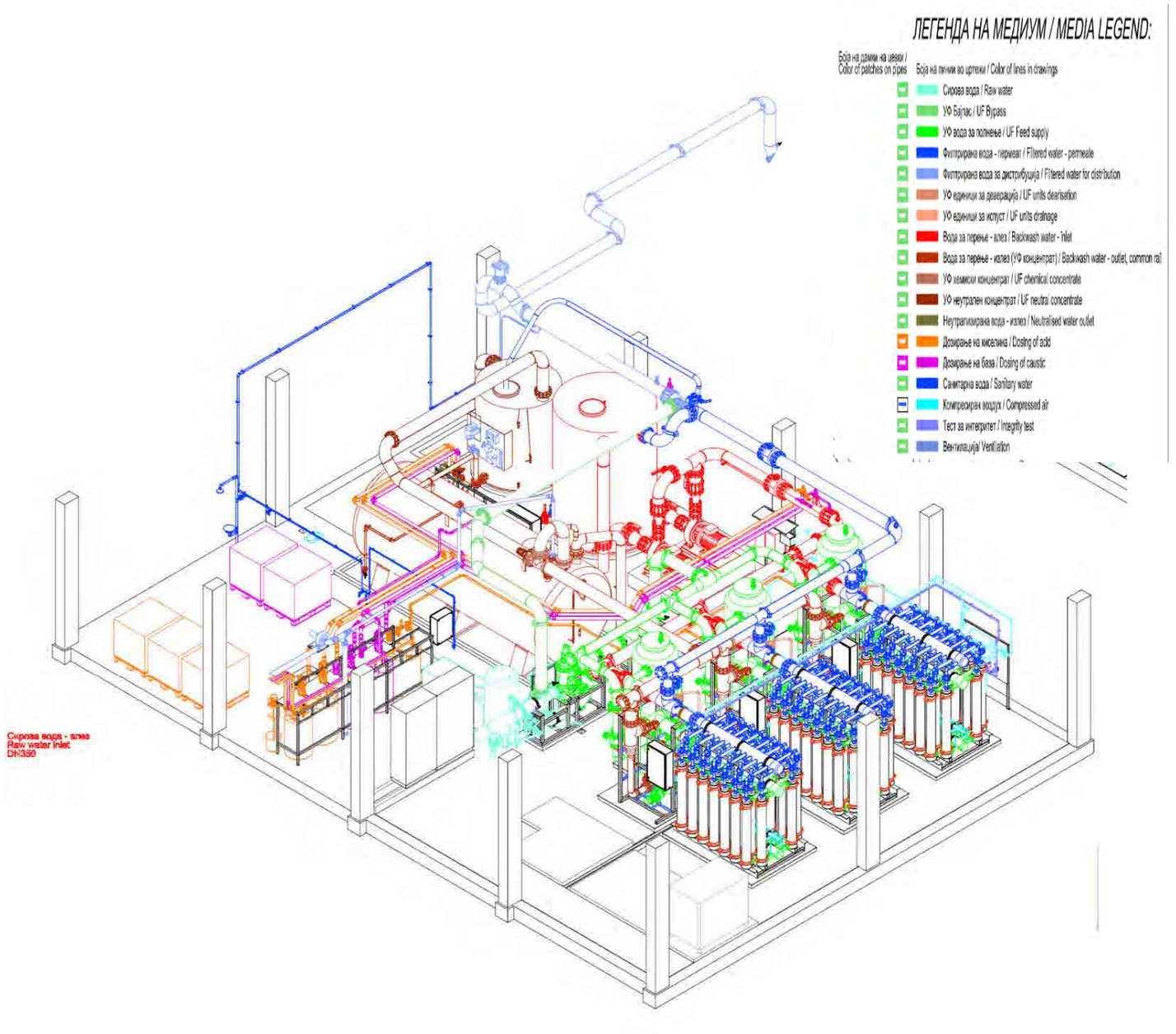
Source: SAPI Consultant

Figure 3-4 Layout of the New Probistip WTP (white roof) and Reservoir (red roof)



Source: SAPI Consultant based on results of data collection

Figure 3-5 Plan and Cross Section of Newly Constructed Probistip WTP



Source: SAPI Consultant based on results of data collection

Figure 3-6 Bird's Eye View of Newly Constructed Probistip WTP

(2) Three Agreements (On-Lending, Implementation and Water Usage Agreement)

The SAPI Consultant assisted PEHZ in making these Agreements (refer to Chapter 4. “Noteworthy Activities”).

(3) Commissioning Test

Before the commissioning test, the pipeline was cleaned. At the beginning of the commissioning test, water with turbidity of more than 500 NTU was discharged in the Probistip WTP.

During the commissioning test, a trial and error approach was applied to determine the adequate chemical (coagulant agent) dosage rate referring to the similar WTP applications, including Sveti Nikole WTP, which was constructed under funding by the Sveti Nikole municipality. This municipality is one of the targeted raw water supply municipalities under the Yen Loan Project, and SCADA was set up for automatic operation.

(4) Assistance on Supervising Construction of Probistip WTP by PEHZ

As mentioned in Section 2.1 (2) “Change of Budget and Treatment System”, the construction budget was constituted of the Yen Loan, Slovenian Fund and municipality fund, but a budget for supervising the construction was not included in the Slovenian Fund. Therefore, it was discussed how to supervise that portion among PEHZ, the municipality and the SAPI Consultant, and agreed that PEHZ would act as the Implementation Unit with assistance by the SAPI Consultant in a similar way as the Yen Loan Project.

Construction work started in May 2012 and was carried out under daily operation of the existing reservoir without stoppage of water supply and completed in December 2012. During the construction, the SAPI Consultant called monthly meetings with the municipality, the Waterworks Department and PEHZ, and discussed the quality, the process and the problems of the construction.

Regarding the supervision of building construction, since the contractor had experienced the rehabilitation work of the SCADA Center under the Yen Loan Project, the SAPI Consultant applied the same protocol such as material approval, inspector’s presence and progress checks.

Regarding the supervision of water treatment facilities, sequencing supervision was done in the steps of equipment, installation, and the functional test.

The SAPI Consultant conducted the shop inspection of equipment in Slovenia before shipment to the site. A WTP engineer and the SAPI Consultant electrical engineer

inspected the installation work and the functional test done by the Slovenian engineer. The SAPI Consultant certified the progress of payment to the contractor according to the contract amount consisting of the Yen Loan Project budget, the Slovenia Fund, and the municipal budget.

3.3 Stip WTP

(1) Review of Design for Stip WTP Rehabilitation

A local consultant of Stip municipality was preparing the basic design to rehabilitate the WTP when the SAPI Project started. The basic design needed to be accepted by the Municipality of Stip and the Water Department. The SAPI Consultant assisted with the review of this design.

The following items were reviewed by the SAPI Consultant on the design made by the local consultant of Stip municipality.

1) Operation system was discussed with the Water Department to determine the valve type, such as inflow valve, ozonation (pre and post), and chemical pump**,** inlet valve (motor valve), flocculation basin valves (pneumatic valve), sedimentation basin valves (pneumatic valve), sand filter valves (pneumatic valve).
2) WTP basin capacities (volume and area) of inlet chamber, ozonation chambers, the sedimentation basins and flocculation basins were confirmed.
3) Water level profile was confirmed.
4) Flow meters were additionally installed by the Water Department to measure at the WTP to confirm the raw water supply volume.
5) Manhole cover packing of ozone chamber was to be attached.
6) Ozone sensor and ozone alarm were to be installed as the ozone is toxic.
7) Chemical storage room was removed to avoid a lot of soil work.
8) Layout of the chemical dosage machine was changed to utilize the vacant space.
9) Position of the compressor was fixed.
10) One blower compressor for pneumatic valve was added as a spare.
11) Recalculation for the requirements of the compressors, blowers and pneumatic valves was done.

(2) Three Agreements (On-Lending, Implementation and Water Usage Agreement)

The SAPI Consultant assisted PEHZ in making these Agreements (refer to Chapter 4. “Noteworthy Activities”).

(3) Construction Supervision

Rehabilitation work was carried out under daily operation of the WTP without stoppage of water supply as same as Probistip WTP construction.

The rehabilitation work was suspended from January 2013 to September 2013, as the disbursement of the Slovenian Fund was not available.

(4) Commissioning Test

Before the commissioning test, cleaning was required, as a lot of soil had settled in the transmission pipeline. Some parts of the pipeline are commonly used to supply raw water to Sveti Nikole WTP, which started operation in 2011, so soil had accumulated in the pipeline since 2011. At the beginning of the commissioning test, turbid water with levels of more than 1000 NTU was discharged in the Stip WTP as shown in Figure 3-7.

Source: SAPI Consultant

Figure 3-7 High Turbidity Inlet Water at the Beginning of the Commissioning Test

Before the commissioning test, the SAPI Consultant requested that PEHZ and the Stip Waterworks Department clean the pipeline, but it was not carried out completely as the river water level was too high to discharge water from the intermediate drainage valve. Cleaning the pipeline by discharging water from the WTP was effective, but it caused soil erosion downstream of the WTP, which in turn, affected the wheat fields. The stream of the WTP drainage and the agriculture area are shown in Figures 3-8 and 3-9.

The pipeline was eventually cleaned step-by-step by discharging water from the WTP and discharging the intermediate drainage valves. The coordination was carried out under the SAPI Consultant.

Source: SAPI Consultant

Figure 3-8 Soil Erosion by Discharging Water

Source: SAPI Consultant

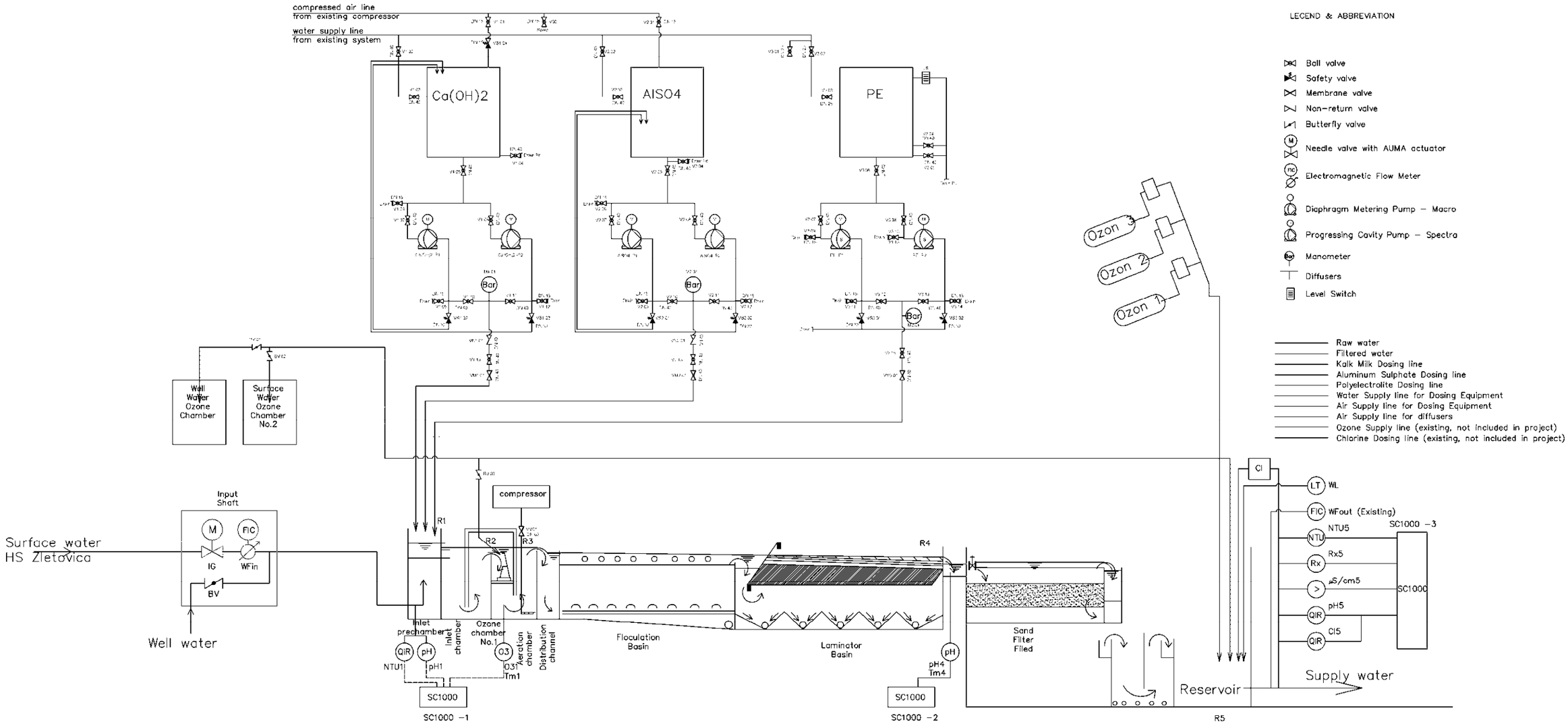
Figure 3-9 Landscape Downstream of the WTP Drainage

During the commissioning test, a jar test was done to determine the adequate chemical dosage rate such as coagulant and polyelectrolytes. The jar test is shown in Figure 3-10.

Source: SAPI Consultant

Figure 3-10 Jar Test to Identify the Chemical Dosage Rate

A system flow diagram, which was prepared as As-built Drawing, is attached below (Figure 3-11). The drawing was updated by the SAPI Consultant.



Source: SAPI Consultant based on results of data collection

Figure 3-11 System Flow Diagram of Stip WTP

(5) Assistance on Supervising Construction of Stip WTP by PEHZ

The SAPI Consultant called the municipality, the Waterworks Department and PEHZ to monthly meetings and discussed the quality, the process and the problems of the construction.

Regarding the supervision of rehabilitation of the existing water tank and roofing construction, the SAPI Consultant followed the same methods as Probistip.

Regarding the supervision of water treatment facilities, the SAPI Consultant again followed the same methods as Probistip.

The SAPI Consultant certified the progress payment to the contractor for the Yen Loan portion by January 2013, and for the municipal budget, including the Slovenian Fund, after that.

(6) Change of Budget and Design

Since a Variation Order was planned under the Yen Loan for the WTP construction using the Yen Loan Project budget, the SAPI Consultant verified the contractor's experience with WTPs in Slovenia, and approved them as the contractor for the Yen Loan Project. The Yen Loan Project cost was determined by the SAPI Consultant based on the estimation of the local consultant of Stip municipality. The construction design was also made based on the local consultant drawings that were reviewed by the SAPI Consultant.

(7) Local Election in Macedonia

The SAPI Consultant explained to the new mayor the background of the rehabilitation of the WTP, the progress of the three Agreements, and the necessity for a contract for execution of the Slovenian Fund portion, and obtained his approval and signature.

(8) Reformation of the Cabinet in Slovenia

CMSR stated that they were not able to take any actions until the Minister of Finance in Slovenian Government was named. Reformation of the cabinet of Slovenia was completed in March 2013, and the contract for the Slovenian Fund was concluded in May 2013.

(9) Approval by the Secretariat for European Affairs of the Slovenian Fund Agreement

The SAPI Consultant requested that the MAFWE and the mayor expedite the agreement and this was recognized in July 2013.

(10) Additional Repair Work

In cooperation with the design company contracted by the municipality, the SAPI Consultant studied the necessity of further repairs, and made amendments to the contract with the contractor in December 2013 after obtaining the municipality's supplementary budget.

(11) Re-washing of the Transmission Pipeline

Since the transmission pipeline was operated by PEHZ, coordination with the Waterworks Department of Stip municipality was needed for re-washing. Because the Waterworks Department of Stip municipality also had preparation activities that they had to undertake, the SAPI Consultant coordinated their schedule for preparation to secure the washing operation, and conducted a performance inspection of the WTP.

3.4 CP Training in Japan

JICA organized a training course for MAFWE and related personnel regarding water supply organization, institution, water treatment systems and hydro-power generating technology in Japan from 23 June 2012 to 1 July 2012.

Seven trainees were selected from the related authorities in Macedonia that were involved with the water supply business in the Yen Loan Project as follows:

1) Director of Administration for Water Economy, MAFWE
2) President of the Board of PEHZ, MAFWE
3) Director of PEHZ, MAFWE
4) Mayor of the Municipality of Probistip
5) Mayor of the Municipality of Stip
6) Director of the Public Enterprise of the Municipality of Probistip
7) Director of the Public Enterprise of the Municipality of Stip

The SAPI Consultant participated as the coordinator to assist the training.

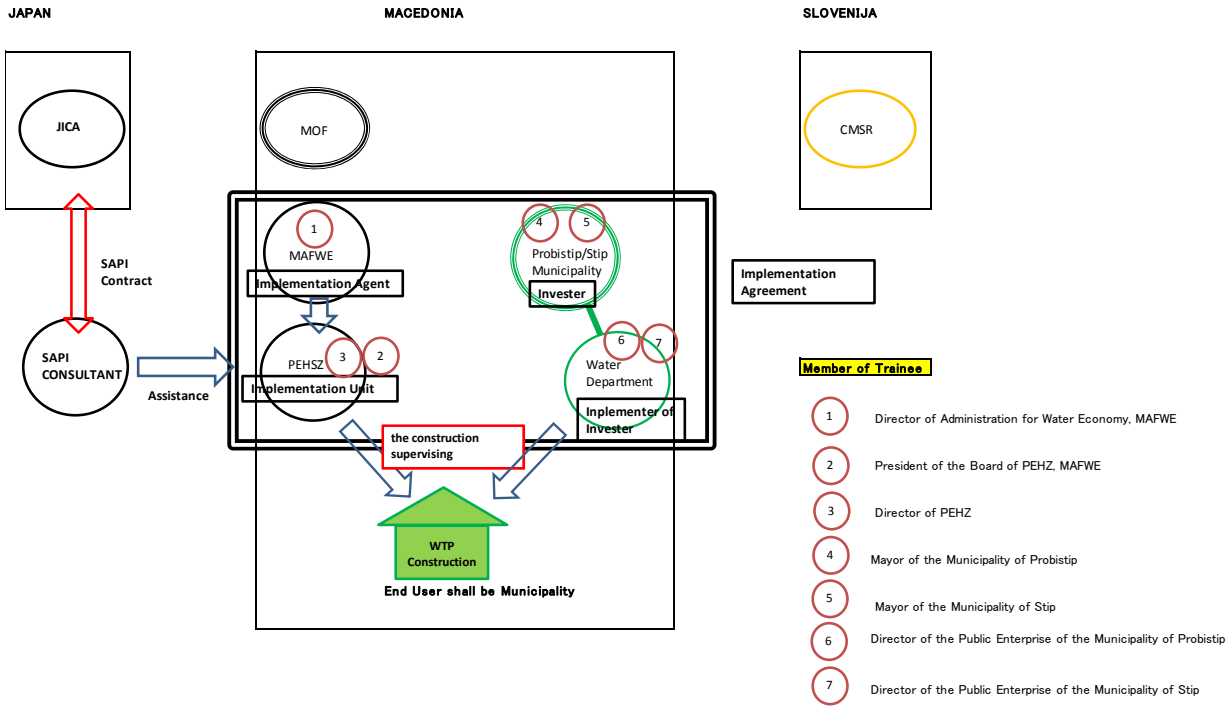


Figure 3-12 Attendance to CP Training in Japan

Organizations in Japan that are responsible for supplying public water were selected for the trainees to visit such as:

1) Kitachiba Water Supply Authority that handles all operations, raw water intake, water treatment, and water supply.
2) Seo WTP operating a UF method, which system is the same as the Probistip WTP.
3) Kawai WTP operating a sludge bracket system, which system is the same as the Stip WTP.
4) Arima WTP that have sludge drying beds which is simple method to treat the sludge generated at the WTP
5) Kawai WTP and Arima WTP that are operating mini hydro plants along with their WTP operation.
6) Shiroyama power plant and Aikawa power plant, which introduced new generating technology in Japan.

The SAPI Consultant also had a lecture to the trainees on Non-Revenue Water (NRW) measure which includes reducing leakage, during the training because this is currently a serious issue in Macedonia.

By studying the consistent managerial system from raw water to tap water supply service in Japan, the trainees from the different government offices and those involved in the water business understood the necessity for the Implementation Agreement for the construction supervision, and the Water Usage Agreement for management and sales contracts.

The training plan and schedule are attached. *(Attachment 24)*

4. Noteworthy Activities

4.1 Three Agreements

Before initiating the contract procedures of Probistip and Stip WTP construction and rehabilitation works, the following three Agreements were required.

(1) On-Lending Agreement

The final user of the WTP shall be the municipality. However, they are not a part of the MOF, which is the borrower of the Yen Loan, so an On-Lending Agreement between the municipality and the MOF was required in order for the municipality to use the Yen Loan Project budget.

In consideration of the conditions of the L/A between the MOF and JICA, the SAPI Consultant estimated the income and expenditure of the WTP operation, and proposed the terms of borrowing and repayment to Probistip / Stip municipalities for the On-Lending Agreement between Probistip / Stip municipality and the MOF.

It took about 2 months additionally to define the amount of the domestic loan according to the scale of the municipality, which needed several examinations such as trial calculations of F/S of WTP operation, the reimbursement plan, interest, and others.

The On-Lending Agreement between the MOF and the Public Enterprise of the Municipality of Probistip was signed on 9 February 2012 under the following terms and conditions:

- Amount of 49,000,000 MKD (1EUR= 61.5MKD=102.0Yen)
- Interest of 1.5% *(Attachment 7)*

The On-Lending Agreement between the MOF and the Municipality of Stip was made on 26 February 2012 under the following terms and conditions:

- Amount of 28,900,000 MKD (1EUR= 61.5MKD=109.2Yen)
- Interest of 1.5% *(Attachment 8)*

(2) Implementation Agreement

Regarding the construction of the WTP, the responsibilities and duties should be determined for each parties, MAFWE, PEHZ, the Municipalities and the Waterworks Departments of Probistip and Stip based on the relationships of each with the others. In Macedonia, the raw water supplier and the tap water supplier are separate and under different ministries; thus, designating which organization should handle the construction

using the loan fund was complicated and took about three months to be concluded. The SAPI Consultant had discussions with the following four parties and suggested how the WTP construction and rehabilitation should be carried out under the organization of a) PEHZ as Implementation Unit, b) MAFWE as Implementation Agency, c) Probistip and Stip municipalities as Investors and d) the Waterworks Departments of Probistip and Stip municipalities as Implementers of the investment, with the condition that the SAPI Consultant would assist with the construction supervision.

The Implementation Agreement between MAFWE, PEHZ, the Municipality of Probistip and the Waterworks Department of the Municipality of Probistip was made on 18 October 2011 under the following terms and conditions:

- Municipality of Probistip as the Client,
- Public Enterprise of the Municipality of Probistip as the Operator,
- Administration for Water Economy under MAFWE as the Implementation Agency,
- PEHZ is the Implementation Unit. *(Attachment 4)*

The Implementation Agreement between MAFWE, PEHZ, the Municipality of Stip and the Waterworks Department of the Municipality of Stip was made on 28 March 2012 under the following terms and conditions:

- Municipality of Stip as the Client,
- Public Enterprise of the Municipality of Stip as the Operator,
- Administration for Water Economy under MAFWE as the Implementation Agency,
- PEHZ as the Implementation Unit. *(Attachment 5)*

(3) Water Usage Agreement

Probistip and Stip municipalities did not agree to the water price charged by MAFWE so further discussion and agreement were required.

The SAPI Consultant estimated the incomes and expenditures of the Waterworks Department and PEHZ, and asked them to reach common ground. Moreover, the SAPI Consultant proposed how to handle the raw water including turbidity management at the intake gate and the end point of the transmission pipeline, and they decided to cooperate regarding management.

The Water Usage Agreement between PEHZ and the Municipality of Probistip was made on 20 February 2012 under the following terms and conditions:

PEHZ shall provide raw water from the Zletovica River to Probistip WTP under the following terms and conditions:

- 1st year: 3 MKD/m^3
- From 1 January 2014: 4 MKD/m^3, (1EUR= 61.5MKD=144.8Yen)
- From 1 January 2016: the charge shall be raised by 1 MKD/m^3 every year.

(Attachment 9)

The Water Usage Agreement between PEHZ and the Municipality of Stip was made on 20 February 2012 under the following terms and conditions:

PEHZ shall provide raw water from the Zletovica River to Stip WTP under the following terms and conditions:

- 1st year: 3 MKD/m^3
- From 1 January 2014: 4 MKD/m^3, (1EUR= 61.5MKD=144.8Yen)
- From 1 January 2016: the charge shall be raised by 1 MKD/m^3 every year.

(Attachment 17)

Price of tap water on Probistip and Stip municipality is 29MKD/m3, (1Euro= 61.5MKD=144.8Yen).

4.2 Probistip WTP

(1) VO Procedure

The Municipality of Probistip decided to issue a Valuation Order (VO) on 5 March 2012 due to time constraints considering the remaining L/A period in order to avoid for tendering process, which take about three months additionally, and finally all the stakeholders agreed on the implementation procedure of VO.

(2) Evaluation of Offer

There were two contractors, the Package 2 Contractor and the Package 4 Contractor, available for applying the VO. The Package 2 Contractor delayed their original works so that they should concentrate on the completion. Therefore, the Package 4 Contractor was selected due to availability.

The SAPI Consultant, along with PEHZ and the Waterworks Department of the Municipality of Probistip studied their offer issued on 29 April 2012. The SAPI Consultant compared all offers and issued an evaluation report to PEHZ on 7 May 2012. On 17 May 2012, the SAPI Consultant, along with PEHZ and the Probistip mayor, inspected two WTPs in Slovenia on which their subcontractor in charge of the water treatment facilities

had worked because no UF methods had been installed or operated in Macedonia before and it was necessary to verify the capability of the contractor in that field. *(Attachment 14, 16)*

(3) Slovenian Fund and Municipality Fund

A Slovenian Fund agreement was signed between CMSR and the Municipality of Probistip. The construction contract fund composed of the Yen Loan 63% (equivalent to Yen 93,480,000 as shown in Table 2-1), the Slovenian Fund 34% (Yen 51,110,000) and the Municipality of Probistip fund 3% (Yen 4,472,000). The SAPI Consultant, with PEHZ and the Probistip mayor, visited CMSR on 18 May 2012 to explain the supervising system, contract conditions and payment conditions of the Yen Loan Project. Consequently, the Slovenian Fund followed the same conditions as the Yen Loan Project. *(Attachment 20)*

4.3 Stip WTP

(1) VO Procedure

PHEZ and the Municipality of Stip decided to implement a VO to select a contractor on 19 July 2011 considering the remaining period of the Yen Loan as same as Probistip.

(2) Evaluation of Offer

Two companies were available as contractors, Package 2 Contractor and Package 4 Contractor by VO procedure under the Yen Loan Project. The Package 2 Contractor delayed their original works so that they should concentrate on completion. Therefore, the Package 4 Contractor was selected.

The SAPI Consultant, with PEHZ and the Waterworks Department of the Municipality of Stip, studied their offer issued on 21 July 2012. The SAPI Consultant issued the evaluation report to PEHZ on 25 July 2012. *(Attachment 14)*

(3) Slovenian Fund and Municipality Fund

The Slovenian Fund agreement between Slovenia and the Municipality of Stip came as promised. The construction contract fund was composed of the Yen Loan 50% (equivalent to Yen 46,740,000 as shown in Table 2-2), the Slovenian Fund 47% (Yen 44,231,000) and the Municipality of Stip fund 3% (Yen 3,250,000).

The Slovenian Fund agreement between Slovenia and the Municipality of Stip was entered into on 27 May 2013. *(Attachment 32)*

Chronology of the Project is shown in Table 4-1.

Table 4-1 Chronology of the Project

Year	Month	Day	Whole Project	Probistip	Stip
2003	11		**Yen Loan Agreement**		
2011	4		MOF requested JICA for WTP		
	7	19			VO was selected
	8		SAPI Project was signed		
	9		Submission of Inception Report		
	10	18		Implementation Agreement	
2012	2	9		On-Lending Agreement	
	2	20		Water Usage Agreement	
	2	20			Water Usage Agreement
	2	26			On-Lending Agreement
	3	5		VO was selected	
	3	28			Implementation Agreement
	4	26		UF method was selected	
	5	11		**Construction Contract**	
	5	18		Slovenia Fund Contract	
	6		Training in Japan		
	7	28			**Construction Contract**
	9		Submission of Interim Report		
	12	10		**TOC**	
2013	1		**Yen Loan closed**		
	3		Mayor Election		
	3		Slovenia Gov. cabinetmaking		
	5	27			Slovenia Fund Contract
	9				Slovenia Fund was approved.
2014	6	30			**TOC**
	9	22	Submission of Final Report		

Source: SAPI Consultant

5. Output and Conclusion

5.1 Items Assisted by SAPI Project

WTPs of Probistip and Stip were constructed and rehabilitated with the Yen Loan Project fund, the Slovenian Fund and the budget allocated by the two municipalities (Probistip and Stip) in addition to the surplus of the SAPI Project covering the WTP construction and rehabilitation supervision.

Specifications of the completed facilities are shown in Table 5-1.

Table 5-1 Outline of the Supported WTP

Item	Probistip WTP	Stip WTP
Water Treatment System	UF Membrane	Sludge blanket+ rapid sand filter
Population to be supplied	16,000	47,200
Design capacity	6,480 m^3/day (=75 L/sec)	43,200 m^3/day (=500 L/sec)
Water Source	Intake 1 along Zletovica River downstream of Knezevo Dam	Intake 3 along Zletovica River downstream of Knezevo Dam
Note	New Construction	Rehabilitation

Source: SAPI Consultant

Performance inspections were done on 9 December 2013 at Probistip WTP and on 29 June 2014 at Stip WTP.

IT was confirmed the water quality in turbidity was less than 1.0 in NTU, which satisfied the Macedonian Standards. Probistip WTP was completed on 10 December 2012, and started operations on 1 April 2013. Stip WTP was completed on 30 June 2014, and started operations on 1 July 2014.

5.2 Impacts of the Project

(1) Before the Project

Water supply conditions before Probistip / Stip WTP construction and rehabilitation are summarized below.

1) Probistip

Water source: Water pumped up from shallow wells near the Zletovica River to the WTP

Treatment method: Chlorination only

Operation: Water production capacity was frequently insufficient in the summer season. Water supply was often suspended due to failures of old pumps. Because water was simply disinfected, there were some

problems including turbid water after rain. As it was a mining town, there was a strong concern about water quality among local residents over water intake from areas near the town.

2) Stip

Water source: Water pumped up from shallow wells near the Bregalnica River that runs near the city

Treatment method:
- Groundwater line was operating (oxidation + pre-ozonation + rapid sand filtration + chlorination + post-ozonation)
- Surface water line was not operating (Sedimentation + Zonation + Flocculation + rapid sand filtration + post-ozonation + chlorination)

Operation: The water supply relied on groundwater which needs pump operation and this increased operation cost.

(2) After the Project

Water supply conditions after Probistip / Stip WTP construction and rehabilitation are summarized below.

The WTP completion enabled the use of the Knezevo Dam and transmission pipelines to the two cities constructed under Packages 2 and 3 of the Yen Loan Project to ensure a stable supply of quality drinking water to them. In addition, electric power is not needed, as water will be distributed with the force of gravity from the upstream region of the Zletovica River. Although the WTP has been completed, it is necessary to maintain and operate the groundwater pumping systems from shallow wells installed near the local river for emergency use when river water quality is high in turbidity.

In addition, the UF treatment system typically requires large amounts of electric power to generate 30m water pressure (equivalent to 0.3 MPa) to filter raw water with a UF method. However, in the Probistip WTP, the required water pressure for the UF treatment system was achieved by using gravity to send raw water directly from upstream to the WTP. Therefore, power is not necessary for the filtering. The operation cost including electricity consumption of the WTP was lower than the previous system that involved a pump drawing water from a well. After starting operation of the WTP in January 2013, the citizens have been able to drink tap water directly with comfort and safety, and receive it in the dry season without any interruptions.

The raw water price was 4 MKD/m^3 in 2014 and 5 MKD in 2016 as decided in the Water Usage Agreement.

5.3 Future Challenges

The completion of the WTP construction and rehabilitation enabled the effective use of stable water resources supplied from Knezevo Dam constructed under the Yen Loan Project as well as transmission pipelines to the two cities. However, the transmission pipelines constructed to the remaining two cities (Lozovo and Karbinci) are yet to be used and the Macedonian government is expected to make independent efforts to construct the WTPs.

As both Probistip and Stip WTPs have started to use raw water delivered by gravity from intakes along the Zletoviza River, the quantity has become stable, as well as the quality has become clean and safe.

Furthermore, both municipalities water supply conditions have improved their receiving of stable water quantities, as well as clean and safe water, which have led to healthy financial conditions and economical water supply operations.

The water charge needs to be set for effective management considering the impact of the future raw water price rise and future rehabilitation (water pipes and WTPs) of old facilities, which might be often ignored.

Although it is not within the scope of the Project, PEHZ has continuously monitored water leakage and the behavior of Knezevo Dam after its completion in January 2012. The stored water reached its limit in May 2014 but no significant leakage or behaviour was observed. However, it is recommended to be monitored continuously over the long term.

Source: SAPI Consultant

Figure 5-1 Upper Stream (spillway)

Source: SAPI Consultant

Figure 5-2 Lower Stream (spillway)

The purpose of the successfully completed Yen Loan Project was the improvement of water supply conditions to make use the water from the constructed dam reservoir. The basic design, F/S including economic and financial analysis and environment impact study on the irrigation project and hydropower generation project are currently underway with support from the EIB (European Investment Bank). The future implementation plan and schedule were not yet determined.

Attachments

List of Attachments

Page

Attachment 1: Request Letter from MOF to JICA for Use of Unused Balance A-1
Attachment 2: Approval Letter from JICA to MOF for Financing for MOF Proposal A-7
Attachment 3: Request letter from MOF to JICA for Assistance in Supervising A-8
Attachment 4: Implementation Agreement for Construction of Probistip WTP A-10
Attachment 5: Implementation Agreement for Rehabilitation of Stip WTP A-18
Attachment 6: Operation and Maintenance Cost Estimated by the SAPI Consultant A-26
Attachment 7: On-Lending Agreement: Probistip Municipality A-28
Attachment 8: On-Lending Agreement: Stip Municipality A-34
Attachment 9: Water Usage Agreement: Probistip Municipality..... A-40
Attachment 10: Inception Report..... A-46
Attachment 11: Decision regarding UF Method by Probistip Municipality..... A-59
Attachment 12: Technical Specifications for Probistip WTP A-61
Attachment 13: Test Procedures for Probistip WTP..... A-83
Attachment 14: Offers and Evaluation A-89
Attachment 15: Technical Specifications for Stip WTP A-113
Attachment 16: Determination of the Capability of the Contractor A-128
Attachment 17: Water Usage Agreement: Stip Municipality A-129
Attachment 18: Construction Contracts for Probistip WTP (Original) A-135
Attachment 19: Construction Contracts for Probistip WTP (Amendment)..... A-145
Attachment 20: Grant Agreement for Construction of Probistip WTP..... A-159
Attachment 21: Commencement of the work on Probistip WTP A-164
Attachment 22: Training in Japan..... A-166
Attachment 23: Advance Payment Security, Performance Security and Construction Insurance for Construction of Probistip WTP A-171
Attachment 24: Reports of Manager Training in Japan..... A-179
Attachment 25: Rehabilitation Contracts for Stip WTP (Original) A-186
Attachment 26: Commencement of the work on Stip WTP A-199
Attachment 27: Advance Payment Security, Performance Security and Construction Insurance For Rehabilitation of Stip WTP A-200
Attachment 28: Interim Report..... A-208
Attachment 29: Rehabilitation Contracts for Stip WTP (Amendment No. 1) A-221
Attachment 30: Partial Taking Over Certificate of Probistip WTP A-224
Attachment 31: Final Taking Over Certificate of Probistip WTP..... A-226

Attachment 32: Grant Agreement for Rehabilitation of Stip WTP A-228
Attachment 33: Rehabilitation Contracts for Stip WTP (Amendment No. 2) A-241
Attachment 34: Rehabilitation Contracts for Stip WTP (Amendment No. 3) A-244
Attachment 35: Test Procedures for Stip WTP A-247
Attachment 36: Partial Taking Over Certificate of Stip WTP A-254
Attachment 37: Correspondence A-256
Attachment 38: Minutes of Meetings (Probistip WTP) A-379
Attachment 39: Minutes of Meetings (Stip WTP) A-403
Attachment 40: Profile and Photo of Probistip WTP A-449
Attachment 41: Profile and Photo of Stip WTP A-451

Republic of Macedonia
Ministry of finance

To: JAPAN INTERNATIONAL COOPERATION AGENCY
Shinjuku Maynds Tower Bldg.,
11 F 2-1-1, Yoyogi, Shibuya-ku
Tokyo 151-8558, Japan

Attn: Mr. Junichi Yamada, Director General
Middle East and Europe Department

Subject: Proposal for usage of unused balance of the Loan for Zletovica Basin Water Utilization Improvement Project (L/A No. MAC-P1)

No. 14 - 1254/1
Skopje 1-04 2011 year

Government of Republic of Macedonia
Ministry of Finance
EU and International Finance Department
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Dear Mr. Yamada,

With reference with your letter dated 9th February 2011, please find enclosed our proposal for the usage of unused balance of the Loan, in the amount of JPY 391.942.702, for Zletovica Basin Water Utilization Improvement Project (L/A No. MAC-P1).

Government of the Republic of Macedonia, at its session held on 22nd March 2011, adopted Information on activities expected to be financed from the unused balance of the Loan and to be completed within the disbursement period. Ministry of Agriculture Forestry and Water Economy (MAFWE), as Executing Agency, and PE HS Zletovica, as Project Implementation Unit, proposed the list of activities. All activities would be implemented by 26th January 2013.

After receiving your consent to our proposal, MAFWE will take all necessary activities for extending and amending the Contract of Consulting Service, which expired on 26th January 2011.

We would highly appreciate if you could consider our request, since Project completion is of great importance for the Government of the Republic of Macedonia.

Yours sincerely,

VICE PRIME MINISTER AND
MINISTER OF FINANCE
Zoran Stavreski

Republic of Macedonia
Ministry of finance

List of activities planned to be financed with the unused balance of the Loan for Zletovica Basin Water Utilization Improvement Project (L/A No. MAC-P1)

	Proposed activities to be executed with the unused balance of the Loan	JPY
1	Construction of gallery for protection of landslide - 14 km from the access road to "Knezevo" dam	25,036,281
2	Rehabilitation of landslides along access road to "Knezevo" dam - Completion of work at 13+000 km - Rehabilitation of new landslide at 13+200 km	14,022,000
3	Mechanization and maintenance equipment for the facilities of HS "Zletovica" Phase I	13,437,750
4	Construction of protection zones and sedimentation areas as requirements for delivery of quality raw water for the water treatment plants	17,527,500
5	WTP Probistip	93,480,000
6	WTP Stip	46,740,000
7	WTP Karbinci	11,743,425
8	Asphalt paving of access roads: -access road to Kuceska Intake and around the reservoir	16,809,790
9	Landscaping of "Knezevo" dam and placing elastic guard rail and protective wire net around the reservoir	13,300,000
10	Necessary geodetic equipment for geodetic survey -LEICA DNA 03 digital level with 2 leveling staffs - base (3 pieces) - measuring tape 50 meters - geodetic data processing software	1,285,350
11	Consulting services-JPY portion	28,628,356
12	Consulting services-MKD portion	9,932,250
13	Interest during grace period and extended period of 24 months	100,000,000
	TOTAL	391,942,702

Detailed description of planned items is presented below:

1. Construction of gallery for protection of landslide at 14km of the access road to "Knezevo" dam

For the purpose of protection against landslide and safety of the access road to the "Knezevo" dam, it is necessary to build 80-meter long gallery.

As regards this landslide, it was instigated with the construction of water supply pipeline for the Municipality of Kratovo 20 years ago, however, it has been instigated again with the construction of the access road to the Knezevo dam. Despite the number of technical solutions undertaken, which proved to be ineffective so far, and the consistent surveillance of the site, it has been concluded that the sliding of the material continues in huge quantities. Since the land sliding is located in harsh mountainous terrain and in the narrow canyon on Zletovica River, and it is located above the existing supply pipeline, there are no suitable conditions for its dislocation.

Experts proposed different technical solutions for construction of tunnel, retaining wall or gallery so as to resolve the issue of the land sliding. Since construction of tunnel and retaining wall requires deep foundation to rock material, which is not feasible under the present conditions because it might damage the existing pipeline, construction of gallery is the most appropriate and economically best and permanent solution not requiring deep foundation. At the same time, it will serve as pillar to stabilize the landslide, thus providing stability and constant usage of the access road to the Knezevo dam and the related facilities, as well as protection of the water supply pipeline for the Municipality of Kratovo.

Therefore, technical documentation has been prepared, stating that the most appropriate solution is construction of 80-meter long gallery on 14km from the access road to the Knezevo dam, ensuring safe access to the Knezevo dam and protection of the Kratovo pipeline for regular water supply of the Municipality of Kratovo.

Required amount of funds is JPY 25,036,281.

2. Rehabilitation of landslides along Access Road to "Knezevo" dam

Since the access road to the Knezevo dam is built on mountainous terrain, land sliding is observed, which is instigated due to the bad weather condition in the past period. On-site circumstances show that land sliding occurs under the asphalt on the access road along which supply pipeline in the Municipality of Kratovo is located. Consequences are visible and half of the access road is damaged, and the conditions are deteriorating. Due to this, it is necessary to undertake the following activities:

- completion of landslide rehabilitation at 13+000km
- preparation of technical documentation and rehabilitation of new landslide at 13+200km

Required amount of funds is JPY 14,022,000.

3. Mechanization and maintenance equipment for the facilities of HS "Zletovica" Phase I

For the purpose of smooth operations of the "Knezevo" dam, it is necessary to procure mechanization both for maintenance of the access road along 20km, constructed on mountainous terrain, where serious problems with maintenance occur during the winter season, and for maintenance of the intakes and the water supply pipelines along 100km

for the purpose of regular water supply for the municipalities. Following mechanization should be procured:

- Universal excavator - 74.2KW-101ks
- Dump track - 12-14m^3 capacity
- On-site power aggregate - 2-4 kv
- Vacuum tank
- Rowing boat

Required amount of funds is JPY 13,437,750.

4. Construction of protection zones and sedimentation areas as requirements for delivery of quality raw water for the water treatment plants

Due to the size of the flowing area and the nature of the surface water produce, huge quantities of suspended, dissolved and alluvium material are deposited into the sedimentation basins from where raw water runs into the water treatment plants. By determining the protection zones, quality drinking water to the final users is ensured, since no disorder of human nature (construction, cutting trees, etc.) is allowed in this zone. Raw water supplied from the intakes is with frequent see-saw, ranging between 1 (first) to 4 (fourth) class. Small correction of the intakes and partial sedimentation of the raw water will allow supply of water with sound quality.

Required amount of funds is JPY 17,527,500.

5. WTP Probistip

Required amount of funds from the YEN Loan is JPY 93,480,000.

6. WTP Stip

Required amount of funds from the YEN Loan is JPY 46,740,000.

7. WTP Karbinci

Required amount of funds from the YEN Loan is JPY 11,743,425.

8. Asphalt paving of access roads

The access roads will provide for erosion prevention and filling of the accumulation with material which, in years, decreases the volume of the accumulation. At the same time, these access roads will be also used for regular monitoring and smooth operations of the "Knezevo" dam, while asphalt paving of the access road to Kuceska Intake will ensure for better connection with the intake for the purpose of its maintenance, therefore, the following access road should be paved with asphalt:

- access road to Kuceska Intake and around the reservoir.

Required amount of funds is JPY 16,809,790.

9. Landscaping of "Knezevo" dam and placing elastic guard rail and protective wire net around the reservoir

During construction of "Knezevo" dam and related facilities, area in the immediate vicinity of the dam has been damaged, since it was used for the construction machinery, installation of asphalt and batching plants, laboratory, etc. Therefore, rehabilitation is

needed and we should prevent any pollution of the water and restore the water-wildlife in the ecosystem. The landscape also includes construction of particular facilities as: toilets, access to toilets, lightening with candelabras, park benches, taps, etc.

According to the HS Zletovica Environmental Impact Assessment Study and pursuant to the existing legal regulations envisaging protection zones for protection of drinking water from bacteriological, physical-chemical, radiological and other type of contamination which may prejudice to the quality of drinking water, therefore installation of elastic guard rail and protective wire net for fencing of reservoir is required.

Required amount of funds is JPY 13,300,000.

10. Necessary geodetic equipment for geodetic survey

In order to monitor the occultation at "Knezevo" dam, which is also an obligation stipulated by law, it is necessary to provide proper geodetic equipment.

- LEICA DNA 03 digital level with 2 leveling staffs
- base (3 pieces)
- measuring tape 50 meters
- geodetic data processing software for monitoring the dam occultation.

Activities will commence in April 2011. Required amount of funds is JPY 1,285,350.

11. Consulting services YEN portion

By having JBIC approved the loan for the "Zletovica" project and to the end of its successful implementation, consulting services are contracted with foreign experts.

Thus, JPY 28,628,356 will be needed in 2011 for the purpose of complete project implementation from financial point of view.

12. Consulting services MKD portion

By having JBIC approved the loan for the "Zletovica" project and to the end of its successful implementation, consulting services are also contracted with local experts.

Thus, JPY 9,932,250 will be needed in 2011 for the purpose of complete project implementation from financial point of view.

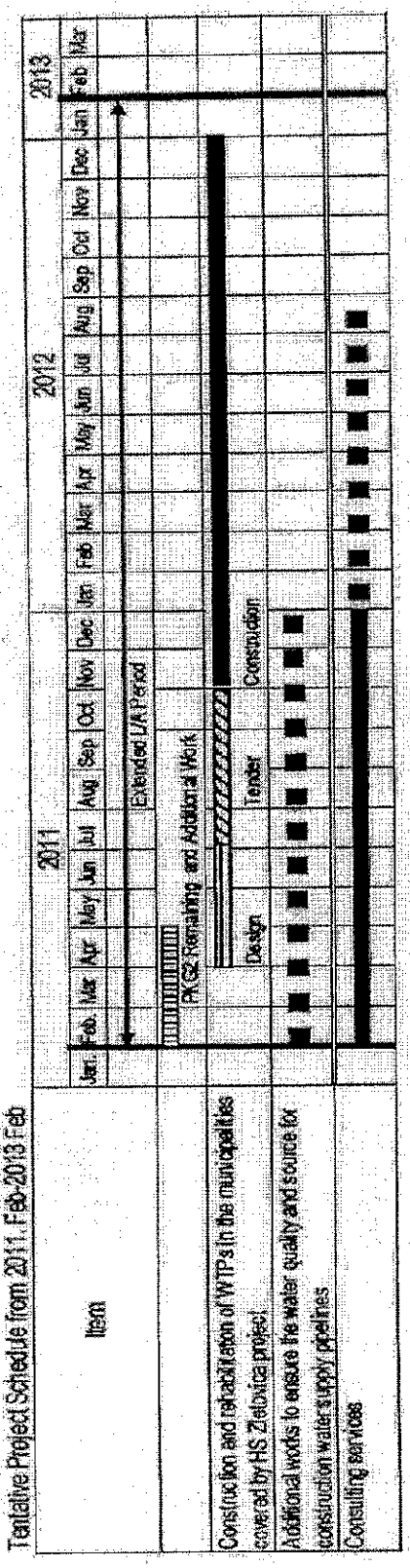
13. Interest during the grace period and extended period of 24 months

According to the Loan Agreement, Japanese Bank for International Cooperation – JBIC, charges itself an interest of 1.5% on the outstanding credit amount from the credit funds during the grace period, as well as for the extended period of 24 months, on 20.06 and 20.12 for the respective year. Such charges are capitalized in the project value.

Required amount of funds is JPY 100,000,000.

TOTAL: JPY 391,942,702

Republic of Macedonia
Ministry of finance



Japan International Cooperation Agency

Date: April25, 2011

Ref. No.: JICA (7R) 4 – 25001

H.E. Mr. Zoran Stavreski
Vice Prime Minister and Minister of Finance
Macedonia

Re.: Proposal for usage of unused balance of the Loan for Zletovica Basin Water Utilization Improvement Project (L/A No. MAC-P1)

Excellency,

With reference to our concurrence letter dated April 8, 2011 (Ref. No.: JICA (7R) 4-08002, as a reply to your letter dated April 1, 2011 (Ref No.14-12154/1)), and based on the result of the discussion with Mr. Hiromichi MURAOKA, Director of Europe Division, on April 20, 2011, we would like to hereby inform you that, we have no objection to finance on all activities on your proposal as long as those contribute to project objectives and effects which lead to adequate service delivery to your people that is the most important for the Project.

For the smooth implementation of the Project, I would like to ask you to make necessary amendment on Consulting Services as soon as possible.

I would very appreciate if you continue your effort to realize the project effects and the service to your people in timely and sustainable manner.

Sincerely yours,

Junichi Yamada
Director General
Middle East and Europe Department

CC:
- Mr. Metodija TOMESKI, Director of Water Economy Administration, MAFWE
- Mr. Stojan MILANOV, Manager, Hidrosystem Zletovica
- Mr. Satoru KUROSAWA, Chief Representative, JICA Balkan Office
- Ms. Kanako TERUI, JICA Skopje Office

Republic of Macedonia
Ministry of finance

To: JAPAN INTERNATIONAL COOPERATION AGENCY
Shinjuku Maynds Tower Bldg.
11 F 2-1-1, Yayogi, Shibuya-ku
Tokyo 151-8558, Japan

Attn: Mr. Junichi Yamada, Director General
Middle East and Europe Department

Subject: Zletovica Basin Water Utilization Improvement Project (L/A No. MAC-P1)

No. 14-23578/1

Skopje

Government of Republic of Macedonia
Ministry of Finance
PU and International Finance Department

Mito Hadzivasilev Jasmin bb,
1000 Skopje,
Republic of Macedonia
Tel.: ++ 389 2 3112 288
Fax.: ++ 389 2 3117 280
e-mail: finance@finance.gov.mk
Web site: www.finance.gov.mk

Dear Mr. Yamada,

With regard to Zletovica Basin Water Utilization Improvement Project (L/A No. MAC-P1), please be informed that municipality of Probistip and municipality of Stip agreed for the Government to on-lend them part of JICA loan for construction/reconstruction of water treatment plants (WTP).

In addition, Government of the Republic of Macedonia, Ministry of Finance and Ministry of Agriculture, Forestry and Water Economy (MAFWE) agree to on-lend part of the loan so as for the construction/reconstruction of WTP to be carried out.

Having in mind the above mentioned, we would like to point out that all relevant parties are strongly committed to the fastest possible implementation of the Project.

Therefore, following Agreements are to be concluded:

- On-lending Agreement between Ministry of Finance and municipality of Stip and Ministry of Finance and municipality of Probistip;
- Implementing Agreement for construction/reconstruction of WTP between MAFWE, Public Enterprise "Zletovica" and municipality of Stip and between MAFWE, Public Enterprise "Zletovica" and municipality of Probistip; and
- Agreement for using raw water between Public Enterprise "Zletovica" and municipality of Stip and between Public Enterprise "Zletovica" and municipality of Probistip. Those Agreements will be signed now, but will be applied after the construction/reconstruction of WTP.

Republic of Macedonia
Ministry of finance

After concluding the above-mentioned agreements, MAFWE and PCE IV Consultant have to conclude Amendment No.8 of Consulting Services for WTP. This Amendment covers the consultant services costs as regards: Design Documents (design criteria, topographic survey, geological survey, basic design, EIA and review of basic design) and Contract Documents (ToR, general conditions, technical specification, tender drawings and bill of quantity).

Amendment No.8 will not cover activities related to tender procedure and supervision of works. For the purpose of smooth implementation of the project, we need JICA assistance as regards tender and supervision activities.

Therefore, we are sending this request for Grant Assistance in order to complete all the necessary activities regarding the Zletovica Project.

We would highly appreciate if you could consider our request, since Project completion is of great importance for the Government of the Republic of Macedonia.

Yours sincerely,

VICE PRIME MINISTER AND
MINISTER OF FINANCE

Zoran Stavreski

Based on the Law on indebtedness of the Republic of Macedonia with a loan at the japan bank for international cooperation under Loan Agreement for implementation of the Zletovica water use improvement project (Official Gazette of RM no.72/03, 108/08 and 47/11), the Loan Agreement between the Government of Republic of Macedonia and Japan bank for international cooperation MAC-P1 dated 20.11.2003, the On-lending agreement concluded between the Ministry of finance and Municipality of Probistip and the conclusion of the Government of RM no.51-1980/1 dated 23.03.2011:

1. The Ministry of agriculture, forestry and water economy Skopje, represented by the Minister Ljupco Dimovski, hereinafter called Agency for implementation of the project,

2. The Public Enterprise Hydrosystem "Zletovica" Probistip, represented by the Director Stojan Milanov, hereinafter called Implementation Unit of the project and

3. Municipality of Probistip, represented by the Mayor Toni Tonevski, hereinafter called Investor of the project,

4. Public communal enterprise "Nikola Karev" from Probistip, represented by the Director Milan Terzik, hereinafter called as Implementer of the investment

concluded:

AGREEMENT

On implementation of the project for construction of water treatment plant for drinking water (filter station)

SUBJECT OF CONTRACT

Article 1

Subject of this agreement is fully implementation of the project for construction of water treatment plant for drinking water (filter station) in Municipality of Probistip in order to provide the drinking water from Hydrosystem "Zletovica" to the final consumers-citizens of Probistip municipality.

Contractual parties have agreed the project for construction of water treatment plant (filter station) and consulting services for this project to be financed by the sub-loan from the Ministry of finance in amount of 49.000.000,00 MKD as a part of the Loan of the Government of RM from Japan bank for international cooperation.

PROCUREMENT OF CONTRACTOR

Article 2

The procurement of the contractor of the works on implementation of the project for construction of water treatment plant for drinking water (filter station) in Municipality of Probistip, and which will be financed by the recourses provided by the sub-loan (on-lending) will be done by the Ministry of agriculture, forestry and water economy as Implementation Agency of the project which entitlement arises from the Agreement for implementation of the Zletovica water use improvement project according

to the Guidance of the Japan bank for international cooperation which are related to procurement of goods and services from October 1999 and which are adopted in the Original loan agreement between the Government of RM and the Japan bank for international cooperation, for realization of the Hydrosystem Zletovica Probistip MAC-P1 dated 20.11.2003.

The procedure of procurement of contractor of thee work shall be conducted by committee with 7 members and their deputies as follows Chairman and one member and their deputies shall be nominated by the Implementation Agency, two members and their deputies shall be nominated by the Implementation Unit and the Investor of the project and one member and his deputy shall nominate the Implementer of the investment.

The evaluation of the bids for procurement of contractor conducts the committee. The report of evaluation of bids is submitting to the Japan bank for international cooperation for concurrence.

The agreement with the selected contractor shall be signed by the Implementation Agency, Implementation Unit, Investor and Implementer of investment.

Article 3

The consulting services shall be done by the consultant selected by the Implementation Agency under Amendment 8 which shall regulate the rights and liabilities of the contractual parties, and the Investor agrees on signing of Amendment 8.

The consulting services will be financed from the funds of the sub-loan (on-lending).

CONSTRUCTION OF WATER TREATMENT PLANT FOR DRINKING WATER (FILTER STATION)

Article 4

The deadline for submission of the request for payment of implemented activities by the Implementation Agency to the Japan agency for international cooperation-JICA (former Japan bank for international cooperation) is 20.12.2012.

Article 5

The Investor is responsible for:

- To provide entire documentation (necessary consents and permissions) in accordance with the positive legal regulations for freely commencement of the construction of the filter station,
- Participate in the selection of contractor for implementation of the project,
- Prepares and submits monthly reports for the progress of the works to the Implementation Unit,
- Signs and seals agreement, interim and final certificates under project and request for payment to the Japan bank for international cooperation,
- Check the documentation for payment of costs (amounts) and submits it to the Implementation Unit due to further proceeding,
- Provides supervision of works on daily base,
- To conclude agreement with the other contractual parties for regulation of the rights and liabilities on the method of payment of taxes and expenses which arise from the Original loan agreement, as well as expenses of the Implementation Agency and Unit for implementation of the project.

The Implementer of investment is responsible for:

- Participate in the selection of contractor for implementation of the project,
- To provide funds in his budget for activities related to the project and which could not be financed by the loan (general administrative cost, taxes, customs, land acquisition, fees and other indirect costs),
- Conducts separate accounting for the project,
- Signs and seals agreement, interim and final certificates under project and request for payment to the Japan bank for international cooperation,
- Check the documentation for payment of costs (amounts) and submits it to the Implementation Unit due to further proceeding,
- Provides supervision of works on daily base,
- To provides funs in his budget for payment of VAT for the project,
- To organize technical inspection and technical acceptance of the completed project,
- After completion of the project, takes over for maintenance the structure water treatment plant.

The Implementation Agency is responsible for:

- Total supervision of the project,
- Forward of requests to the bank-agent for disbursement of the loan in accordance with the procedures for withdrawal of funds under the Loan agreement: procedure based on identified liabilities, procedure of cost compensation or procedure of transfer,
- Conducting of procedures of the agreement for regulation of the mutual obligations with the Central bank of RM and the Ministry of finance,
- Submission of information to the Government on progress of the project,
- To follow-up the project implementation through the report submitted by the Implementation Unit regularly,
- Conducts the procedure of selection of contractor of the works,
- Signs and seals agreement, interim and final certificates under project and request for payment to the Japan bank for international cooperation,
- Check the documentation for payment of costs (amounts) and forward it for further proceeding.

The Implementation Unit of the project is responsible for:

- Conduct supervision of works on Daily base,
- Signs and seals agreement, interim and final certificates under project and request for payment to the Japan bank for international cooperation,
- Check the documentation for payment of costs (amounts) and submits it to the Implementation Agency,
- Submission of notification to the Ministry of agriculture, forestry and water economy of the work progress based on the Reports by the Investor,
- Participate in the selection of contractor for implementation of the project,
- Follow-up the progress of implementation of the project,
- Signs the financial documents which are base for payment.

WAY OF PAYMENT

Article 6

The payment of the project realization shall be done under procedures in accordance with the Loan agreement for implementation of the Zletovica water use improvement project.

CONTRACT PERIOD

Article 7

This agreement shall come into effect on the day of signing by the authorized representatives of all contractual parties.

MISCELLANEOUS

Article 8

For other conditions not specified herein valid are adequate regulations of Republic of Macedonia.
In case of dispute, it will be settled by mutual consent.
In case of failure to reach any agreement, competent is the Primary court Skopje 1.

Article 9

This Agreement could be changed and amended by signing of Amendments under proposal of one of the contractual parties, submitted to prior consideration to the other parties.

Article 10

This Agreement is made in 8 (eight) identical copies, two for each party.

Investor
Municipality of Probistip
Mayor

Toni Tonevski

Implementation Agency
Ministry of agriculture, forestry and
Water economy
Minister

Ljupco Dimovski

Implementer of investment
PCE Nikola Karev Probistip
Director

Milan Terzik

Implementation Unit
PE Hydrosystem Zletovica
Director

Stojan Milanov

08-1448/1
18.10.11
ПРОБИШТИП

Јавно комунално претпријатие
"Никола Карев"
Бр. 03-439/1
18.10 2011 год.
Пробиштип

Врз основа на Законот за задолжување на Република Македонија со заем кај Јапонската банка за меѓународна соработка по Договорот за заем за реализација на проектот за подобрување на искористувањето на водите од басенот на реката Злетовица (Службен весник на РМ бр.72/03, 103/08 и 47/11), Договорот за заем помеѓу Владата на Република Македонија и Јапонската банка за меѓународна соработка МАС-Р1 од 20.11.2003 година, Договорот за под заем склучен помеѓу Министерството за финансии и Општина Пробиштип и заклучокот на Владата на РМ бр.51-1980/1 од 23.03.2011 година:

1.Министерството за земјоделство, шумарство и водостопанство Скопје претставувано од Министерот Љупчо Димовски во понатамошниот текст Агенција за имплементација на проектот,

2. Јавното Претпријатие Хидросистем "Злетовица" Пробиштип претставувано од Директорот Стојан Миланов, во понатамошниот текст Единица за имплементацња на проектот и

3. Општина Пробиштип застапувана од Градоначалникот Тони Тоневски, во понатамошниот текст Инвеститор на проектот,

4.Јавното комунално претпријатие "Никола Карев" од Пробиштип претставувано од Директорот Милан Терзиќ, во понатамошниот текст како реализатор на инвестицијата,

склучија:

РЕПУБЛИКА МАКЕДОНИЈА
МИНИСТЕРСТВО ЗА ЗЕМЈОДЕЛСТВО, ШУМАРСТВО И ВОДОСТОПАНСТВО
Бр. 02-11383/1
18.11 2011 год.
СКОПЈЕ

ДОГОВОР

За имплементација на проектот за изградба на станица за пречистување на вода за пиење (филтер станица)

Јавно претпријатие за извршување на водостопански дејности ХС "ЗЛЕТОВИЦА"
Бр. 0306-1600/2
18.11 2011 год.
Пробиштип

ПРЕДМЕТ НА ДОГОВОРОТ

Член 1

Предмет на овој договор е целосна имплементација на проектот за изградба на станица за пречистување на вода за пиење (филтер станица) во Општина Пробиштип со цел водата наменета за пиење од Хидросистемот "Злетовица" да дојде до крајните потрошувачи-граѓаните на општина Пробиштип.

Договорните страни се согласни проектот за изградба на станицата за пречистување на вода за пиење (филтер станица) и консултантски услуги за овој проект да се финансираат со средства од под-заемот од Министерството за финансии во износ од 49.000.000,00 денари како дел од заемот со кој Владата на РМ се задолжи кај Јапонската банка за меѓународна соработка.

НАБАВКА НА ИЗВЕДУВАЧ НА РАБОТИТЕ

Член 2

Набавката на изведувач на работите за реализација на проектот за изградба на станица за пречистување на вода за пиење (филтер станица) во Општина Пробиштип, а која ќе се финансира од средствата кои се обезбедени од под заемот ќе ја врши Министерството за земјоделство, шумарство и водостопанство како Агенција за имплементација на проектот која надлежност произлегува од Договорот за реализација на Проектот за подобрување на искористувањето на водите од басенот-слив на реката Злетовица според Упатствата од

Јапонската банка за меѓународна соработка кои се однесуваат на набавка на добра и услуги од октомври 1999 година а кои се прифатени во основниот договор за заем помеѓу Владата на РМ и Јапонската банка за меѓународна соработка, за реализација на хидросистемот Злетовица Пробиштип МАС-Р1 од 20.11.2003 година.

Постапката за набавка на изведувач на работите ќе ја спроведе комисија од 7 члена и нивни заменици и тоа Претседател и еден член и нивни заменици ќе делегира Агенцијата за имплементација, по двајца членови и нивни заменици ќе делегираат Единицата за имплементација и инвеститорот на проектот и еден член и негов заменик ќе делегира реализаторот на инвестицијата.

Евалуацијата на понудите за набавката на изведувач на работите го врши комисијата. Извештајот за евалуација на понудите се доставува на согласност до Јапонската банка за меѓународна соработка.

Договорот со избраниот изведувач го потпишува Агенцијата за имплементација, Единицата за имплементација, Инвеститорот и Реализаторот на инвестицијата.

Член 3

Консултантските услуги ќе ги врши консултант избран од страна на Агенцијата за имплементација со Анекс 8 со кој ќе бидат регулирани правата и обврските на договорните страни, а инвеститорот се согласува да се потпише Анексот 8.

Консултанските услуги ќе се финансираат со средства од под-заемот.

ИЗГРАДБА НА СТАНИЦА ЗА ПРЕЧИСТУВАЊЕ НА ВОДА ЗА ПИЕЊЕ (ФИЛТЕР СТАНИЦА)

Член 4

Краен рок за испраќање барање до Јапонската агенција за меѓународна соработка-ЈАЈКА (поранешна Јапонска банка за меѓународна соработка)за плаќање на реализирани активности од страна на Агенцијата за имплементација на проектот е 20.12.2012 година.

Член 5

Инвеститорот се обврзува:

- Да ја обезбеди целокупната документација(потребни одобренија и дозволи) согласно позитивните законски прописи за непречено отпочнување на изградбата на филтер станицата,
- Учествува во изборот на изведувач за реализација на проектот,
- Изготвување и доставување на месечни извештаи за текот на работите до Единицата за имплементација,
- Потпишува и заверува договор, времени и завршни ситуации по проектот и барање за исплата на средства кое се доставува до Јапонската банка за меѓународна соработка
- Врши преглед на документацијата за исплата на трошоци (средства) и ги доставува до Единицата за имплементација заради понатамошно постапување,
- Обезбедува дневен надзор над работите на објектот
- Да склучи договор со останатите договорни страни за регулирање на правата и обврските за начинот на плаќање на даноците и трошоците кои произлегуваат од основниот договор за заем, како и трошоците кои Агенцијата и Единицата за имплементација ги имаат за реализација на проектот.

Реализаторот на инвестицијата се обврзува:

- Учествува во изборот на изведувач за реализација на проектот,
- Да предвиди средства во својот буџет за активностите кои се поврзани со проектот а кои неможат да се финансираат од заемот (општи административни трошоци, даноци, царини, експропријација, провизии, и други индиректни ставки)
- Води посебно сметководство за проектот,
- Потпишува и заверува договор, времени и завршни ситуации по проектот и барање за исплата на средства кое се доставува до Јапонската банка за меѓународна соработка,
- Врши преглед на документацијата за исплата на трошоци (средства) и ги доставува до Инвеститорот заради понатамошно постапување,
- Обезбедува дневен надзор над работите на објектот,
- Да предвиди средства во својот буџет за плаќање на ДДВ на проектот,
- Да организира технички преглед и технички прием на завршниот проект,
- По целосно завршување на проектот објектот станица за пречистување на вода за пиење-филтер станица го презема на одржување.

Агенцијата за имплементација се обврзува:

- Сеопфатен надзор над проектот,
- Проследување на барања до банката-агент за исплата од кредитот согласно процедурите за повлекување средства предвидени во Договорот за заем: процедура по основ на утврдени обврски, процедура за надоместување на трошоците или процедура за трансфер,
- Спроведување на процедурите од договорот за уредување на меѓусебните обврски со Народна банка на РМ и Министерството за финансии,
- Доставување информации до Владата за прогресот на проектот,
- Да ја следи реализацијата на проектот преку извештаите кои Единицата за имплементација му ги доставува редовно,
- Ја спроведува постапката за избор на изведувач на работите,
- Потпишува и заверува договор, времени и завршни ситуации по проектот и барање за исплата на средства кое се доставува до Јапонската банка за меѓународна соработка,
- Врши преглед на документацијата за исплата на трошоци (средства) и врши нивно понатамошно проследување.

Единица за имплементација на проектот се обврзува:

- Врши Дневен надзор со имплементацијата на проектот,
- Потпишува и заверува договор, времени и завршни ситуации по проектот и барање за исплата на средства кое се доставува до Јапонската банка за меѓународна соработка,
- Преглед на документи за исплата на трошоци (средства) и нивно доставување до Агенцијата за имплементација ,
- Доставување на известувања до Министерството за земјоделство, шумарство и водостопанство за постигнатиот прогрес врз основа на Извештаите од Инвеститорот,
- Учествува во изборот на изведувач за реализација на проектот,
- Го следи прогресот на реализација на проектот,
- Ги потпишува финансиските документите кои се основ за исплата.

НАЧИН НА ПЛАЌАЊЕ

Член 6

Плаќањето за реализација на проектот ќе се врши со процедури согласно Договорот за заем за реализација на проектот за подобрување на искористување на водата од басенот на реката Злетовица .

РОК НА ДОГОВОРОТ

Член 7

Овој договор стапува на сила на денот на неговото потпишување од страна на овластените претставници на сите договорни страни.

РАЗНО

Член 8

За се што не е предвидено со овој договор важат соодветните прописи на Република Македонија.

Во случај на спор по овој договор, спорот ќе се решава спогодбено.

Доколку не се постигне спогодба, надлежен за решавање на спорот е Основниот суд Скопје 1.

Член 9

Овој договор може да се менува и дополнува со потпишување на анекси по предлог на една од договорните страни, доставен на претходно разгледување до другите договорни страни.

Член 10

Овој договор е склучен во 8 (осум) еднообразни примероци од кои по 2 за секоја од договорните страни.

Инвеститор
Општина Пробиштип
Градоначалник
Тони Тоневски

Агенција за имплементација
Министерство за земјоделство, шумарство и водостопанство
Министер
Љупчо Димовски

Реализатор на инвестицијата
ЈКП Никола Карев Пробиштип
Директор
Милан Терзик

Единица за имплементација
ЈП Хидросистем Злетовица
Директор
Стојан Миланов

Based on the Law on indebtedness of the Republic of Macedonia with a loan at the Japan bank for international cooperation under Loan Agreement for implementation of the Zletovica water use improvement project (Official Gazette of RM no.72/03, 103/08 and 47/11), the Loan Agreement between the Government of Republic of Macedonia and Japan bank for international cooperation MAC-P1 dated 20.11.2003, the On-lending agreement concluded between the Ministry of finance and Municipality of Stip and the conclusion of the Government of RM no.51-1980/1 dated 23.03.2011:

1. The Ministry of agriculture, forestry and water economy Skopje, represented by the Minister Ljupco Dimovski, hereinafter called Agency for implementation of the project,

2. The Public Enterprise Hydrosystem "Zletovica" Probistip, represented by the Director Stojan Milanov, hereinafter called Implementation Unit of the project and

3. Municipality of Stip, represented by the Mayor Zoran Aleksov, hereinafter called Investor of the project,

4. Public communal enterprise "Isar" from Stip, represented by the Director Nikola Micevski, hereinafter called as Implementer of the investment

concluded:

AGREEMENT

On implementation of the project for rehabilitation of the part of WTP for treatment of ground water
(coagulation and sedimentation)
(filter station)

SUBJECT OF CONTRACT

Article 1

Subject of this agreement is fully rehabilitation of the part of the WTP for treatment of ground water (coagulation and sedimentation) (filter station) in Municipality of Stip in order to provide the drinking water from Hydrosystem "Zletovica" to the final consumers-citizens of Stip municipality.

Contractual parties have agreed the project for rehabilitation of the part of the WTP for treatment of ground water (coagulation and sedimentation) (filter station) and consulting services for this project to be financed by the sub-loan from the Ministry of finance in amount of 24.600.000,00 MKD as a part of the Loan of the Government of RM from Japan bank for international cooperation.

PROCUREMENT OF CONTRACTOR

Article 2

The procurement of the contractor of the works on implementation of the project for rehabilitation of the part of the WTP for treatment of ground water (coagulation and sedimentation) (filter station) in Municipality of Stip, and which will be financed by the recourses provided by the sub-loan (on-lending) will be done by the Ministry of agriculture, forestry and water economy as Implementation

Agency of the project which entitlement arises from the Agreement for implementation of the Zletovica water use improvement project according to the Guidance of the Japan bank for international cooperation which are related to procurement of goods and services from October 1999 and which are adopted in the Original loan agreement between the Government of RM and the Japan bank for international cooperation, for realization of the Hydrosystem Zletovica Probistip MAC-P1 dated 20.11.2003.

The procedure of procurement of contractor of thee work shall be conducted by committee with 7 members and their deputies as follows Chairman and one member and their deputies shall be nominated by the Implementation Agency, two members and their deputies shall be nominated by the Implementation Unit and the Investor of the project and one member and his deputy shall nominate the Implementer of the investment.

The evaluation of the bids for procurement of contractor conducts the committee. The report of evaluation of bids is submitting to the Japan bank for international cooperation for concurrence.

The agreement with the selected contractor shall be signed by the Implementation Agency, Implementation Unit, Investor and Implementer of investment.

Article 3

The consulting services shall be done by the consultant selected by the Implementation Agency under Amendment 8 which shall regulate the rights and liabilities of the contractual parties, and the Investor agrees on signing of Amendment 8.

The consulting services will be financed from the funds of the sub-loan (on-lending).

REHABILITATION OF THE PART OF WTP FOR TREATMENT OF GROUND WATER (COAGULATION AND SEDIMENTATION) (FILTER STATION)

Article 4

The deadline for submission of the request for payment of implemented activities by the Implementation Agency to the Japan agency for international cooperation-JICA (former Japan bank for international cooperation) is 20.12.2012.

Article 5

The Investor is responsible for:

- To provide entire documentation (necessary consents and permissions) in accordance with the positive legal regulations for freely commencement of the rehabilitation of the part of the WTP for treatment of ground water (coagulation and sedimentation),
- Participate in the selection of contractor for implementation of the project,
- Prepares and submits monthly reports for the progress of the works to the Implementation Unit,
- Signs and seals agreement, interim and final certificates under project and request for payment to the Japan bank for international cooperation,
- Check the documentation for payment of costs (amounts) and submits it to the Implementation Unit due to further proceeding,
- Provides supervision of works on daily base,

- To conclude agreement with the other contractual parties for regulation of the rights and liabilities on the method of payment of taxes and expenses which arise from the Original loan agreement, as well as expenses of the Implementation Agency and Unit for implementation of the project.

The Implementer of investment is responsible for:

- Participate in the selection of contractor for implementation of the project,
- To provide funds in his budget for activities related to the project and which could not be financed by the loan (general administrative cost, taxes, customs, land acquisition, fees and other indirect costs),
- Conducts separate accounting for the project,
- Signs and seals agreement, interim and final certificates under project and request for payment to the Japan bank for international cooperation,
- Check the documentation for payment of costs (amounts) and submits it to the Implementation Unit due to further proceeding,
- Provides supervision of works on daily base,
- To provides funs in his budget for payment of VAT for the project,
- To organize technical inspection and technical acceptance of the completed project,
- After completion of the project, takes over for maintenance the structure water treatment plant.

The Implementation Agency is responsible for:

- Total supervision of the project,
- Forward of requests to the bank-agent for disbursement of the loan in accordance with the procedures for withdrawal of funds under the Loan agreement: procedure based on identified liabilities, procedure of cost compensation or procedure of transfer,
- Conducting of procedures of the agreement for regulation of the mutual obligations with the Central bank of RM and the Ministry of finance,
- Submission of information to the Government on progress of the project,
- To follow-up the project implementation through the report submitted by the Implementation Unit regularly,
- Conducts the procedure of selection of contractor of the works,
- Signs and seals agreement, interim and final certificates under project and request for payment to the Japan bank for international cooperation,
- Check the documentation for payment of expenditures (amounts) and forward it for further proceeding.

The Implementation Unit of the project is responsible for:

- Conduct supervision of works on Daily base,
- Signs and seals agreement, interim and final certificates under project and request for payment to the Japan bank for international cooperation,
- Check the documentation for payment of costs (amounts) and submits it to the Implementation Agency,
- Submission of notification to the Ministry of agriculture, forestry and water economy of the work progress based on the Reports by the Investor,
- Participate in the selection of contractor for implementation of the project,
- Follow-up the progress of implementation of the project,
- Signs the financial documents which are base for payment.

WAY OF PAYMENT

Article 6

The payment of the project realization shall be done under procedures in accordance with the Loan agreement for implementation of the Zletovica water use improvement project.

CONTRACT PERIOD

Article 7

This agreement shall come into effect on the day of signing by the authorized representatives of all contractual parties.

MISCELLANEOUS

Article 8

Other conditions not specified herein are regulating by adequate regulations of Republic of Macedonia.

In case of dispute, it will be settled by mutual consent.

In case of failure to reach any agreement, competent is the Primary court Skopje 1.

Article 9

This Agreement could be changed and amended by signing of Amendments under proposal of one of the contractual parties, submitted to prior consideration to the other parties.

Article 10

This Agreement is made in 8 (eight) identical copies, two for each party.

Investor
Municipality of Stip
Mayor

Zoran Aleksov

Implementation Agency
Ministry of agriculture, forestry and
Water economy
Minister

Ljupco Dimovski

Implementer of investment
PCE Isar Stip
Director

Nikola Micevski

Implementation Unit
PE Hydrosystem Zletovica
Director

Stojan Milanov

Врз основа на Законот за задолжување на Република Македонија со заем кај Јапонската банка за меѓународна соработка по Договорот за заем за реализација на проектот за подобрување на искористувањето на водите од басенот на реката Злетовица (Службен весник на РМ бр.72/03, 103/08 и 47/11), Договорот за заем помеѓу Владата на Република Македонија и Јапонската банка за меѓународна соработка МАС-Р1 од 20.11.2003 година, Договорот за под заем склучен помеѓу Министерството за финансии и Општина Штип и заклучокот на Владата на РМ бр.51-1980/1 од 23.03.2011 година:

1.Министерството за земјоделство, шумарство и водостопанство Скопје претставувано од Министерот Љупчо Димовски во понатамошниот текст Агенција за имплементација на проектот,

2. Јавното Претпријатие Хидросистем "Злетовица" Пробиштип претставувано од Директорот Стојан Миланов, во понатамошниот текст Единица за имплементација на проектот и

3. Општина Штип застапувана од Градоначалникот д-р Зоран Алексов, во понатамошниот текст Инвеститор на проектот,

4.Јавното претпријатие за комунално производни и услужни работи "Исар" од Штип претставувано од Директорот Никола Мицевски, во понатамошниот текст како реализатор на инвестицијата

РЕПУБЛИКА МАКЕДОНИЈА
МИНИСТЕРСТВО ЗА ЗЕМЈОДЕЛСТВО, ШУМАРСТВО И ВОДОСТОПАНСТВО
Бр. 02-11382/1
18.11 2011 год.
СКОПЈЕ

РЕПУБЛИКА МАКЕДОНИЈА
ОПШТИНА ШТИП
Бр. 03-2180/1
27.03. 2012 год.
ШТИП

склучија:

ДОГОВОР

За имплементација на проектот за адаптација на делот од ППВ за обработка на површинските води (коагулација и седиментација) (филтер станица)

Јавно претпријатие за комунални производни и услужни дејности "И С А Р" Штип
Бр. 03 - 548/1
27. 03. 2012 год.
Ш т и п

Јавно претпријатие за водостопански дејности ХС "ЗЛЕТОВИЦА"
Бр. 0306-1599/2
18.11 2011 год.
Пробиштип

ПРЕДМЕТ НА ДОГОВОРОТ

Член 1

Предмет на овој договор е целосна адаптација на делот од ППВ за обработка на површинските води (коагулација и седиментација) (филтер станица) во Општина Штип со цел водата наменета за пиење од Хидросистемот "Злетовица" да дојде до крајните потрошувачи-граѓаните на општина Пробиштип.

Договорните страни се согласни проектот за адаптација на делот од ППВ за обработка на површинските води (коагулација и седиментација) (филтер станица) во Општина Штип и консултантски услуги за овој проект да се финансираат со средства од под-заемот од Министерството за финансии во износ од 24.600.000,00 денари како дел од заемот со кој Владата на РМ се задолжи кај Јапонската банка за меѓународна соработка.

НАБАВКА НА ИЗВЕДУВАЧ НА РАБОТИТЕ

Член 2

Набавката на изведувач на работите за реализација на проектот за адаптација на делот од ППВ за обработка на површинските води (коагулација и седиментација) (филтер станица) во Општина Штип, а која ќе се финансира од средствата кои се обезбедени од под заемот ќе ја врши Министерството за земјоделство, шумарство и водостопанство како Агенција за имплементација на проектот која надлежност произлегува од Договорот за реализација на Проектот за подобрување на искористувањето на водите од басенот-слив на реката Злетовица

според Упатствата од Јапонската банка за меѓународна соработка кои се однесуваат на набавка на добра и услуги од октомври 1999 година а кои се прифатени во основниот договор за заем помеѓу Владата на РМ и Јапонската банка за меѓународна соработка, за реализација на хидросистемот Злетовица Пробиштип МАС-Р1 од 20.11.2003 година.

Постапката за набавка на изведувач на работите ќе ја спроведе комисија од 7 члена и нивни заменици и тоа Претседател и еден член и нивни заменици ќе делегира Агенцијата за имплементација, по двајца членови и нивни заменици ќе делегираат Единицата за имплементација и инвеститорот на проектот и еден член и негов заменик ќе делегира реализаторот на инвестицијата.

Евалуацијата на понудите за набавката на изведувач на работите го врши комисијата. Извештајот за евалуација на понудите се доставува на согласност до Јапонската банка за меѓународна соработка.

Договорот со избраниот изведувач го потпишува Агенцијата за имплементација, Единицата за имплементација, Инвеститорот и Реализаторот на инвестицијата.

Член 3

Консултантските услуги ќе ги врши консултант избран од страна на Агенцијата за имплементација со Анекс 8 со кој ќе бидат регулиранн правата и обврските на договорните страни, а инвеститорот се согласува да се потпише Анексот 8.

Консултанските услуги ќе се финансират со средства од под-заемот.

АДАПТАЦИЈА НА ДЕЛОТ ОД ППВ ЗА ОБРАБОТКА НА ПОВРШИНСКИТЕ ВОДИ (КОАГУЛАЦИЈА И СЕДИМЕНТАЦИЈА) (ФИЛТЕР СТАНИЦА)

Член 4

Краен рок за испраќање барање до Јапонската агенција за меѓународна соработка-ЈАЈКА (поранешна Јапонска банка за меѓународна соработка)за плаќање на реализирани активности од страна на Агенцијата за имплементација на проектот е 20.12.2012 година.

Член 5

Инвеститорот се обврзува:

- Да ја обезбеди целокупната документација(потребни одобренија и дозволи) согласно позитивните законски прописи за непречено отпочнување на адаптација на делот од ППВ за обработка на површинските води (коагулација и седиментација)
- Учествува во изборот на изведувач за реализација на проектот,
- Изготвување и доставување на месечни извештаи за текот на работите до Единицата за имплементација,
- Потпишува и заверува договор, времени и завршни ситуации по проектот и барање за исплата на средства кое се доставува до Јапонската банка за меѓународна соработка
- Врши преглед на документацијата за исплата на трошоци (средства) и ги доставува до Единицата за имплементација заради понатамошно постапување,
- Обезбедува дневен надзор над работите на објектот
- Да склучи договор со останатите договорни страни за регулирање на правата к обврските за начинот на плаќање на даноците и трошоците кои произлегуваат од основниот договор за заем, како и трошоците кои Агенцијата и Единицата за имплементација ги имаат за реализација на проектот.

Реализаторот на инвестицијата се обврзува:

- Учествува во изборот на изведувач за реализација на проектот,
- Да предвиди средства во својот буџет за активностите кои се поврзани со проектот а кои неможат да се финансираат од заемот (општи административни трошоци, даноци, царини, експропријација, провизии, и други индиректни ставки)
- Води посебно сметководство за проектот,
- Потпишува и заверува договор, времени и завршни ситуации по проектот и барање за исплата на средства кое се доставува до Јапонската банка за меѓународна соработка,
- Врши преглед на документацијата за исплата на трошоци (средства) и ги доставува до Инвеститорот заради понатамошно постапување,
- Обезбедува дневен надзор над работите на објектот,
- Да предвиди средства во својот буџет за плаќање на ДДВ на проектот,
- Да организира технички преглед и технички прием на завршниот проект,
- По целосно завршување на проектот објектот станица за пречистување на вода за пиење-филтер станица го презема на одржување.

Агенцијата за имплементација се обврзува:

- Сеопфатен надзор над проектот,
- Проследување на барања до банката-агент за исплата од кредитот согласно процедурите за повлекување средства предвидени во Договорот за заем: процедура по основ на утврдени обврски, процедура за надоместување на трошоците или процедура за трансфер,
- Спроведување на процедурите од договорот за уредување на меѓусебните обврски со Народна банка на РМ и Министерството за финансии,
- Доставување информации до Владата за прогресот на проектот,
- Да ја следи реализацијата на проектот преку извештаите кои Единицата за имплементација му ги доставува редовно,
- Ја спроведува постапката за избор на изведувач на работите,
- Потпишува и заверува договор, времени и завршни ситуации по проектот и барање за исплата на средства кое се доставува до Јапонската банка за меѓународна соработка,
- Врши преглед на документацијата за исплата на трошоци (средства) и врши нивно понатамошно проследување.

Единица за имплементација на проектот се обврзува:

- Врши Дневен надзор со имплементацијата на проектот,
- Потпишува и заверува договор, времени и завршни ситуации по проектот и барање за исплата на средства кое се доставува до Јапонската банка за меѓународна соработка,
- Преглед на документи за исплата на трошоци (средства) и нивно доставување до Агенцијата за имплементација ,
- Доставување на известувања до Министерството за земјоделство, шумарство и водостопанство за постигнатиот прогрес врз основа на Извештаите од Инвеститорот,
- Учествува во изборот на изведувач за реализација на проектот,
- Го следи прогресот на реализација на проектот,
- Ги потпишува финансиските документите кои се основ за исплата.

НАЧИН НА ПЛАЌАЊЕ

Член 6

Плаќањето за реализација на проектот ќе се врши со процедури согласно Договорот за заем за реализација на проектот за подобрување на искористување на водата од басенот на реката Злетовица .

РОК НА ДОГОВОРОТ

Член 7

Овој договор стапува на сила на денот на неговото потпишување од страна на овластените претставници на сите договорни страни.

РАЗНО

Член 8

За се што не е предвидено со овој договор важат соодветните прописи на Република Македонија.

Во случај на спор по овој договор, спорот ќе се решава спогодбено.

Доколку не се постигне спогодба, надлежен за решавање на спорот е Основниот суд Скопје 1.

Член 9

Овој договор може да се менува и дополнува со потпишување на анекси по предлог на една од договорните страни, доставен на претходно разгледување до другите договорни страни.

Член 10

Овој договор е склучен во 8 (осум) еднообразни примероци од кои по 2 за секоја од договорните страни.

Инвеститор
Општина Штип
Градоначалник
д-р Зоран Алексов

Агенција за имплементација
Министерство за земјоделство, шумарство и водостопанство
Министер
Љубчо Димовски

Реализатор на инвестицијата
ЈКП Исар Штип
Директор
Никола Мимовски

Единица за имплементација
ЈП Хидросистем Електровлада
Директор
Стојан Мила[illegible]

Operation and Maintenance Cost of Planned ProbiProbistip WTP (Plant after rehabilitation) 2011 11 24

Unit electricity cost is set as 3,34 based on the 2010 invice Unit Electricity cost : 3.34 MKD/kwh

Total water supplied 2011 1,184,596 m³/year = 3,245 m3/day = 38 L/sec

(without VAT)

	Item	Quantity, estimated by OC		Unit price		Amount 2010 (MKD)	Cost of Water (MKD/m³)	Remark
1	Cost of raw water	1,184,596	m3	-	MKD/m3	-	-	National condition
2	Aluminium sulfate	35,405	kg	17.5	MKD/kg	619,588	0.52	See attachment, Regent file
3	Lime in waterless condition	11,680	kg	11.0	MKD/kg	128,480	0.11	Ditto
4	Chlorine	1,460	kg	53.0	MKD/kg	77,380	0.07	Ditto
5	Maintenance of chlorine bottle	1	L.S.	40,860	MKD/year	40,860	0.03	Ratio to Stip in treatment amount
6	Polyelectrolyte	584	kg	550	MKD/kg	321,200	0.27	See attachment, Regent file
7	Ozonzlion	-	-	-	-	-	-	Included in electricity
8	Electricity	350,400	KWh	3.34	MKD/KWh	1,170,336	0.99	See below, note1
9	Maintenance	1	L.S.	245,161	MKD/year	245,161	0.21	Ratio to Stip in treatment amount
10	Personnel	15	No.	20,000	MKD/month	3,600,000	3.04	Ditto
11	Depreciation	49,200,000	MKD	5	%	2,460,000	2.08	Investment cost is temporally estimated as 800,000Euro =49,200,000MKD (61.5MKD/Euro), rate is set as 5% as estimated 20years lifetime
12	Refund of loan for rehabilitating WTP	66,265,000	MKD	5	%	3,313,250	2.80	Loan is temporally estimated as A= 800,000Euro =49,200,000MKD (61.5MKD/Euro), interest rate is set as 1.5% for 20years, B=A x 1.015^20= 66,265,000, rate is 5% as refunded period is 20years.
13	Maintenance of the present groundwater lifting up system	11,360,000	MKD	20	%	2,272,000	1.92	Just estimated as 20% for maintaining the present system
	Total	-	-	-	-	8,663,005	10.11	-

Note1

Electricity consumption 40 kw x 24 x 365

= 350,400 kwh

Note2 Above calculation does not include administrative cost

Note3 Condition of the above estimation

Chemical expenses are revised based on the latest unit cost, obtained from Vinica WTP

Raw water cost estimation (without VAT)

	Present groundwater lifting up system	(MKD)	-	-	-	11,590,400	9.78	See the attachment of "Operation and Maintenance Cost of Present Stip water work, Year 2010"

Recommendation on Raw Water Unit Cost

"Estimated from the present OM cost using groundwater" - "Planned OM cost under WTP rehabilitation" (without VAT)

1	Cost of raw water	1,184,596	m3	(0.3)	MKD/m3	(390,917)	- 0.33	= 9,78 - 10,11

Proposed raw water tariff is as follows (without VAT)

1	Cost of raw water	1,184,596	m3	4.0	MKD/m3	4,738,384	4.00	National condition

Condition of Stip Municipality and proposed raw water unit cost

At the moment, Probistip municipaloity has shortage of the water in summer season / dry season at groundwater.

So, the new water sources from HSZ is required for supplying stable water even in the dry season.

Water is fundamental for the municipality work, but the municipality fincancial condition is not so good.

It is desired that future water work expences shall be set reasonable for the both organizations (HSZ and Stip Municipality) can be sustained in finance.

So, the raw water tariff is recommended about 2-3 MKD/m3.

Merit for Probistip Municipality to construct a new WTP

Obtaining an additional safe water source

Getting raw water from HSZ would be cheaper, if unit electricity cost is increased in the future.

Summary of the Comparison of the OM cost between present water work and planned water work

2011 12 02

without VAT

Unit: MKD/m3

Present or Planed		Estimation by Isar	Estimation by OC (with 3MKD/kwh)	Estimation by OC (with 7MKD/kwh)
Present water work	Well PS + Intermitted PS	4.24	4.53	8.87
	WTP	1.57	1.57	1.85
	Total	5.82	6.09	10.72
Planned water work	Total	-	3.17	3.95
Difference	Total	-	2.92	6.77

Proposed raw water tariff		2.5	6.5

Future water work expences shall be less than the present expences, as it is necessary to make the Stip Municipality financial condition sustainalbe.
At the moment, Stip municipaloity does not have problem on the present water sources using groundwater.
So, the raw water tariff shall be about 2-3 MKD/m3.

Merit for Stip Municipality to rehabilitate the present WTP
Obtaining an additional safe water source
Getting raw water from HSZ would be cheaper, if unit electricity cost is increased in the future.

We propose Stip municipality will rehabilitate tbe WTP to receive the Raw water from Hydrosystem Zletovica, with the above condition.

Based on article 1, paragraph 2 of the Law on Public debt ("Official Gazette of RM" No.62/05, 88/08 and 35/11) and article 5 of the Law on indebtedness of the Republic of Macedonia with a loan at the japan bank for international cooperation under Loan Agreement for implementation of the Zletovica water use improvement project (Official Gazette of RM no.72/03, 108/08 and 47/11), (hereinafter called: Law on indebtedness), the Government of Republic of Macedonia, represented by the Ministry of finance and JKP "Nikola Karev" Probistip, have concluded

ON-LENDING AGREEMENT

On 01.02.2012 between the contract parties:

1. Ministry of finance of Republic of Macedonia, represented by Deputy Prime Minister and Minister of finance Mr. Zoran Stavreski, and
2. JKP "Nikola Karev" Probistip, represented by the Director of JKP "Nikola Karev" Probistip, Mr. Milan Terzic

Article 1

Subject of this Agreement are the terms and method of using of part of the loan approved by the Japan bank for international cooperation for implementation of the Zletovica water use improvement project.

Article 2

The contractual parties accept the provisions of the Loan Agreement No. MAC-P1 concluded 20.11.2003 between the Japan bank for international cooperation and the Government of Republic of Macedonia, as well as the provisions of this agreement.
Expressions and definitions which are use in this Agreement, and which are defined in the Loan Agreement, have the same meaning as in the Loan Agreement, if different interpretation is not required by the context.

Article 3

The Ministry of finance grants a sub-loan to the JKP "Nikola Karev" Probistip in amount of 49.000.000,00 denars for implementation of the Project for construction of water treatment plant (filter station).
The sub-loan of paragraph 1 is approved with 17 years repayment period, including 1 year and 3 months grace period and 1,50% interest rate per year. During the grace period, JKP "Nikola Karev" pays only the interest of the sub-loan.
The repayment of the sub-loan of paragraph 1 of this article shall be done in semi-annual installments, on May 10 and November 10, starting from May 10, 2013.
After fully withdrawal of the sub-loan of paragraph 1 of this article, the Ministry of finance shall prepare the terms of redemption and it shall become constituent part of this agreement.

Article 4

All the payments arising of article 3 of this agreement JKP "Nikola Karev" Probistip shall have money order to the Budget of Republic of Macedonia.
The Ministry of finance informs JKP "Nikola Karev" Probistip for the amounts and deadlines for repayment of obligation arising from article 3 of this agreement which should be transferred to the account mentioned in paragraph 1 of this article.

Article 5

If the amount of the sub-loan is matured, but not paid, and the period of non-payment is extended to 30 days, than JKP "Nikola Karev" Probistip pays penalty interest for the overdue amount under rate provides by the law.
In case that JKP "Nikola Karev" Probistip has no sufficient budget for fully and timely service of obligations of this sub-agreement, and according to the Decision for security made by Municipality of Probistip No. 07-114/8 dated 31.01.2012, the Ministry of finance is entitled to:

a) to reallocate funds from the budget account of municipality to the account of the Ministry of finance to the amount required for service of the obligation of municipality and/or,
b) to keep a part of the finances which suppose to be transferred to the municipality, to the amount required to for service of the obligation of the municipality.

Article 6

If the amount of the sub-loan is matured, but not paid, JKP "Nikola Karev" Probistip agrees to Ministry of finance to issue an order to the public revenue office for blocking of the funds of JKP "Nikola Karev" on the base of return of VAT in order to cover the obligation arisen from this agreement increased for legal penalty interest and the additional cost related to this transaction.
JKP "Nikola Karev" Probistip in order to secure the obligations of this agreement, beside the method prescribed in paragraph 1 of this article, agrees to deposit for the Ministry of finance 3 (three) B/E-bill of exchange with declaration in form of notarial act.
By signing of this agreement JKP "Nikola Karev" entitles the Ministry of finance to use the instruments (B/E) for compensation of the total matured obligations upon this agreement. At the same time, JKP "Nikola Karev" agrees to make change and/or amendment of the instrument for protection with another instrument according to the legal provisions.

Article 7

The proceeds of this loan shall be used for financing of the Project for construction of infrastructural structure-water treatment plant (filter station). According to the Loan Agreement No. MAC-P1, the proceeds of loan may be used for the following categories of cost:

- construction works and equipment
- consulting services.

Article 8

For other conditions not specified herein valid are adequate regulations of Republic of Macedonia.
In case of dispute, it will be settled by mutual consent.
In case of failure to reach any agreement, competent is the authorized Court.

Article 9

This Agreement could be changed and amended by signing of Amendments under proposal of one of the contractual parties, submitted to prior consideration to the other parties.

Article 10

This Agreement is made in 4 (four) identical copies, two for each party.

On behalf of Ministry of finance Deputy Prime Minister Minister of finance	On behalf of JKP "Nikola Karev" Probistip Director
Zoran Stavreski	Milan Terzik

Јавно комунално претпријатие "Никола Карев" бр. 03-455/11 01-02-2012 год. Пробиштип

РЕПУБЛИКА МАКЕДОНИЈА МИНИСТЕРСТВО ЗА ФИНАНСИИ бр. 10-6056/1 09-02-2012 год. СКОПЈЕ

Врз основа на член 17 став 2 од Законот за јавен долг ("Службен весник на РМ" бр.62/05, 88/08 и 35/11) и член 5 од Законот за задолжување на Република Македонија со заем кај Јапонската банка за меѓународна соработка по Договорот за заем за реализација на Проектот за подобрување на искористување на водата во басенот на реката Злетовица ("Службен весник на РМ" бр.72/03, 103/08 и 47/11), (во натамошниот текст: Закон за задолжување), Владата на Република Македонија претставувана од Министерство за финансии и ЈКП "Никола Карев" Пробиштип (во натамошниот текст: Договорни страни) склучија

ДОГОВОР ЗА ПОД-ЗАЕМ

на ден :01.02.2012 год помеѓу договорните страни:

1.Министерство за финансии на Република Македонија, претставувано од Заменик претседател на Влада и Министер за финансии, м-р Зоран Ставрески, и
2.ЈКП "Никола Карев" Пробиштип, претставувано од Директорот на ЈКП "Никола Карев" Пробиштип, Милан Терзиќ

Член 1

Предмет на овој Договор се условите и начинот на користење на дел од средствата од заемот одобрен од Јапонската банка за меѓународна соработка за реализација на Проектот за подобрување на искористување на водата во басенот на реката Злетовица.

Член 2

Договорните страни ги прифаќаат одредбите на Договорот за заем бр. МАС-Р1 склучен меѓу Јапонската банка за меѓународна соработка и Владата на Република Македонија на ден 20.11.2003 година, како и одредбите на овој договор.

Изразите и дефинициите што се употребуваат во овој Договор, а чии поими се дефинирани во Договорот за заем, го имаат истото значење што го имаат и во Договор за заем, доколку контекстот не бара поинакво толкување.

Член 3

Министерството за финансии му доделува под-заем на ЈКП "Никола Карев" Пробиштип во износ од 49.000.000,00 денари за реализација на Проектот за изградба на станица за пречистување на вода за пиење (филтер станица).

Под-заемот од став 1 на овој член се одобрува со рок на отплата од 17 години, со вклучен грејс период од 1 година и 3 месеци и каматна стапка од 1,50% на годишно ниво. За време на грејс периодот, ЈКП "Никола Карев" Пробиштип плаќа само камата на под-заемот.

ЈКП "Никола Карев" Пробиштип под-заемот од став 1 на овој член ќе го отплаќа во полугодишни рати, на 10-ти мај и 10-ти ноември, почнувајќи од 10-ти мај 2013 година.

По целосното повлекување на подзаемот од став 1 на овој член, Министерството за финансии ќе изработи амортизационен план за отплата на подзаемот, и истиот ќе претставува составен дел на овој договор.

Член 4

Сите плаќања за обврските од член 3 на овој договор ЈКП "Никола Карев" Пробиштип ги дозначува на сметката на Буџетот на Република Македонија.

Министерството за финансии го известува ЈКП "Никола Карев" Пробиштип за износот и роковите за отплата на обврските од член 3 на овој договор кои треба да се префрла на сметката предвидена во став 1 од овој член.

Доколку, од која било објективна причина, Министерството за финансии не испрати такво известување, тоа не го ослободува ЈКП "Никола Карев" Пробиштип од неговите обврски за плаќање утврдени во овој договор.

Член 5

Доколку износ од под-земот е доспеан, а не е платен, и таквото неплаќање продолжи во период од триесет дена, тогаш ЈКП "Никола Карев" Пробиштип плаќа затезна камата на таквиот задоцнет износ по стапка пропишана со закон.

Во случај кога ЈКП "Никола Карев" Пробиштип нема да обезбеди доволно средства за целосно и навремено сервисирање на обврските од овој поддоговор, а согласно Одлуката за гаранција донесена од Општина Пробиштип бр.07-114/8 од 31.01.2012 год., Министерството за финансии има право:

а) да пренасочи средства од буџетската сметка на општината на сметката на Министерството за финансии до износот што е потребен за сервисирање на обврската на општината и/или,

б) да задржи дел од средствата кои треба да ѝ се префрлат на општината, до износот потребен за сервисирање на обврската на општината.

Член 6

Доколку износ од под-земот е доспеан, а не е платен, ЈКП "Никола Карев" Пробиштип е согласно Министерството за финансии да издаде налог до Управата за јавни приходи за блокирање на средствата на ЈКП "Никола Карев" Пробиштип по основ на враќање на ДДВ, а со цел намирување на пристигнатите обврски по основ на овој договор големени за законската казнена камата и за настанатите трошоци поврзани со оодветната трансакција.

КП "Никола Карев" Пробиштип за обезбедување на сите обврските по овој договор, покрај начинот предвиден во став 1 од овој член е согласно во корист на

Министерството за финансии да депонира 3 (три) меници со менични изјави во форма на нотарски акт.

Со потпишување на овој договор ЈКП "Никола Карев" Пробиштип го овластува Министерството за финансии да ги употреби инструментите (мениците) за намирување на вкупните пристигнати обврски по овој договор. Воедно, ЈКП "Никола Карев" Пробиштип е согласно по барање на Министерството за финансии во секој момент на важност на договорот да изврши дополнување и/или замена на инструментот за обезбедување со друг инструмент согласно законските одредби.

Член 7

Средствата од овој заем се користат исклучиво за финансирање на Проектот за изградба на инфраструктурен објект – фабрика за преработка на вода за пиење (филтер станица). Согласно Договорот за заем бр. МАС-Р1 средствата од заемот може да се користат за следните две категории на трошоци:

- градежни работи и опрема,
- консултантски услуги.

Член 8

За се што не е предвидено со овој Договор, ќе се применуваат важечките правни прописи во Република Македонија.

Во случај на спор по овој Договор, спорот ќе се решава спогодбено. Доколку не се постигне спогодба, спорот ќе се решава пред надлежниот Суд.

Член 9

Овој договор може да се менува и дополнува со потпишување на анекси по предлог на една од договорните страни, доставен на претходно разгледување до другата договорна страна.

Член 10

Овој договор е склучен во 4 (четири) еднообразни примероци, по 2 (два) за секоја од договорните страни.

За Министерство за финансии

Заменик Претседател на Влада
Министер за финансии
Марко Ковачевски

За ЈКП "Никола Карев" Пробиштип

Директор
Милан Терзиќ

REPUBLIC OF MACEDONIA
MINISTRY OF FINANCE
No. 10-7069/1
16.02.2012
SKOPJE

Republic of Macedonia
Municipality of Stip
No. 03-930/1
07.02.2012
Stip

Based on article 17, paragraph 2 of the Law on Public debt ("Official Gazette of RM" No.62/05, 88/08 and 35/11) and article 5 of the Law on indebtedness of the Republic of Macedonia with a loan at the Japan bank for international cooperation under Loan Agreement for implementation of the Zletovica water use improvement project (Official Gazette of RM no.72/03, 103/08 and 47/11), (hereinafter called: Law on indebtedness), the Government of Republic of Macedonia, represented by the Ministry of finance and Municipality of Stip (hereinafter called: contractual parties), have concluded

ON-LENDING AGREEMENT

On February 7, 2012 between the contractual parties:

1. Ministry of finance of Republic of Macedonia, represented by Deputy Prime Minister and Minister of finance **Mr. Zoran Stavreski**, and
2. Municipality of Stip, represented by the Mayor of Stip Municipality, **Mr. Zoran Aleksov.**

Article 1

Subject of this Agreement are the terms and method of using of part of the loan approved by the Japan bank for international cooperation for implementation of the Zletovica water use improvement project.

Article 2

The contractual parties accept the provisions of the Loan Agreement No. MAC-P1 concluded 20.11.2003 between the Japan bank for international cooperation and the Government of Republic of Macedonia, as well as the provisions of this agreement.
Expressions and definitions which are use in this Agreement, and which are defined in the Loan Agreement, have the same meaning as in the Loan Agreement, if different interpretation is not required by the context.

Article 3

The Ministry of finance grants a sub-loan to the Municipality of Stip in amount of 28.900.000,00 denars for implementation of the Project for construction of water treatment plant (filter station).

The sub-loan of paragraph 1 is approved with 17 years repayment period, including 1 year and 3 months grace period and 1,50% interest rate per year. During the grace period, Municipality of Stip pays only the interest of the sub-loan.
The repayment of the sub-loan of paragraph 1 of this article Municipality of Stip will carry out in semi-annual installments, on May 10 and November 10, starting from May 10, 2013.
After fully withdrawal of the sub-loan of paragraph 1 of this article, the Ministry of finance shall prepare the terms of redemption and it shall become constituent part of this agreement.

Article 4

All the payments arising of article 3 of this agreement Municipality of Stip shall have money order to the Budget of Republic of Macedonia.
The Ministry of finance informs Municipality of Stip for the amounts and deadlines for repayment of obligation arising from article 3 of this agreement which should be transferred to the account mentioned in paragraph 1 of this article.
In case of any reason, the Ministry of finance does not send such notification, it will not release the municipality of payment of obligation under this agreement.

Article 5

If the amount of the sub-loan is matured, but not paid, and the period of non-payment is extended to 30 days, than Municipality of Stip pays penalty interest for the overdue amount under rate provides by the law.
In case that Municipality of Stip has no sufficient budget for fully and timely service of obligations of this sub-agreement, the Ministry of finance is entitled to:

a) to reallocate funds from the budget account of municipality to the account of the Ministry of finance to the amount required for service of the obligation of municipality and/or,
b) to keep a part of the finances which suppose to be transferred to the municipality, to the amount required to for service of the obligation of the municipality.

Article 6

In case that Municipality of Stip could not provide fully and timely service of obligations of this sub-agreement, the Municipality of Stip agree to give a part of its property as a deposit to the Ministry of finance, ratio 1:1 at any time during validity of this agreement, determined by the value of the deposit and demand from the Ministry of finance toward the Municipality of Stip.

Article 7

The proceeds of this loan shall be used for financing of the Project for construction of infrastructural structure-water treatment plant (filter station). According to the Loan Agreement No. MAC-P1, the proceeds of loan may be used for the following categories of cost:

- construction works and equipment
- consulting services.

Article 8

For other conditions not specified herein valid are adequate regulations of Republic of Macedonia.
In case of dispute, it will be settled by mutual consent.
In case of failure to reach any agreement, competent is the authorized Court.

Article 9

This Agreement could be changed and amended by signing of Amendments under proposal of one of the contractual parties, submitted to prior consideration to the other parties.

Article 10

This Agreement is made in 4 (four) identical copies, two for each party.

On behalf of Ministry of finance Deputy Prime Minister Minister of finance	On behalf of Municipality of Stip Mayor
_____ Zoran Stavreski	_____ Zoran Aleksov

РЕПУБЛИКА МАКЕДОНИЈА
МИНИСТЕРСТВО ЗА ФИНАНСИИ
Бр. 10-7069/1
16-02-2012 год.
СКОПЈЕ

Република Македонија
Општина Штип
Број 03-930/1
07.02.2012 година
Штип

Врз основа на член 17 став 2 од Законот за јавен долг („Службен весник на РМ" број 62/05, 88/08 и 35/11) и член 5 од Законот за задолжување на Република Македонија со заем кај Јапонската банка за меѓународна соработка по Договорот за заем за реализација на Проектот за подобрување на искористување на водата во базенот на реката Злетовица („Службен весник на РМ" број 72/03, 103/08 и 47/11), (во натамошниот текст Закон за задолжување), Владата на Република Македонија претставувана од Министерство за финансии и Општина Штип (во натамошниот текст: договорни страни) склучија

ДОГОВОР ЗА ПОД-ЗАЕМ

на ден **7 февруари 2012 година** помеѓу договорните страни:

1. Министерство за финансии на Република Македонија, претставувано од Заменик претседател на Влада и Министер за финансии, **м-р Зоран Ставрески**, и
2. Општина Штип, претставувана од Градоначалникот на Општина Штип, **д-р Зоран Алексов**.

Член 1

Предмет на овој договор се условите и начинот на користење на дел од средствата од заемот одобрен од Јапонската банка за меѓународна соработка за реализација на Проектот за подобрување на искористување на водата во базенот на реката Злетовица.

Член 2

Договорните страни ги прифаќаат одредбите на Договорот за заем број МАС-Р1 склучен меѓу Јапонската банка за меѓународна соработка и Владата на Република Македонија на ден 20 ноември 2003 година, како и одредбите на овој договор.

Изразите и дефинициите што се употребуваат во овој договор, а чии поими се дефинирани во Договорот за заем, го имаат истото значење што го имаат и во Договор за заем, доколку контекстот не бара поинакво толкување.

Член 3

Министерството за финансии и доделува под-заем на Општина Штип во износ од 28.900.000,00 денари за реализација на Проектот за изградба на станица за пречистување на вода за пиење (филтер станица). Под-заемот од став 1 на овој член се одобрува со рок на отплата од 17 години, со вклучен грејс

период од 1 година и 3 месеци и каматна стапка од 1,50% на годишно ниво. За време на грејс периодот, Општина Штип плаќа само камата на под-заемот.

Општина Штип под-заемот од став 1 на овој член ќе го отплаќа во полугодишни рати, на 10-ти мај и 10-ти ноември, почнувајќи од 10-ти мај 2013 година.

По целосното повлекување на подзаемот од став 1 на овој член, Министерството за финансии ќе изработи амортизационен план за отплата на подзаемот, и истиот ќе претставува составен дел на овој договор.

Член 4

Сите плаќања за обврските од член 3 на овој договор Општина Штип ги дозначува на сметката на Буџетот на Република Македонија.

Министерството за финансии ја известува Општина Штип за износот и роковите за отплата на обврските од член 3 на овој договор кои треба да се префрлат на сметката предвидена во став 1 од овој став.

Доколку, од која било објективна причина, Министерството за финансии не испрати такво известување, тоа не ја ослободува општината од нејзините обврски за плаќањата утврдени во овој договор.

Член 5

Доколку износ од под-земот е доспеан, а не е платен, и таквото неплаќање продолжи во период од триесет дена, тогаш Општина Штип плаќа затезна камата на таквиот задоцнет износ по стапка пропишана со закон.

Во случај кога Општина Штип нема да обезбеди доволно средства за целосно и навремено сервисирање на обврските од овој поддоговор, Министерството за финансии има право:

а) да пренасочи средства од буџетската сметка на општината на сметката на Министерството за финансии до износот што е потребен за сервисирање на обврската на општината и/или,

б) да задржи дел од средствата кои треба да и се префрлат на општината, до износот потребен за сервисирање на обврската на општината.

Член 6

Доколку Општина Штип не обезбеди целосно и навремено сервисирање на под-заемот, Општина Штип се согласува да даде дел од сопствен имот како залог во корист на Министерство за финансии, во сооднос 1:1 во секое време од важењето на овој договор, одреден според вредноста на залогот и побарувањето на Министерство за финансии од Општина Штип.

Член 7

Средствата од овој заем се користат исклучиво за финансирање на Проектот за изградба на инфраструктурен објект - фабрика за преработка на вода за пиење (филтер станица). Согласно Договорот за заем број МАС-Р1 средствата од заемот може да се користат за следните две категории на трошоци:

1. градежни работи и опрема,
2. консултантски услуги.

Член 8

За се што не е предвидено со овој договор, ќе се применуваат важечките правни прописи во Република Македонија.

Во случај на спор по овој договор, спорот ќе се решава спогодбено. Доколку не се постигне спогодба, спорот ќе се решава пред надлежниот суд.

Член 9

Овој договор може да се менува и дополнува со потпишување на анекси по предлог на една од договорните страни, доставен на претходно разгледување до другата договорна страна.

Член 10

Овој договор е склучен во 4 (четири) еднообразни примероци, по 2 (два) за секоја од договорните страни.

За Министерство за финансии
Заменик претседател на Влада
и Министер за финансии

[illegible] Ставрески

За Општина Штип
Градоначалник
д-р Зоран Алексов

AGREEMENT

Between:

Public enterprise for water economy activities Hydrosystem "Zletovica"-Probistip, address at "Cvetko Tonev" street No.3A, Probistip represented by the Director Stojan Milanov, (hereafter referred to as the **Supplier of services)** as the first party and

Public communal enterprise "Nikola Karev" address at Miro Baraga street NN, Probistip, represented by the Director Milan Terzic (hereafter referred to as the **Customer of services)** as the second party.

Article 1

Subject of this agreement is method of supply, quantities, schedule, measurement and payment of the raw water for the needs of the water treatment plant in Probistip, which is property of the customer of the services.

The raw water supply shall start after completion of construction of the water treatment plant.

Article 2

The supplier is obliged to deliver the water regularly and continuously from the Intake for water supply to Probistip and Zletovo through the supply pipeline to the water treatment plant, which is property of the costumer of the services.

The supplier of services is obliged to make supply of raw water with quality according to the Regulation on classification of water (Official Gazette of RM No.18/99).

The supplier is obliged to inform the customer for any change of quality of the raw water and to stop the supply of water which quality is not in accordance with the Regulation on classification of water (Official Gazette of RM No. 18/99).

In case the quality of supplied water does not meet the standards according to the Regulation on classification of water (Official Gazette of RM No. 18/99), confirmed by performed checking in the laboratory of the water treatment plant, the customer of services is entitled to reduce the quantity or to stop receiving of the raw water temporarily, immediately informing in written the supplier of services.

Article 3

Both sides agreed the quantities of the distributed raw water to be measured by the flow meter at the outlet manhole on the pipeline to Probistip, which is property of the Supplier.

The monthly quantities of distributed raw water will be determined every first day of the next month for the previous month from the recorded quantities of the watermeter with the record from authorized persons of both sides.

Article 4

The consumer is obliged to inform the Supplier for the total needs of raw water for the next year no later than December 31st in the current year. The annual and monthly needs should be given in m^3.

Article 5

The consumer and supplier have a right to make inspection and checking of the condition of the flow meters, current and total flow.

The costumer and the supplier have to provide this to each other and make that inspection together.

Article 6

In case of dry year and limited quantity of accumulated water, both sides will prepare a schedule of monthly utilization of the available quantities of water.

Article 7

The both parties agree, the distributed water to the water treatment plant in Probistip to be charge in accordance with the Tariff for the price of raw water from PE HS "Zletovica" No. 0201-1787/13 dated 23.12.2011 and Decision of the Government of the Republic of Macedonia No. 51-8313/1-11 dated 17.01.2012 for concurrence of the Tariff for the price of the raw water from PE HS "Zletovica" (Official Gazette of RM No. 15/12).

The distributed raw water to the consumer will be charged 3,00 MKD per m^3 VAT excluded.

The price for $1m^3$ raw water mentioned above in paragraph 2 of this article shall be increased for 1 MKD from 01.01.2014 and shall become 4 MKD without VAT.

The price for $1m^3$ raw water mentioned above in paragraph 3 of this article shall be increased for 1 MKD from 01.01.2016 and shall become 5 MKD without VAT.

The price for $1m^3$ raw water mentioned above in paragraph 4 of this article shall be increased for 1 MKD every year.

The supplier and the customer have agreed to start the distribution of the raw water after completion of the construction of the water treatment plant and the technical acceptance of the structure.

Article 8

The supplier shall submit invoice for the distributed raw water to the customer of services.

The customer of services will pay the invoices within 45 days of submission of the same.

Article 9

In case of that stoppage of water supply of the first or the second party, it is agreed that the both sides shall inform each other in written at least 48 hours before that.

In case of urgent intervention on the pipeline, the supplier is entitled to stop the water distribution based on verbal notification only.

The both sides are obliged on maximum cooperation during the eventual defects or unpredictable situations.

Article 10

This agreement and become effective on the day of signing, and shall be applied after the technical acceptance of the structure.

Article 11

The both parties could change or amend the provisions of the contract only by mutual consent.

The provisions of this agreement could be changed or amended by making agreement for change and amending of the original agreement.

The changes and amending of this agreement are valid only if are made in written form and signed by the both contractual parties.

Article 12

It is agreed upon that both parties will first try to settle their disputes by themselves. In case of failure to reach any agreement, the Prime Court in Stip is competent.

Article 13

The agreement is made in 4 (four) identical copies, 2 (two) for each party.

Supplier
PE HS "Zletovica
Director
Stojan Milanov

_____

Customer
JKP "Nikola Karev" Probistip
Director
Milan Terzic

_____

03-210/1
29-02-12

ДОГОВОР

0306-293/2
20.02.12

Склучен помеѓу:

Јавно претпријатие за извршување на водостопански дејности Хидросистем "Злетовица" - Пробиштип, ул."Цветко Тонев" бр.3А, Пробиштип, застапувано од Директор Стојан Миланов, (во понатамошниот текст на договорот: **Испорачател на услугите**) од една страна и

Јавно комунално претпријатие "Никола Карев", ул."Миро Барага" бб, Пробиштип, застапувано од Директорот Милан Терзиќ (во понатамошниот текст на договорот: **Корисник на услугите**) од друга страна.

Член 1

Предмет на овој договор е начин на испорака, количини, динамика, мерење и плаќање на сировата вода за потребите на филтер станицата во Пробиштип, која е во сопственост на корисникот на услугите.

Испорачувањето на сировата вода до филтер станицата ќе одпочне одкако ќе биде завршена изградбата на филтер станицата.

Член 2

Испорачателот се обврзува да сировата вода ја испорачува редовно и континуирано и тоа од Зафатот за водоснабдување на Пробиштип и Злетово преку доводниот цевковод до филтер станицата, која е сопственост на корисникот на услугите.

Испорачателот на услугата се обврзува да врши испорака на сирова вода со квалитет во согласност со Уредбата за класификација на водите (Сл.весник на РМ бр.18/99)

Испорачателот се обврзува секогаш кога ќе има промена во квалитетот на сировата вода веднаш да го извести корисникот на услугите и да ја запре испораката на сирова вода, чиј квалитет не е во согласност со Уребата за класификација на водите (Сл.весник на РМ бр.18/99).

Во случај квалитетот на испорачаната вода да не ги задоволува стандардите согласно Уребата за класификација на водите(Сл.весник на РМ бр.18/99) утврдено врз основа на извршени контроли од страна на лабораторијата на филтер станицата, корисникот на услугата има право да изврши редукција или времен прекин на приемот на сировата вода за што веднаш писмено ќе го извести давателот на услугата.

Член 3

Двете страни се договорија количините на испорачаната сирова вода да се мерат на мерачот на проток кој е на излезната шахта на доводниот цевковод за Пробиштип, а во сопственост на испорачателот.

Месечните количини на испорачана вода ќе се утврдуваат на секој први од наредниот месец за претходниот месец од регистрираните количини од водомерот и тоа записнички од овластени лица од двете договорни страни.

Член 4

Корисникот е должен на испорачателот да му ги пријави вкупните потреби за сирова вода за наредната година, најдоцна до 31 Декември во тековната година. Годишните и месечните требувања ќе бидат во м^3.

Член 5

Корисникот и испорачателот ке имаат право во секое време да извршат увид и контрола на состојбата на протокомерите, моменталниот проток, сумарниот проток.

Корисникот и испорачателот мора меѓу себе да си го овозможат и заеднички да го извршат таквиот увид.

Член 6

Во случај на сушна година и ограничена количина на акумулирана вода, двете договорни страни заеднички ке изработат план за месечно искористување на расположивите количини на вода.

Член 7

Договорните страни се согласни, испорачаната сирова вода за филтер станицата во Пробиштип да се наплаќа согласно Ценовникот за висината на цената на сирова вода за водоснабдување од ЈП ХС "Злетовица" со арх. бр.0201-1787/13 од 23.12.2011 година и Одлуката на Владата на Република Македонија со арх. бр.51-8313/1-11 од 17.01.2012 година за давање на согласност на Ценовникот за висината на цената на сирова вода за водоснабдување од ЈП ХС "Злетовица" (Сл.весник на РМ бр.15/12).

Цената на сирова вода за 1 м^3 која испорачателот ке ја испорачува на корисникот се определува на износ од 3,00 денари без пресметан ДДВ.

Цената на сирова вода за 1 м^3 определена во став 2 од овој член од 01.01.2014 година ке се зголеми за 1,00 денар и ќе изнесува 4,00 денари без пресметан ДДВ.

Цената на сирова вода за 1 м^3 определан во став 3 од овој член од 01.01.2016 година ке се зголеми за 1 денар и ќе изнесува 5,00 денари без пресметан ДДВ.

Цената на сирова вода за 1 м^3 определена во став 4 од овој член ке се зголемува за 1,00 денар секоја наредна година.

Испорачателот и корисникот на услугите се согласни по завршување на изградбата на филтер станицата во Пробиштип и по извршениот технички прием на објектот да се отпочне со испорака на сирова вода.

Член 8

За испорачаната сирова вода испорачателот ке доставува фактури до корисникот на услугите.

Корисникот на услугите се обврзува фактурите да ги плаќа во рок од 45 дена од денот на доставувањето на истите.

Член 9

Во случај на потреба од прекин на водоснабдувањето од една или од друга страна, договорено е двете страни писмено да се известуваат најмалку 48 часа пред потребата од прекин.

Во случај на итни интервенции на цевководот, испорачателот има право да ја запре испораката на сирова вода само со усна најава до корисникот.

Двете страни се обврзуваат за максимална соработка при евентуални дефекти или непредвидени ситуации.

Член 10

Овој договор стапува во сила од денот на потпишување на двете договорни страни, а ќе се применува по извршениот технички прием на објектот.

Член 11

Договорните страни можат да ги дополнат или изменат одредбите од овој договор само спогодбено.

Одредбите од овој договор можат да се изменат или дополнат со склучување договор за изменување и дополнување на основниот договор.

Дополнувањата и измените на овој договор се важечки ако се направени во писмена форма и ако се потпишани од двете договорни страни.

Член 12

Евентуалниот спор ќе се решава спогодбено. Доколку спорот не се реши спогодбено, стварно и месно надлежен суд за решавање на истиот е Основен суд Штип.

Член 13

Овој договор е составен во 4(четири) еднообразни примероци од кои по 2(два) за двете договорни страни.

Испорачател
ЈП ХС "Злетовица"
Директор
Стојан Миланов

Корисник
Јавно комунално претпријатие "Никола Карев "
Милан Терзиќ

PUBLIC ENTERPRISE HYDROSYSTEM ZLETOVICA (PEHZ)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

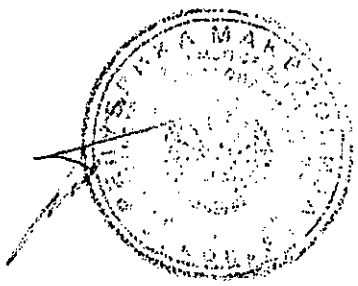
Special Assistance for Project Implementation (SAPI)

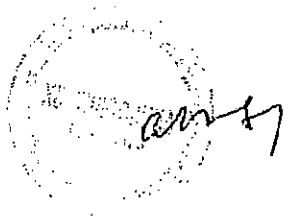
On

Zletovica Water Use Improvement Project

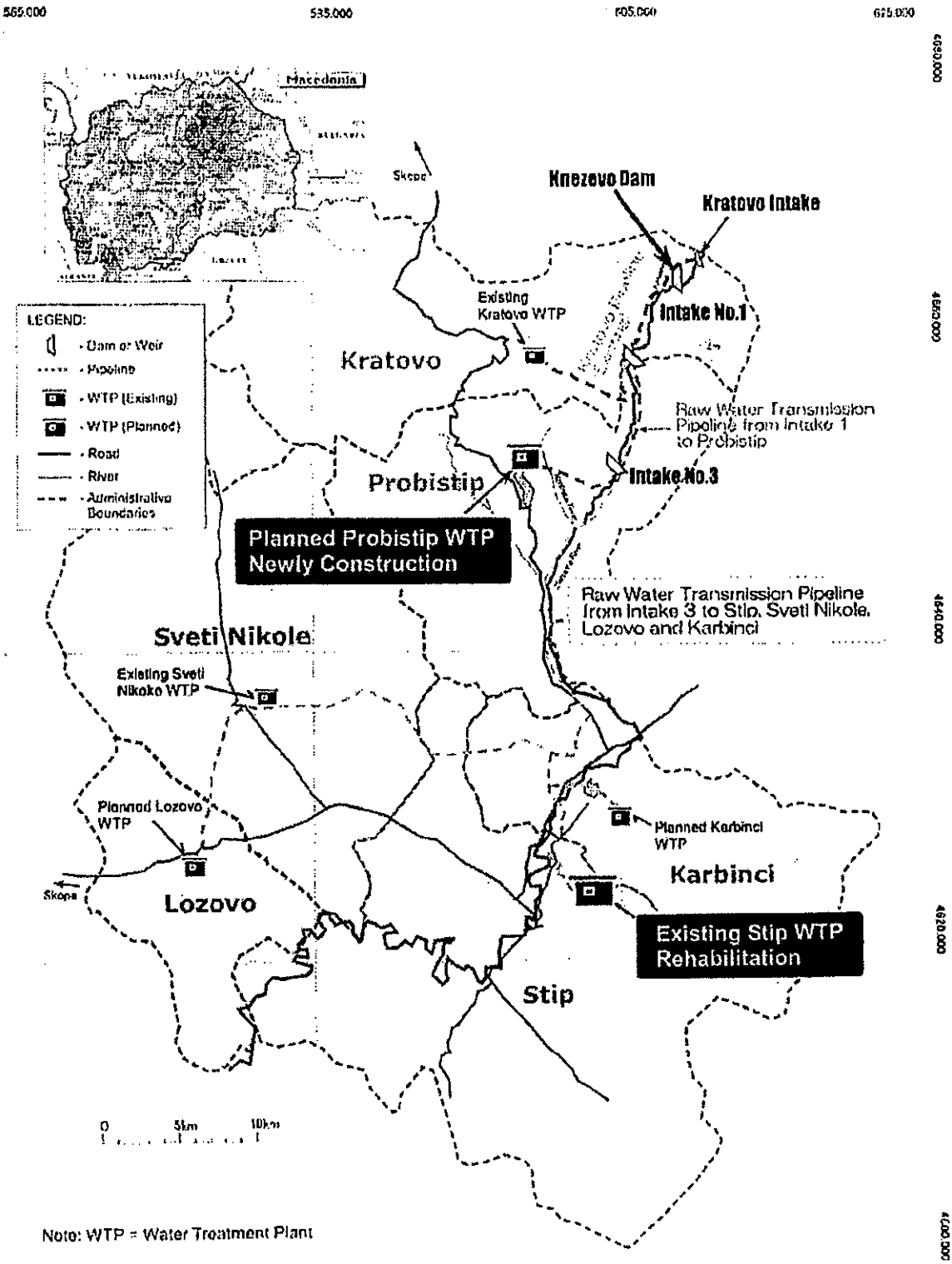
INCEPTION REPORT

April 2012





ORIENTAL CONSULTANTS CO., LTD.


565.000
535.000
605.000
625.000
4660.000
4640.000
4620.000
4600.000
Macedonia
Skopje
Knezevo Dam
Kratovo Intake
Existing Kratovo WTP
Intake No.1
Kratovo
Raw Water Transmission Pipeline from Intake 1 to Probistip
Intake No.3
Probistip
Planned Probistip WTP Newly Construction
Raw Water Transmission Pipeline from Intake 3 to Stip, Sveti Nikole, Lozovo and Karbinci
Sveti Nikole
Existing Sveti Nikole WTP
Planned Lozovo WTP
Lozovo
Skopje
Planned Karbinci WTP
Karbinci
Existing Stip WTP Rehabilitation
Stip
LEGEND:
- Dam or Weir
- Pipeline
- WTP (Existing)
- WTP (Planned)
- Road
- River
- Administrative Boundaries
0
5km
10km
Note: WTP = Water Treatment Plant

Study Area

1. Background

The Zletovica Water Use Improvement Project has been carried out since 2003 in order to supply raw water for six municipalities in the Zletovica river basin in Macedonia through Japanese loan funding, this project hereinafter called "the loan project". The loan project started with phase 1 of the Zletovica river basin development project comprising construction of the multi-purpose Knezevo Dam, intake structures downstream of the dam and transmission pipelines from the intakes to the municipalities. Irrigation and hydropower projects will be implemented in phases 2 and 3 in the future.

Water treatment plants were supposed to have been constructed by the Macedonian side with its own budget, but most of the municipalities were not able to construct the water treatment plants due to budgetary constraints Recently however, agreements have been made to rehabilitate the Stip water treatment plant and to construct the Probistip water treatment plant within the on-going loan project.

Some issues have been observed during the on-going loan project: 1) the implementation agency, implementation unit and contractors are not familiar with international regulations or manners and 2) water treatment plant (WTP) constructions for the municipalities have been delayed due to difficulty in getting consensus among the related stakeholders such as the "Ministry of Finance", the "Ministry of Agriculture, Forestry and Water Economy", the "Administration for Water Economy under the Ministry of Agriculture, Forestry and Water Economy", " Public Enterprise Hydrosystem Zletovica (PEHZ)," and municipalities.

There is another constraint on the time schedule because the loan period will expire in January 2013. The two WTP rehabilitation and construction works require effective coordination with the stakeholders on solving unknown technical and administrative issues to complete the loan project.

This "Special Assistance for Project Implementation (SAPI)" Project, which is JICA's project for achieving smooth implementation of the loan project, hereinafter called "the SAPI Project" is going to start assisting and supporting the "Implementation Agency" : Administration for Water Economy under the Ministry of Agriculture, Forestry and Water Economy and the "Implementation Unit": Public Enterprise Hydrosystem Zletovica (PEHZ) for the SAPI Project, to complete the WTP constructions on schedule, while communicating closely with the Ministry of Finance in Macedonia, Ministry of Agriculture, Forestry and Water Economy, the Ministry of Transportation and Communication, the Municipality of Stip, and the Municipality of Probistip.

2. Objectives

The objectives of the SAPI Project are to realize and improve the efficiency of the loan project on rehabilitating and constructing the WTPs by assisting and supporting the Implementation Agency and the Implementation Unit to achieve smooth construction through analyzing the present condition of construction and procuring the construction materials and equipment.

In the SAPI Project, regarding concrete works, first, the SAPI consultant, hereinafter called "the Consultant", shall

study and understand the role and the responsibility of the stakeholders of the Administration for Water Economy under the Ministry of Agriculture, Forestry and Water Economy as the the Implementation Agency, Public Enterprise Hydrosystem Zletovica as the Implementation Unit, the Ministry of Finance in Macedonia, Ministry of Agriculture, Forestry and Water Economy, the Ministry of Transportation and Communication, the Municipality of Stip and the Municipality of Probistip as the related organizations and study any related information. Secondly, the Consultant shall assist and support the Implementation Agency and the Implementaion Unit on preparing the basic design, cost estimation, materials required for whichever tender or variation order (VO), and assist on negotiation of contract and construction supervision through coordination with the related organizations. Finally, rehabilitation and construction of the WTPs will be realized on schedule.

3. Project Area

Stip Municipality and Probistip Municipality in the Zletovica Region, Macedonia

4. Counterparts

Administration for Water Economy under the Ministry of Agriculture, Forestry and Water Economy as the the Implementation Agency

Public Enterprise Hydrosystem Zletovica (PEHZ) as the Implementation Unit

5. Points of Concern in the SAPI Project

(1) A Japanese consultant has already been employed on the loan project under the implementation agency and supervising organization, the Ministry of Agriculture, Forestry and Water Economy, this consultant hereinafter called "the loan consultant". The Consultant shall carry out the study while communicating closely with the loan consultant.

(2) It is necessary to ensure proper coordination to maintain smooth implementation as these water treatment construction works have many stakeholders. As the loan project expires in January 2013, it is important to avoid any more delays and finish the loan projects on time. Therefore, the Consultant shall assist and support the stakeholders on daily administration while closely coordinating with them.

6. Study Components and Procedure

6.1 Preparatory Work in Japan

[1] Data collection and analysis of relevant information and similar projects

The Consultant shall study the present available documents and related information before starting the work.

[2] Preparation of Draft Inception Report

The Consultant shall prepare the Draft Inception Report comprising the following from a to g items.

a Background of the SAPI Project
b Objectives of the SAPI Project
c Points of Concern in the SAPI Project
d Study Components and Procedure
e Work Schedule
f Consultant Team Members, Roles and Assignment Schedule
g Organizations for the SAPI Project

[3] Revision of the Draft Inception Report

The Consultant shall revise the Draft Inception Report based on discussion with JICA, Middle East and Europe Department.

6.2 1st Field Work

[4] Completion of the Inception Report based on discussion with Macedonian Side

The Consultant shall explain the Draft Inception Report prepared in Japan to the Implementation Agency and the Implementation Unit. The Consultant shall revise it based on discussion if necessary and get consensus with the related parties to accept the revised document as the Inception Report.

[5] Data collection and analysis of the relevant information

The Consultant shall collect the following from a to c information and analyze the present issues in cooperation with the Implementation Agency and the Implementation Unit.

a Environmental standards, wastewater discharge standards and any other laws and regulations on water treatment work in Macedonia
b Present condition at the two sites with site reconnaissance and present WTP conditions and information for reviewing the design, construction methods and cost estimations
c Information for analyzing the institution of the Implementation Agency and the Implementation Unit on WTP construction works and for analyzing the case studies on existing WTP constructions

【6】 Assistance on construction procedure

The Consultant shall assist the Implementation Agency and the Implementation Unit carrying out the tender process or VO process on the following from a to c, based on the Inception Report agreed on through coordination with the related organizations.

a Review of the basic design regarding specifications, quantity, cost estimation for constructing the WTPs and procurement of the equipment

b Preparation of materials required for whichever tender documents or VO such as the basic design report, cost estimation and contract documents

c Tender procedures (contract style, contractor selection method, evaluation methods, public announcements, etc.) or VO procedure (contract style, evaluation methods, etc)

6.3 1st Work in Japan

【7】 Reporting the 1st Field Work

The Consultant shall analyze the present issues and report the results to JICA, Middle East and Europe Department and JICA, Balkan office based on the 1st Field Work.

【8】 Assistance on construction procedure

The Consultant shall assist the Implementation Agency and the Implementation Unit to promote a smooth tender or VO process through effective communication and coordination with the related organizations.

6.4 2nd Field Work

【9】 Assistance on contract with a contractor

The Consultant shall assist the Implementation Agency and the Implementation Unit on the contract process and negotiations including confirmation of the contract conditions, work schedule and construction methods, on constructing the WTPs through coordination with the stakeholders.

【10】 Assistance on construction and equipment procurement

The Consultant shall assist the Implementation Agency and the Implementation Unit on supervising the WTP constructions and the procurement of equipment to the company awarded the construction work, hereinafter referred to as "the Contractor", on the following from a to c items through coordination with the related organizations.

a Review of technical examination carried out by the Implementation Agency and the Implementation Unit on WTP detail design prepared by the Contractor

b Assistance to the Implementation Agency and the Implementation Unit on supervising the Contractor on construction and progress management

c Assistance to the Implementation Agency and the Implementation Unit on supervising the Contractor on procurement work such as equipment procurement, examination at the procurement, installation and quality / performance testing

【11】 Adjustment for preventing delay if necessary

When the loan project is delayed or looks to be delayed from the original schedule, the Consultant, sharing detailed information with the Implementation Agency and the Implementation Unit, shall report the status of the loan project to JICA, Middle East and Europe Department and JICA, Balkan Office, and shall have meetings with the Implementation Agency, the Implementation Unit and the related organizations to determine countermeasures and the Consultant shall advise and promote the Implementation Agency and the Implementation Unit to execute them.

6.5 2nd Work in Japan

【12】 Reporting the 2nd Field Work

The Consultant shall analyze the present issues and report them to JICA, Middle East and Europe Department and the Balkan Office based on the 2nd Field Work.

【13】 Preparation of 3rd Field Work plan

The Consultant shall prepare a plan for the 3rd Field Work and report it to JICA, Middle East and Europe Department based on the results of the analysis as mentioned above in item 【12】.

6.6 3rd Field Work

【14】 Assistance on construction and equipment procurement

The Consultant shall assist the Implementation Agency and the Implementation Unit on supervising the WTP constructions and the procurement of equipment to the Contractor on the following from a to b items through coordination with the related organizations.

a Assistance to the Implementation Agency and the Implementation Unit on supervising the Contractor on construction and progress management

b Assistance to the Implementation Agency and the Implementation Unit on supervising the Contractor on procurement work such as equipment procurement, examination at the procurement, installation and quality / performance testing.

【15】 Adjustment for preventing delay if necessary

When the loan project is delayed or it looks to be delayed from the original schedule, the Consultant, sharing detailed information with the Implementation Agency and the Implementation Unit shall report the status of the loan project to JICA, Middle East and Europe Department and JICA, Balkan Office, and shall have meetings with

the Implementation Agency, the Implementation Unit and the related organizations to determine the countermeasures and the Consultant shall advise and promote the Implementation Agency and the Implementation Unit to execute them.

6.7 3rd Work in Japan

【16】 Reporting the 3rd Field Work

The Consultant shall analyze the present issues and report them to JICA, Middle East and Europe Department and the Balkan Office based on the 3rd Field Work.

【17】 Preparation of Draft Interim Report

The Consultant shall prepare a Draft Interim Report comprising the following items from a to e, based on the above-mentioned analysis.

a Evaluation of the tender or VO with the result and issues
b Construction progress of the Stip and Probistip WTPs, future plan and variation of the loan project components
c Components of technical assistance carried out during past work
d Capacity development status of the Implementation Agency, the Implementation Unit and related organizations
e Letters, memorandums or other documents exchanged with the Implementation Agency, the Implementation Unit and the related organizations

【18】 Revision of the Draft Interim Report

The Consultant shall revise and complete the Draft Interim Report based on discussion with JICA, Middle East and Europe Department.

6.8 4th Field Work

【19】 Completion of the Interim Report based on the discussion with Macedonian Side

The Consultant shall explain the Draft Interim Report to the Implementation Agency and the Implementation Unit, and shall revise and complete it based on discussion with them if necessary. The Consultant shall get consensus on the Interim Report from the related parties.

【20】 Assistance on construction and equipment procurement

The Consultant shall assist the Implementation Agency and the Implementation Unit in supervising WTP constructions and procurement of equipment to the Contractor on the following a to f items through coordination with the related organizations.

a Assistance to the Implementation Agency and the Implementation Unit on supervising the Contractor on the construction and progress management through coordination with the related organizations

b Assistance to the Implementation Agency and the Implementation Unit on supervising the Contractor on the procurement work such as equipment procurement, examination at the procurement, installation and quality / performance testing

c Assistance to the Implementation Agency and the Implementation Unit on supervising the Contractor on the completion test and collecting the completion certification through coordination with the related organizations

d Assistance to the Implementation Agency and the Implementation Unit on preparing the Technical Acceptance (TA), other documents required by Macedonian regulation and submitting them to the Ministry of Transportation and Communication or municipalities to get approval for the operation.

e Assistance to the Implementation Agency and the Implementation Unit on paying the Contractor considering the defect liability period and bond for work required after the SAPI Project and the loan project period

f Assistance to the Implementation Agency and the Implementation Unit on management during the defect liability period and supervising the Contractor on the defects for work after the SAPI Project and the loan project period

【21】 Adjustment for preventing delay if necessary

When the loan project is delayed or it looks to be delayed from the original schedule, the Consultant, sharing detailed information with the Implementation Agency and the Implementation Unit, shall report the status of the loan project to JICA, Middle East and Europe Department and JICA Balkan Office, and shall have meetings with the Implementation Agency, the Implementation Unit and the related organizations to determine the countermeasures and the Consultant shall advise and promote the Implementation Agency and the Implementation Unit to execute them.

6.9 Final Work in Japan

【22】 Preparation of Draft Final Report

The Consultant shall prepare the Draft Final Report comprising whole work items, progress, raised issues, taken countermeasures and required future action based on the past field works.

【23】 Submission of Final Report

The Consultant shall revise the Draft Final Report based on discussion with JICA, Middle East and Europe Department and on comments by the Implementation Agency and the Implementation Unit, and complete it as the Final Report and submit it to JICA.

7. Outputs

The Consultant shall submit the following reports to JICA

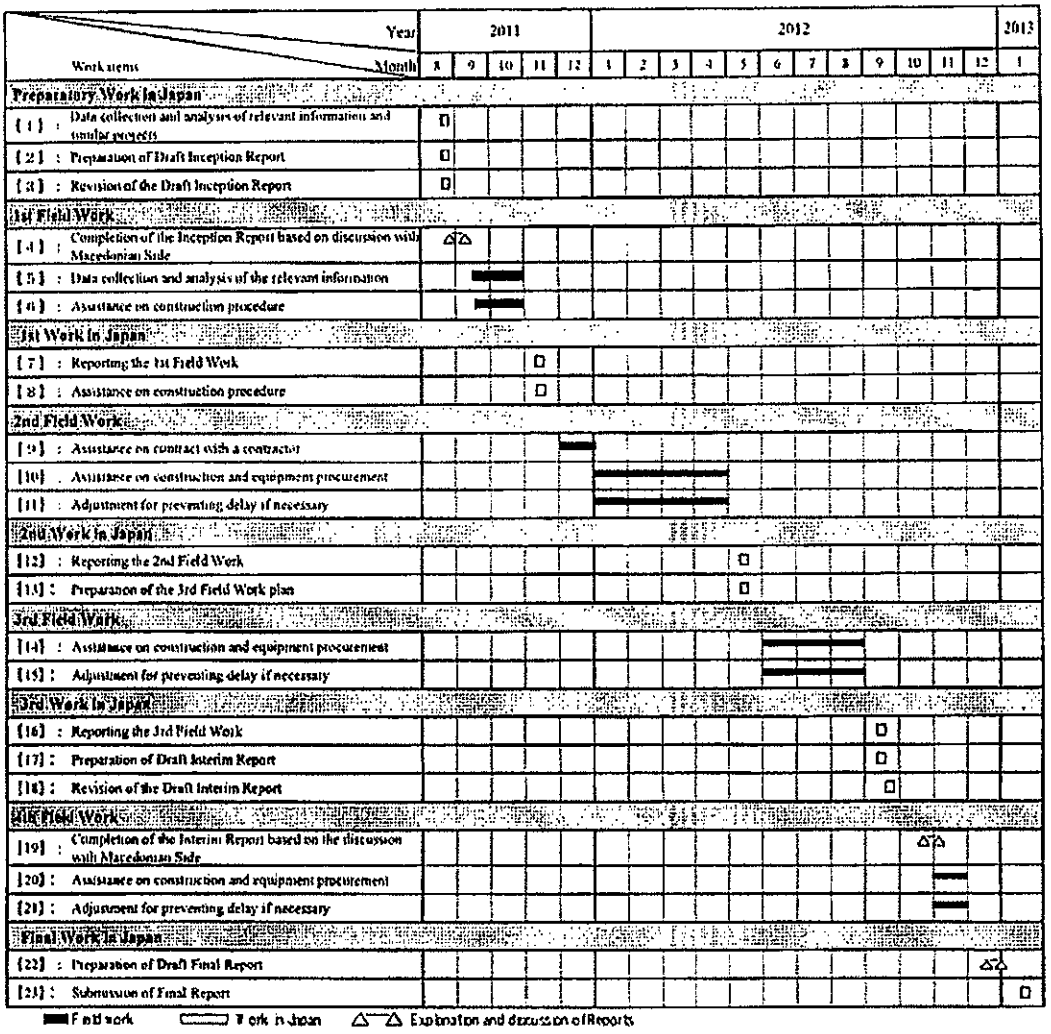
As of August 2011

Report	Components	Term
Inception Report	• Objectives • Study components and procedure • Work schedule • Organization • Other	September, 2011
Interim Report	• Evaluation of the tender or VO with the result and issues • Construction progress of the Slip and Probistip WTPs, future plan and variation of the loan project components • Components of technical assistance carried out during past work • Capacity development status of the Implementation Agency and the related organizations • Letters, memorandums or other documents exchanged with the Implementation Agency and the related organizations • Others	September, 2012
Final Report	Whole work items	February, 2013
Collected information / materials	Collected information / materials with a list	February, 2013

8. Work Schedule

As of August 2011

Work schedule for VO is shown below.



9. Consultant team members, roles and assignment schedule

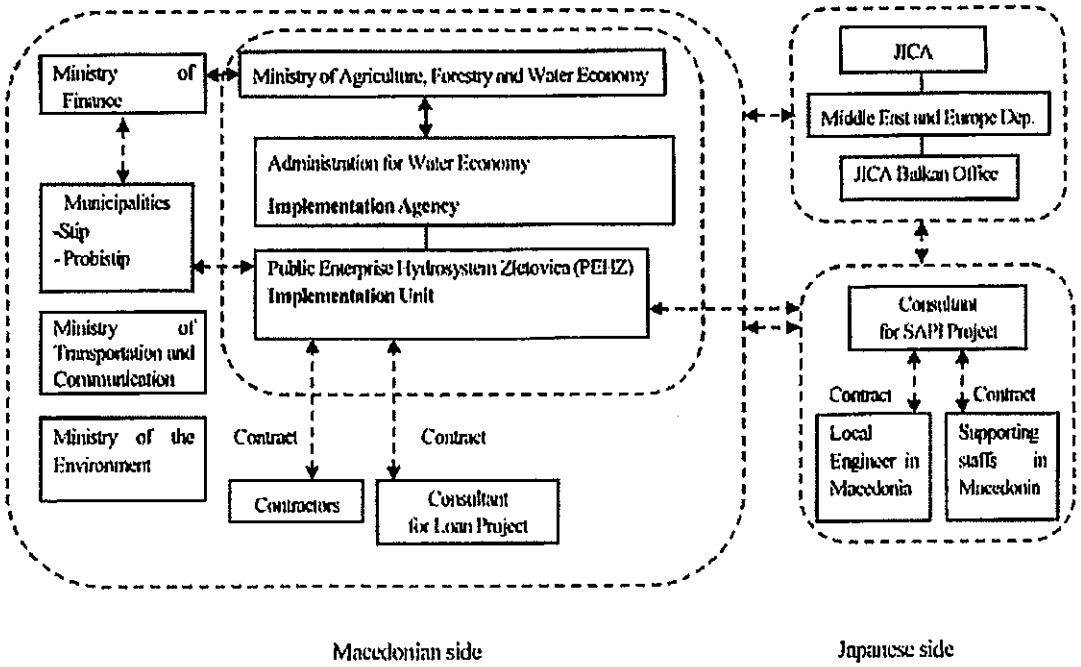
Consultant team members, roles and assignment schedule are shown below.

As of August 2011

Location	Task	Person in charge	2011 8	9	10	11	12	2012 1	2	3	4	5	6	7	8	9	10	11	12	2013 1
Field Work	Project Manager / Water Treatment Engineer	Kunio Kimata																		
	Deputy Project Manager / Construction Engineer	Yuichi Hashimoto																		
	Mechanical / Electrical Engineer	Hiroshi Omura																		
Work in Japan	Project Manager / Water Treatment Engineer	Kunio Kimata																		
	Deputy Project Manager / Construction Engineer	Yuichi Hashimoto																		
	Mechanical / Electrical Engineer	Hiroshi Omura																		
Report			▽													▽			▽	▽

10. Organizations for the SAPI Project

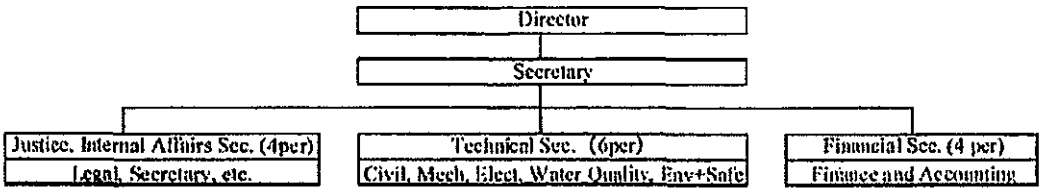
Relationship of the organizations for the SAPI Project is as follows:



Rehabilitation and construction of the WTPs will be carried out as a part of the loan project. The Implementation Agency for the SAPI Project will be the Administration for Water Economy under the Ministry of Agriculture, Forestry and Water Economy, and the Implementation Unit will be the Public Enterprise Hydrosystem Zletovica (PEHZ), which is under the Implementation Agency of the Administration for Water Economy under the Ministry of Agriculture, Forestry and Water Economy. The completed WTPs will be handed over to the Municipalities, Stip and Probistip, and they are going to be operated and maintained by the public enterprise (P.E.) of each municipality as follows:

- P.E. ISAR for Stip Municipality
- P.E. Nikola Kalev for Probistip Municipality

Organization of the Public Enterprise Hydrosystem Zletovica (PEHZ) as the Implementation Unit and the counterpart on the SAPI Project is as follows:



The "Ministry of Finance", Macedonia is in charge of borrowing fund and allocating the fund for the loan project and is in charge of refunding the loan fund to the Japanese Government.

The "Ministry of Transportation and Communication" is in charge of construction and administration.

The "Ministry of Environment" is in charge of protecting the environment from effects caused by construction and operation.

The "Consultant for Loan Project", hereinbefore called the loan consultant, is now supervising the loan project.

The "Consultant for SAPI Project", hereinbefore and after called the Consultant, Oriental Consultants (OC), is going to assist the Implementation Agency and the Implementation Unit in completing the construction of WTPs on schedule in accordance with contracts that will be exchanged and with the Macedonian laws and regulations. OC will have supports from the head office in Tokyo if necessary. The Consultant shall employ local engineers and supporting staffs to assist with data collection, support the Implementation Agency and the Implementation Unit and communicate with the stakeholders while the Japanese consultants of the Consultant are out of Macedonia.

"JICA, Middle East and Europe Dep., JICA, Balkan Office" is the Client of the Consultant on the SAPI Project and is the responsible agency for the loan project as the representative of the Japanese Government.

Општина Пробиштип
Број 0711- 757/1
23.04.2012година
Пробиштип

Врз основа на член 29 од Статутот на општина Пробиштип (Службен Гласник на општина Пробиштип бр.4/2005), Претседателот на Комисијата за финансии, буџет и ЈЕР, го донесе следното:

РЕШЕНИЕ
За свикување на Комисијата за финансии, буџет и ЈЕР

Во врска со закажаната 42-та седница на Советот на општина Пробиштип, Комисијата за финансии, буџет и ЈЕР ќе одржи седница на ден *26.04.2012 година* ***(четврток) со почеток во 14,00 часот*** во просториите на општина Пробиштип, следниот:

1. Одлука за избор на технологија за пречистување на вода за пиење во пречистителна станица (филтер станица) во Пробиштип ; 15 ЗА 15 AGREED
2. Одлука за избор на изведувач на работите на пречистителна станица во Пробиштип по пат на Варијација; 9 ЗА , 6 Воздржани ; 9 AGREED 6 Abstained
3. Извештај за остварување на Програмата за уредување на градежното земјиште на територијата на Општина пробиштип за 2011година;
4. Извештај за остварување на Програмата за изградба и одржување на локални патишта и улици во Општина Пробиштип за 2011година;
5. Извештај за остварување на Програмата за изградба и одржување на улично осветлување на територијата на Општина Пробиштип за 2011година;
6. Извештај за остварување на Програмата за урбанистичко планирање и за локален економски развој на Општина Пробиштип за 2011година;
7. Извештај за состојбата со спортовите на територијата на Општина Пробиштип за 2011година и реализацијата на Програмата
8. Одлука за измена на распоредот на средствата во Буџетот на Општина Пробиштип за 2012година
9. Кварталеи извештај за извршување на Буџетот на општина Пробиштип за период од 01.01.2012година до 31.03.2012година

Комисија за финансии, буџет и ЈЕР
Претседател
Ранко Давидков с.р.

Municipality of Probistip
Number 0711-757/1
23.04.2012
Probistip

Based on article 29 of the Statute of Probistip Municipality (Official Gazette of Probistip Municipality No.4/2005), the chairman of Committee for finance, budget and LER, have made the following:

DECISION
On calling of Committee for finance, budget and LER (local economic development)

With reference to appointed 42-nd session of the Council of municipality of Probistip, the Committee for finance, budget and LER shall have a meeting on 26.04.2012 (Thursday) at 14:00 o'clock in the premises of Probistip municipality, with the following agenda:

1. Decision on selection of technology for purification of drinking water for water treatment plant of Probistip;
2. Decision on selection of contractor of works on water treatment plant in Probistip by Variation;
3. Report on implementation of programme of landscaping for construction
4. Report on implementation of programme for construction and maintenance of local roads and streets in Probistip municipality in 2011
5. Report on implementation of programme for installation and maintenance of street lightning in Probistip municipality in 2011
6. Report on implementation of programme for urban planning and local economic development of Probistip municipality in 2011
7. Report on sports condition in Probistip municipality and implementation of programme
8. Decision on change of schedule of funds in the budget of Probistip municipality for 2012
9. Quarterly report of budget implementation of Probistip municipality for period 01.01.2012 to 31.03.2012

Committee for finance, budget and LER
Chairman
Ranko Davitkov

TECHNICAL SPECIFIATATION FOR WATER TREATMENT PLANT of PROBISTIP (DRAFT FINAL)

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. This section covers the requirements for design, supply, installing, adjusting, and testing of the water treatment plant at the location of the planned Probistip water treatment plant (WTP).

B. The design shall include basic design, the review of basic design and detail design.

C. All works shall be carried out in accordance with the applicable codes and standards, manufacturer's recommendations and the relevant specifications.

D. The Contractor shall furnish all labors, plants, materials, appliances necessary for the complete installation of the work specified herein. The specification is intended to provide the outlines of the required installation, but is not intended to include all details of the design and construction.

E. The Contractor shall adopt his proprietary techniques to guarantee the safety and performance of the system in accordance with the concepts and criteria set by the specifications. The Contractor must employ staff experiences in the design and construction of the water treatment plant.

F. The Contractor shall design the water treatment plant for ease in operation and maintenance and to be energy efficient as well as less operation cost.

G. The work throughout shall be executed in the best and most thorough manner to the satisfaction to Engineer and Employer.

H. The Contractor shall assume responsibility and shall provide the services of a qualified engineer to supervise the complete installation of equipment who shall be available for conducting the final acceptance test.

1.2 SCOPE OF WORK

A. The works to be executed under the Contract for the water treatment plant include the design, execution, completion of the water treatment system with related civil, architectural, structural, building mechanical/electrical works and remedy of any defects therein, and all to meet the requirements specified herein.

B. Furnish and delivery to the site and install the complete water treatment plant with neutralization of wastewater from ultrafiltration including all equipment, valves and piping, electrical, instrumentation and control works, and all necessary accessories and incidents for the complete system.

C. Wastewater buffer shall be designed and procured, and wastewater treatment facility shall be designed in accordance with Macedonian law.

D. Portable laboratory instruments for fast chemical tests including workbench and sink, store,

toilet, emergency shower with eye-washing, and drain at chemical room, access road, parking space for the vehicle, generator, firefighting equipment such as fire extinguisher and / or fire hydrant using raw water and all other necessary systems according to the Macedonian laws, codes and standards shall be provided in the plant area.

E. Building for installing the equipment and accessories shall be constructed above the existing 1,500m3 capacity reservoir or around it (besides the existing building).

F. Connect water ways between the reservoir and the newly constructed water treatment plant.

G. Pipe connection work from the existing HSZ connection manhole to the new WTP shall be included.

H. Discharge wastewater system shall be as follows:

1. Connection work from the new WTP to the existing Indomineral pipe shall be included.
2. The Contractor shall design an alternative discharge system that is from the new WTP to the existing sewers.

I. The present water supply system utilizing raw water supplied from Rativica pumping station and booster pumping station for villages located upper sites will be continued to work.

J. The treatment system, applying UF system, shall be automatic operation except chemical preparation, maintenance and etc. When water quality of raw water at intake 1 is less than 100 in NTU, the water is supplied to the WTP for producing drinking water. When the water quality of the raw water at intake 1 is over 100 in NTU, the supply shall be stopped by automatically closing the supply control valve installed at the intake 1. Rativica pumping station is utilized for supplying raw water to the WTP while the turbidity is over 100 in NTU. The automatic operation with the Rativica pumping station shall be implemented next year after the rehabilitation of the Rativica pumping station was completed. Automatic system taking the raw water from the two water sources shall be ready in this scope with manual operation.

K. Basic design shall be prepared under the Contractor's responsibility and the review of the basic design shall be carried out under the Contractor's responsibility..

L. Preparation of detail design including detail drawings, shop drawings and design calculations for the water treatment plant including selection of the mechanical and electrical equipment capacities, design of tank dimensions, piping and all accessories to comply with the concepts and criteria set by the manufacturer's recommendations and the specification.

M. As-built drawing and as-built design shall be prepared by the Contractor.

N. Electrical and control works for the water treatment plant shall include the motor control panel (MCP), remote control switches, meters and instruments, motor controllers and starters, wires and cables, conduits, cable trays, relays, programmable logic controllers (PLC), and other necessary accessories. The MCP shall have interface for connection to the SCADA.

O. Prepare corrosion protection and painting of all equipment and piping including all exposed and embedded materials.

P. Provide complete freeze protection of the equipment, vessels, tanks, water pipes and etc where required.

Q. Supply instruments for fast chemical tests, workbench with sink, glassware and testing chemicals.

R. Supply and furnish the office equipment such as desks, chairs, shelves, laptop computers.

S. Conduct the complete testing, adjusting and commissioning of the entire water treatment plant, including supply of instruments for operation and testing, and submission of the reports.

T. Provide list of spare parts, list of consumables and list of lubricants for the two years operation after taking over for approval of Engineer.

U. Conduct the training of the employer's personnel for the operation and maintenance during the construction.

1.3. EXTENT OF WORK AND INTERFACE

A. Existing power supply system from the existing transformer station to the booster pumping station shall be maintained in function. The existing transformer shall be utilized for the new WTP. Since the existing transformer is old, it shall be tested and rehabilitated and be added a new circuit breaker for the new WTP as required by Probistip Municipality.

B. All power supply work required for operating the water treatment plant shall be included. All equipment, components, controls which requires power supply shall be designed 380/220V, 50Hz power supply system.

C. Electrical works required for the building and plant shall be included as follows.

3. Power supply feeder from the existing transformer to a new main low-voltage switchboard (MLVS) installed in the new WTP
4. Emergency generator system including automatic/manual transfer switch and fuel storage tank
5. Uninterruptible Power Supply (UPS) system for PLC
6. Power distribution system including all power supply cable works to local MCP and Distribution Board (DB) from the MLVS
7. Motor control system including all interlock and interface to local SCADA system of water treatment plant.
8. Supervisory Control and Data Acquisition local (SCADA) system including all hardware and software
9. Lighting and socket outlet system including panic light
10. Voice telecommunication and data communication system (TEL & LAN)
11. Closed Circuit Television (CCTV) system
12. Access Control (ACC) system
13. Fire Alarm and Detection system
14. Lightning protection and grounding system
15. Exterior lighting system

D. Heating, Ventilation and Air-Conditioning (HVAC) system required for the building and plant shall be included.

E. Plumbing system for the toilet and firefighting composing fire hydrant required for the

building shall be included.

F. Pneumatic control system for plant valve control and operation shall be included.

G. A connection with the existing HSZ connection manhole to the newly constructed water treatment plant shall be included in this work. Installing valve and connecting pipes as bypass to maintain the present water flow shall be included in the new WTP building.

H. The present potential of water flow and pressure at the HSZ connection manhole will be provided to the Contractor.

PART 2 – APPLICABLE DOCUMENTS

2.1 CODES, STANDARDS AND OTHER REFERENCES

A. The following codes, standards, and others shall be referred to the design, construction of the water treatment plant.

1. Drinking Water Standard (Macedonia) No 46/2008
2. Macedonian National Standard MKS
3. Certificate of European (CE)
4. European Standards (EN)
5. International electrical standards (IEC)
6. International Organization for Standardization (ISO)
7. German industrial standards (DIN)
8. Any other internationally recognized codes and standards

PART 3 - REQUIREMENTS

3.1 GENERAL

A. The Contractor shall himself make all necessary independent investigations and studies for preparing the basic design of the water treatment system, including all foundations, structures, buildings and site development meets with the requirements of the Contract and is suitable and adequate for the purpose.

B. The Contractor shall develop the detail design based on the requirements of the specification and drawings and execute the complete works as required.

3.2 PERFORMANCE

A. The present water work, receiving raw water from Rativica pumping station and supply water to the municipality shall be maintained even after the new water treatment plant was completed.

B. The water treatment plant shall be able to supply treated water of 6480 m^3 daily. The followings are the basic design conditions of water treatment plant.

Daily treated water supply capacity on condition that the inlet row water turbidity is less than 50 NTU.	:	6,480 m^3/day
	:	270 m^3/hour

: 4,500L/min
: 75L/sec (see Note hereunder)

Note:

(1) On condition that the inlet water turbidity is less than 50 NTU, the treated water supply capacity shall be 75 L/sec or more.
(2) On condition that the inlet water turbidity is more than 50 till 100 NTU, the treated water supply capacity shall be 65 L/sec or more.

C. Raw water quality supplied from intake 1 is described hereunder.

Item	Design figure for water treatment			Design figures for sludge treatment OM cost
	Adoption for OM cost	Min	Max	
Turbidity (NTU)	5.5	3	1000	22
pH	7.5	6	9	7.5
Alkalinity (mg/L as CaCO3)	30	30	62.5	30

D. The water quality to be supplied from the water treatment plant shall meet the requirements of the Macedonian Standard 46/2008, some of major items of the water quality are described hereunder:

Parameter	Maximum allowed values (MAV)	Unit	Note
Aluminum	0.2	mg/L	
Ammonium	0.50	mg/L	
Color	20	mg/l Pt/Co scale	Acceptable for consumers
Clostridium perfringens (including spores)	0	number/100 mL	
Electro-conductivity	1000	μ Scm-1 at 20°C	
Chlorides	250	mg/L	
Coliform bacteria	0	number /100 mL	
pH-value	6.5-9.5	pH units	
Manganese	0.05	mg/L	
Odor	-	-	Acceptable for consumers
Turbidity	1.0	NTU units	
Sodium	200	mg/L	
Consumption of Kmn04	8.0	mg/L	
Taste	-	-	Acceptable for consumers
Sulfate	250	mg/L	
Iron	0.2	mg/L	

Source: Macedonian Standard (Official Gazette of the Republic of Macedonia" No. 46 on 07.04.2008) Drinking Water Standards (Extraction)

Chemical pollution: The proposed technology or this UF system will not be capable of removing any chemicals pollution if the inlet water is polluted by it.

E. The plant shall be 24 hours a day, all year round continuous operation and fully automatic operation unless otherwise specified or indicated.

F. The water treatment plant shall be operated based on the existing reservoir water level.

G. The equipment such as backwash pumps, air-compressors and neutralization shall be

provided with hot back-up unit to ensure the system reliability. If the duty is one unit, the back-up is 100%, so the total will be two units. The one (1) duty and one (1) standby unit shall be automatically altered once one unit stops the operation, that operation equalizes each equipment running time. For dosing pumps, one (1) pump for each capacity shall be provided as spare.

H. Wastewater shall be neutralized before the discharged not to affect to the environment, all required equipment and facilities shall be constructed.

3.3 DESIGN REQUIREMENTS

A. The design shall ensure simple and efficient operation and maintenance with high economy and low operation and maintenance costs. The Contractor, in the design and execution of the works, shall include and provide all necessary additional or auxiliary equipment and materials incidental to the works to ensure that overall performance standards are complied with and to ensure that complete and correctly functioning plant and system are provided.

B. Any equipment, material, component or item for which the design is under the responsibility of the Contractor, shall be compatible with its required function and performance of each system as a whole. Any item of equipment, material or component thereof, which has been previously approved, may not be accepted if the system of which it is part does not give the required performance. It is the Contractor's responsibility to ensure the adequate functioning of entire system.

C. Systems, equipment and facilities to be designed by the Contractor shall be complete operating system, including any part, material or process which is essential to this requirement, whether or not specifically called for, detailed or defined, and shall be entirely suitable for the purpose intended and of high quality consistent with the specified requirements. Each system shall be designed to perform the required service with maximum reliability.

D. Present target design capacity is 75L/sec, but future expansion of the water treatment plant of 100 L/sec, shall be consider in the design.

E. The design, dimension and materials of all parts shall be such that they will not suffer damage under the most extreme operating conditions at the designed limits, regarding pressure and turbidity nor result in deflections and vibration that may adversely affect the structure integrity or the operation of the plant or equipment.

F. The Contractor shall design and construct the water treatment system to meet the requirements of the Contract and to the approval of Engineer. Approval by Engineer shall not relieve the Contractor from any of his responsibilities under the Contract.

G. The Contractor shall investigate the strength of the existing reservoir to install all equipment of the UF system on the reservoir except generator, and design and construct a building to install the water treatment equipment.

H. The Contractor shall complete the basic design with review within a maximum period of one and half (1.5) months from the Commencement Date. The complete design with all supporting calculations, documents, drawings and other relevant data shall be compiled and bound into one Contractor's Document entitled "Contractor's Final Design". The Contractor's final design document shall be submitted for the review and approval of

Engineer. Construction, procurement or manufacturing shall not commence prior to such approval being received unless otherwise expressively agreed by Engineer.

I. The design shall conform to the best and most up-to-date international engineering practice. Plant, equipment, materials and systems including wastewater management facilities / equipment shall be designed to take account of standardization and interchangeability of the components and parts.

J. The design shall include the requirements of all relevant and prevailing national and local statutory, by-lows and orders. The Contractor shall be responsible for satisfying the requirements of relevant official authorities in relation to the design and shall obtain all necessary permits, and approval of the relevant authorities.

K. All of the works shall be designed using metric system

L. All plant shall be designed for ease of access and simplicity of installation, adjustment, operation, maintenance and repair.

M. Equipment to be provided in duplicate, to function as working and standby units shall be designed, so far as possible, to allow either unit to be set up and tested independently of the other unit, to ensure that the equipment are in working order.

N. Plant shall be designed with integral metering sufficient to enable all normal operating adjustments without use of the external test equipment.

O. An automatic shutdown system of the plant and the manual emergency stop bottom on the motor control panel shall be provided in order to prevent an overflow in the case of any of the water levels exceed the high water alarm level. Inlet motor valve shall be closed automatically when the water level of the reservoir is over the high water alarm level. Opening of the valves are automatically adjusted based on the flow and pressure.

P. Outdoor water mains will be buried under the freeze line, the connection pipes between the underground main and water treatment plant equipment or underground concrete tanks shall carefully be studied against the freeze of water in the pipe. The Contractor shall provide necessary measures such as thermal insulation, heat trace, etc., to avoid the destruction of pipe caused by the freeze of water where required.

3.4 PHYSICAL CHARACTERISTIC

Omitted

3.5 ENVIRONMENTAL REQUIREMENTS

A. All plant, materials and systems shall be designed to operate in severe cold climate, with no degradation in performance, over the design life, due to climatic conditions. The works shall be designed to operate efficiently under the following climate conditions:

1.	Ambient outside air temperature	:	Minus 18 °C to +35 °C
2.	Ambient outside relative humidity	:	35% to 90%

B. The plant room will be provided with the heating system; however, the Contractor shall carefully study and analyze the possibility of freeze water in the tanks, vessels and piping systems. It is the Contractor's responsibility to provide the necessary measures such as

heat-pipe, heat-trace, electric heater, etc., to avoid the freeze of water.
The room conditions shall be maintained as follows:

1.	Chemical storage area	:	Not less than +15 °C in Winter
2.	Filtration area	:	+5 °C to +10 °C in Winter
3.	Ditto	:	Not more than +40 °C in Summer

3.6 MATERIALS

3.6.1 General

A. All materials and equipment shall be new and undamaged, and of a design, and construction to conform to the specification and relevant codes and standards.

B. Provide materials and equipment which are the standards products of a manufacturer regularly engaged in the manufacture of the products and that essentially duplicate items that have been in satisfactory use for at least 2 years prior to contract unless otherwise with the certificate from manufacture. Equipment shall be supported by a service organization that is, in the opinion of Engineer, reasonably convenient to the site.

C. Provide materials and equipment suitable for the intended services and conditions. Where specific materials are mentioned in the specification, these are provided to identify a minimum standard of quality, durability and performance.

D. Obtain all piping material (pipe, tees, elbows, reducer, etc.) from the same manufacturer to ensure material compatibility and quality and dimensional consistency.

E. Each major item of equipment shall have the manufacturer's name, address, type or style, model or serial number and rating on a plate secured to the item of equipment.

F. Stainless steel shall be employed wherever possible. Iron and steel where used shall in general be galvanized or by exception may be painted.

3.6.2 PIPING

A. Piping materials such as ductile cast iron pipe (DCIP), stainless steel, steel pipe, high density polyethylene (HDPE) pipe, PVC or other non-corrosive materials shall be used for piping system, the Contractor shall propose recommended pipe materials to be used for the water treatment plant during the detail design and a list of pipe material shall be submitted to Engineer for approval prior to commencement of the works.

3.7 TREATMENT PROCESS

3.7.1 General

A. The water treatment plant system shall be utilizing UF (Ultra Filter) system consist of the inlet valve, strainers, UF modules, back wash pumps, and wastewater storage tanks, chemical dosage equipment (tanks and pumps), disinfection facilities, compressors, piping works, valves, flow and pressure meters, electrical and control works and all other incidental works.

3.8 OTHER WORKS

3.8.1 Electrical Works

A. The WTP control system shall include enclosure, main and branch circuit breakers, starters, contactors, and reset buttons, relays, meters, selector switches, push buttons, and pilot lights, PLCs, circuit control items for electrical control of the various plant components, and all necessary wiring and tubing.

B. Electrical motor driven equipment shall be provided complete with motors, motor starters and controls. The motor starter shall be provided complete with properly sized thermal overload protection and other appurtenances necessary for the motor.

C. Electrical control system components shall be completely wired and mounted in the enclosure at the manufacturer's factory and tested prior to shipment from the factory.

D. The electrical service available is 380/220V, 3Phase, 50Hz, 3+1 wires (TN-C-S System).

E. All push buttons, selector and reset switches and indicating LED lights shall be installed on the outside of the door, properly identified with laminated phenolic name plates. All components on outside of enclosure and on internal panels shall be identified by engraved laminated phenolic legend plates.

F. The circuit breakers shall be Molded Case Circuit Breaker (MCCB). The branch circuit breakers shall be provided for each drive motor and control circuit. Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD) shall be applied as required. Panel shall include sufficient space for the additional breakers.

G. The magnetic motor starter with overload and under-voltage protection shall be provided for the motor. The starter shall have thermal overload protection in each phase and short circuit protection.

H. Manual or automatic control and protective and signal devices required for the operation and control wiring required for controls and devices, shall be provided.

I. The enclosnre(s) shall be floor mounted type indoor unit and shall be constructed of sheet steel. Screened ventilating opening shall be installed in the enclosure as required. A copy of the external wiring connections and a circuit breaker index print shall be secured to the inside of door.

J. If operating lead equipment should stop, standby equipment, acting in response to setting of failure signal, shall automatically start and stay in operation.

K. The operation of duty and standby equipment shall be rotated automatically to equalize the total running time

L. The lighting, fire detection and other electrical works required for the building shall be included.

Main Low Voltage Switchboard (MLVD) shall consist of, but not be limited to, the following equipment:

1. Main circuit breaker and branch circuit breakers
2. Automatic/manual transfer switch (for EVN power and generator power changing)
3. Surge Protective Device (SPD)
4. Protection relay including open phase protection device
5. Measuring equipment including Ammeter, Voltmeter, frequency meter, power factor meter, Watt-meter, Watt-hour meter
6. Indication LED lamps; system operation, system alarm, system warning, system stop

M. Emergency generator shall be as follows:

1. Generator shall be at least equal to 150kVA for full plant operation.
2. Engine shall have sufficient capacity to start back wash procedure.
3. The system shall be adequate for operation in the said ambient environments.
4. The system shall start automatically when EVN power is interrupted and supply the generator power to the MLVS.
5. The system shall be provided with fuel service tank at least equal to 6-hours operation.

N. Uninterruptible Power Supply (UPS) system shall be as follows:

1. The UPS shall have sufficient capacity for the plant control - plc.
2. The UPS shall be provided with storage battery for ten (10) minutes to maintain the plant control power without any AC incoming power.

O. Local Supervisory Control and Data Acquisition (SCADA) shall be as follows:
1. The local SCADA shall have capability of full automatic plant operation that is linkage with terminal devices such as PLC.
2. The local SCADA shall transmit a signal or message to allocated terminals such as mobile phone when receive or detect abnormal signal such as below:
WTP faults
EVN power interruption
Fire alarm
Access control
Generator faults and low-level of fuel oil

P. Voice telecommunication and data communication system (TEL & LAN) shall be as follows:
1. TEL and LAN outlets, HUB and internal cables shall be installed.
2. Fiber Optic cable will be installed between HSZ and the new WTP by others.
3. One (1) telephone set shall be furnished in the switching cabinet with installed PLC
4. One (1) Personal Computer set and a printer (A4 size, monochrome) shall be furnished on the workbench near laboratory equipment

Q. Closed Circuit Television (CCTV) system shall be as follows:
1. A CCTV camera shall be installed at the entrant for security maintain.
2. CCTV camera shall be installed in the plant area as required.

R. Access Control (ACC) system shall be as follows:
1. Electric key-lock system shall be installed at the entrance door.

S. Exterior lighting system shall be as follows:
1. The exterior light shall be installed on the outside wall of the plant and at the gate of the site.
2. The exterior light shall be provided with automatic/manual switch.

3.8.2 HEATING, VENTILATION, PLUMBING WORKS

A. Heating, ventilation and air-conditioning (HVAC) , plumbing for the toilet, firefighting composing by fire extinguisher and fire hydrant as required for the building shall be included.

B. HVAC system shall be provided in such as UF filter area, chemical storage as required.

C. Heating and ventilation system shall be provided in the plant area as required.

3.7 SUBMITTALS

A. The Contractor shall prepare a methodology and program for the design works and submit to Engineer within 15 days of the Commencement Date for review and approval.

B. The Contractor shall submit the basic design after review which passed the Macedonian laws and regulation within 1.5 months after the contract date.

C. The Contractor shall submit the detail drawings to Engineer for approval. The detail drawings shall contain complete piping, wiring, schematic flow diagram and any other details required to demonstrate that the system has been coordinated and will properly function as a whole.

D. The detail drawings shall show proposed equipment layout and anchorage of equipment and appurtenances, and equipment relationship to other parts of the work including clearance for installation, maintenance and operation.

E. The Contractor shall submit the manufacturer's descriptive, technical literature, catalog cuts, performance charts, pump curves, list of materials, list of equipment and specifications for the proposed equipment.

F. The Contractor shall submit the following O/M manuals:

1. Operation and maintenance manual.
2. Parts manual in original language or English. The parts manual shall include illustrations and exploded views necessary for the proper identification of all parts, assemblies and subassemblies.

G. The Contractor shall prepare and submit to Engineer, at least one month prior to Tests on Completion being carried out, detailed test procedures and schedules for the approval.

H. The Contractor shall prepare and submit a comprehensive training program for each item or system with full course notes, reference material and timetable at least two months before particular training is to commence.

I. The Contractor shall submit the as-built design including listed below in accordance with Macedonian laws for construction:

1. Technical report
2. Description of real engineering geological conditions
3. As-built BoQ
4. As-built drawings with details and others

3.10 LABORATORY EQUIPMENT

A. The Contractor shall provide approved quantities and types of sampling, testing and analysis equipment including glassware and chemicals, for the measuring and monitor the performance of the system and to ascertain quality of distributed water. The followings shall be furnished as minimum requirements:

1.	Residual Chlorine Meter	DPD method Measurement range: 0.1 to 10 mg/L Measurement of Al, 0-1 mg/L	1 set
2.	Turbidity and Color Unit Meter	Turbidity and color standard plate Turbidity: 0.5 to 15 unit Color: 2 to 20 unit	1 set
3.	pH Meter	Glass Electrode Method: pH (0-14), ORP (0 ± 2000mV) and temperature (-130 to 199.9 °C)	1 set

B. The Contractor shall provide a cabinet, a work table and any other items required for the testing and analysis of the samples of water. The followings shall be furnished as minimum requirements:

1.	Cabinet	Suitable size and body material with key-lock for keeping laboratory equipment	1set
2.	Measurement Instrumentation	Pipettes, flasks, beakers, plastic tanks	1 set
3.	Chemical Reagents	For residual chlorine, turbidity and pH	1 set

C. The Contractor shall submit the list to Engineer for approval prior to the order.

3.11 SPARE PARTS AND SPECIAL TOOLS

A. The Contractor shall provide manufacturer's recommended spare parts list for the pumps and all other equipment sufficient for two years operation after taking over.

B. Submit special tools if it is necessary for maintenance and testing of the all water treatment equipment. Such tools shall be provided in suitable containers and delivered to the Employer prior to the taking over.

C. The Contractor shall submit the list to Engineer for the approval.

3.12 CONSUMABLES

A. The Contractor shall provide liquid or solid chlorine sufficient for the period of three (3) months operation after taking over, but not longer than 6 months. Other consumables such as oil, grease and lubrication shall be provided sufficient for the period of two (2) years operation after taking over.

B. The Contractor shall provide chemicals for analyzing the water quality sufficient for the period of two (2) years after taking over.

C. The Contractor shall submit the list to Engineer for the approval.

3.13 DELIVERY, STORAGE AND HANDLING

A. Protect material and equipment delivered and placed in storage from the weather, excessive humidity and excessive temperature variation, dirt, dust, or other contaminants.

3.14 INSTALLATION

A. Install pumps, blowers and other equipment in accordance with the written instructions of the manufacturers.

B. Adequate size of the concrete foundations for the equipment shall be provided.

C. Foundation bolts, as required, shall be furnished for proper positioning during the placement of the concrete.

D. The Contractor's design shall ensure that all plant and components comprising the works incorporate all necessary guards, rails, locks and all other safety measures necessary to protect operation and maintenance personnel from injury or accident.

E. Guards shall be provided to all exposed moving parts such as gears, belts and fans and to prevent contact with live electrical components. Sharp or protruding surfaces shall be avoided.

F. Suitable access ladders, with enclosed cages if necessary, shall be provided to shafts, towers, manholes, pits and roofs.

3.15 FINISHES, IDENTIFICATION, LABELS AND HAZARDS SIGNS

A. Generally the finishes material and color of all plant, cabinets and other items comprising the works shall be subject to the approval of Engineer. The Contractor shall submit proposed color schemes, with samples to Engineer for approval.

B. All plant, equipment, valves, parts, assemblies, cables and pipe-work comprising the works shall be permanently and legibly marked for identification, with warning of hazards as appropriate. All written markings shall be in Macedonian and English.

C. Identification, generally, shall be with plates, labels or color coding but stamping or engraving may be permitted in certain circumstances.

D. The Contractor shall submit to Engineer for approval a schedule of all labels, plates, color codes and other markings as appropriate. The schedule shall indicate:

1. The size of the plate or label, and
2. the material and its color to be used, and
3. information to be shown on the plate or label, such as;

    a) item functional description
    b) model and serial numbers
    c) year of manufacture
    d) manufacturer's name
    e) power rating or capacity
    f) a warning to the danger or hazard, and

4. details of proposed color coding to be used for wires, cables and pipes, and/or
5. details of any stamps, engravings or other necessary markings

E. Each cable assembly shall be marked with its designation as it appears on drawing or cable schedules. The markings shall be permanently affixed to each end of the cable and connections and check terminals shall be clearly labeled for correct connections of wires and cables.

F. Storage areas for hazardous materials or locations where operation and maintenance staff are liable to come into contact with hazardous materials shall be clearly marked with appropriate warning signs.

PART 4 - VERIFICATION

4.1 TESTS AND INSPECTION

4.1.1 General

A. The Contractor shall provide sufficiently qualified personnel, materials, testing equipment, instruments and consumables for testing. As a general rule, the Contractor shall conduct inspections, testing and commissioning for himself of all plant, materials and items to ascertain for himself that the item conforms to the requirements of the Contract. After satisfying himself that it does comply, the Contractor shall then apply to Engineer in writing for the completion tests to be made, in the presence of Engineer.

B. The Contractor shall prepare a general testing program for the works and submit to Engineer for approval before 45 days of the tests. The Engineer shall be given the opportunity of witnessing the all tests, and the Contractor shall give at least 7 days' notice of all tests to be carried out.

C. The Contractor shall provide and deliver all plant, materials and samples for all required tests, supplied to the place, in quantities and at the appropriate time and with all necessary cutting, machining, labeling and other preparation and transportation. Wherever possible, test specimens shall be submitted by the Contractor with the request for approval of the items of plant or material concerned.

4.1.2 Test on Completion

A. Prior to substantial completion and taking over of the works, the Contractor shall conduct completion inspection, testing and commissioning of all items to ascertain for him that the completed works conform to the requirements of the Contract.

B. The results of Tests on Completion shall be submitted to Engineer within 14 days of them being completed, and shall include:

1. Completed test result sheets, signed by the Contractor and Engineer.
2. A record of any engineering changes necessary to correct test results that did not comply with the Specification.

4.2 FLUSHING AND DISINFECTION OF WATER SUPPLY SYSTEM

A. Part of Water supply system - ultrafiltration unit between inlet and outlet pipe connection shall be flushed and disinfected for potable water use. The Contractor shall provide all labor, plant and material required to carry out the flushing, including swabs, flanged ends, temporary pipe-work, temporary tapings and connections where necessary. The Contractor shall carry out disinfection and be fully responsible for all aspect of the disinfection of the water supply pipes including installation, maintenance and removal of all temporary works.

B. The Contractor shall give a notice 24 hours before to Engineer that the reservoir is ready for flushing.

C. Prior to the commencement of these works, the Contractor shall submit a method statement

for flushing and disinfection of water supply pipes to Engineer for approval.

D. The disinfection shall not commence until the cleaning and flushing process has been completed to the satisfaction of Engineer.

E. After flushing and disinfection have been completed, water shall be sampled by local health organization and tested for aesthetic, bacteriological and chemical tests, and test result shall be submitted to Engineer. It shall be the Contractor's expense.

4.3 OPERATION AND MAINTENANCE MANUALS

A. Prior to taking over of the works under Conditions of the Contract, the Contractor shall prepare detailed operation manual for ultrafiltration WTP plant in Macedonian and English and maintenance manuals for installed equipment in original manuals (English), for Engineer's review and consent. The works shall not be considered complete for the purpose of Taking Over until such manuals have been submitted and approved.

B. The manuals shall be provided for all parts of the works as required by the specification or as directed by Engineer and shall be sufficient in detail such that the Employer shall be able to operate and systematically maintain the works after completion.

C. The manual shall contain, but shall not be limited to, the following:

1. The purpose of the manuals and their composition;

2. Complete and accurate technical description of the system and all plant contained in the system describing the technical characteristics, operating conditions and performance, using text and/or drawings;

3. The function of each part of the system or plant within that system;

4. Installation and adjustment procedures describing unpacking, mounting, wiring and method of adjustment of each component;

5. Operating procedure from start-up to close-down with all intermediate stages;

6. A numerical identification system for component, valves, control points and units;

7. A description of normal value settings, flow diversions, and operational requirements;

8. Complete list of all modules, components and parts of all plant within the system giving the original manufacturer's name, address and part number and type. Name and address of local firm or firm in nearby countries able to provide these parts shall also be given;

9. Complete list of all consumables, and suitable alternatives, with the name and address of the original supplier and address of the local firm or firm in nearby countries able to provide these materials or alternatives;

10. Maintenance instructions describing, in detail, the procedures and test equipment and tools required to properly maintain the performance of the equipment, repair and operate the plant and equipment installed at the site, including preventive maintenance schedule and check sheet samples

11. Trouble-shooting symptoms list with chart and description of symptom and chart provide diagnostic procedures for trouble-shooting for each unit;

12. Safety measures to prevent accidents to persons or plant;

D. Manual must refer to the exact model, style and type of plant provided.

E. Two advanced copies of the final draft manuals with as-built drawing shall be provided to Engineer for his review and consent, no later than 1 month before the schedule date for commissioning of the relevant plant or system. After review and consent of Engineer, the Contractor shall provide 6 copies of the final version incorporating all amendments and corrections, by no later than 0.5 month before the actual date for commissioning.

4.4 TRAINING OF EMPLOYER'S STAFF

A. The Contractor shall prepare a comprehensive training program for each item or system with full course notes, reference material and timetable. The Contractor shall use visual media and graphics as much as possible throughout the training process.

B. The training program shall include the following components:

1. Courses on general principles with overall objectives for each section;

2. Planned lessons with general guidelines for the items containing performance objectives;

3. Lesson plan shall be divided into such major activities as operation, maintenance, repair and laboratory testing

4. Safe working procedure;

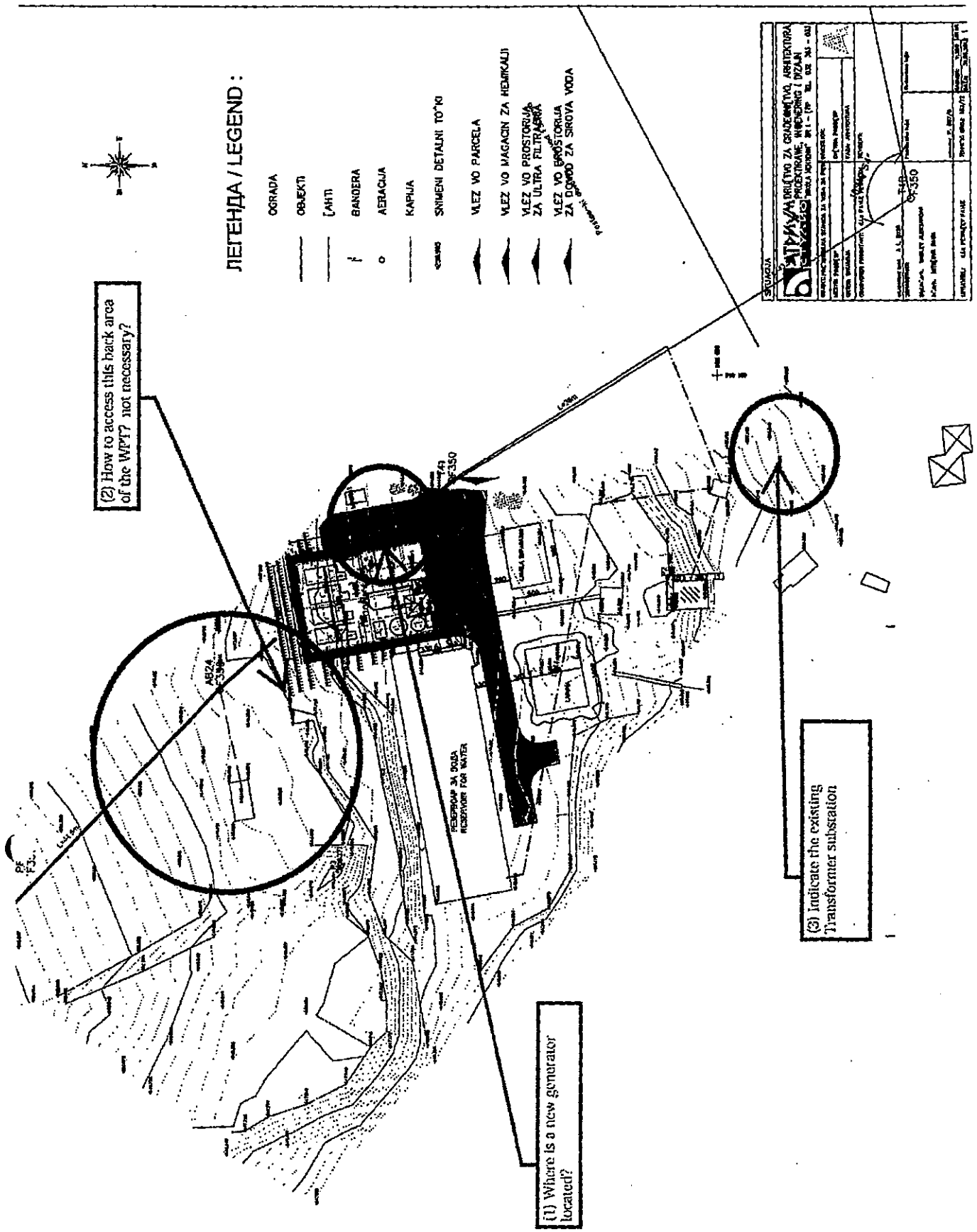
5. Identification of accident prone and hazardous conditions and

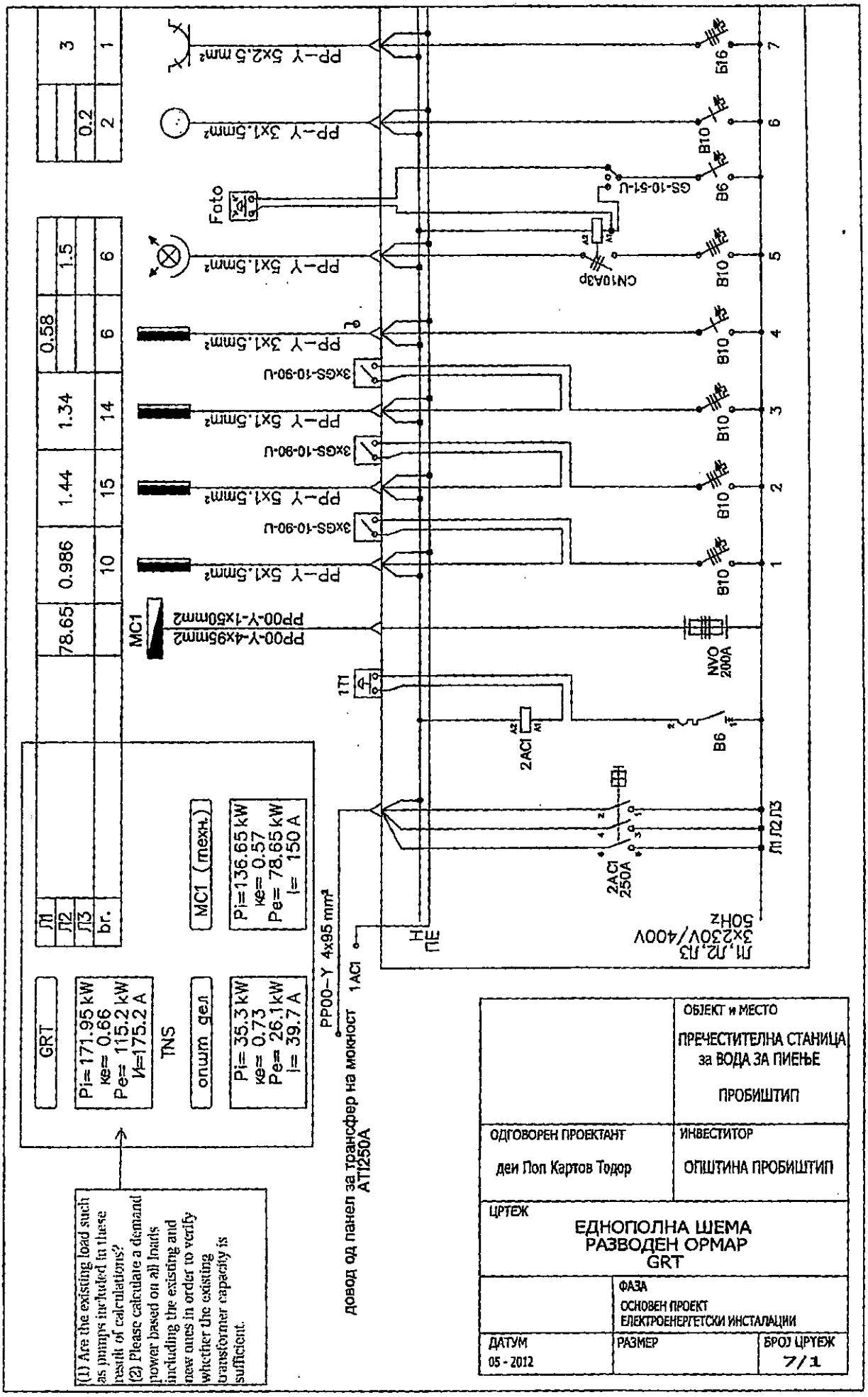
6. Safety measures for individual equipment.

4.5 CLEANUP

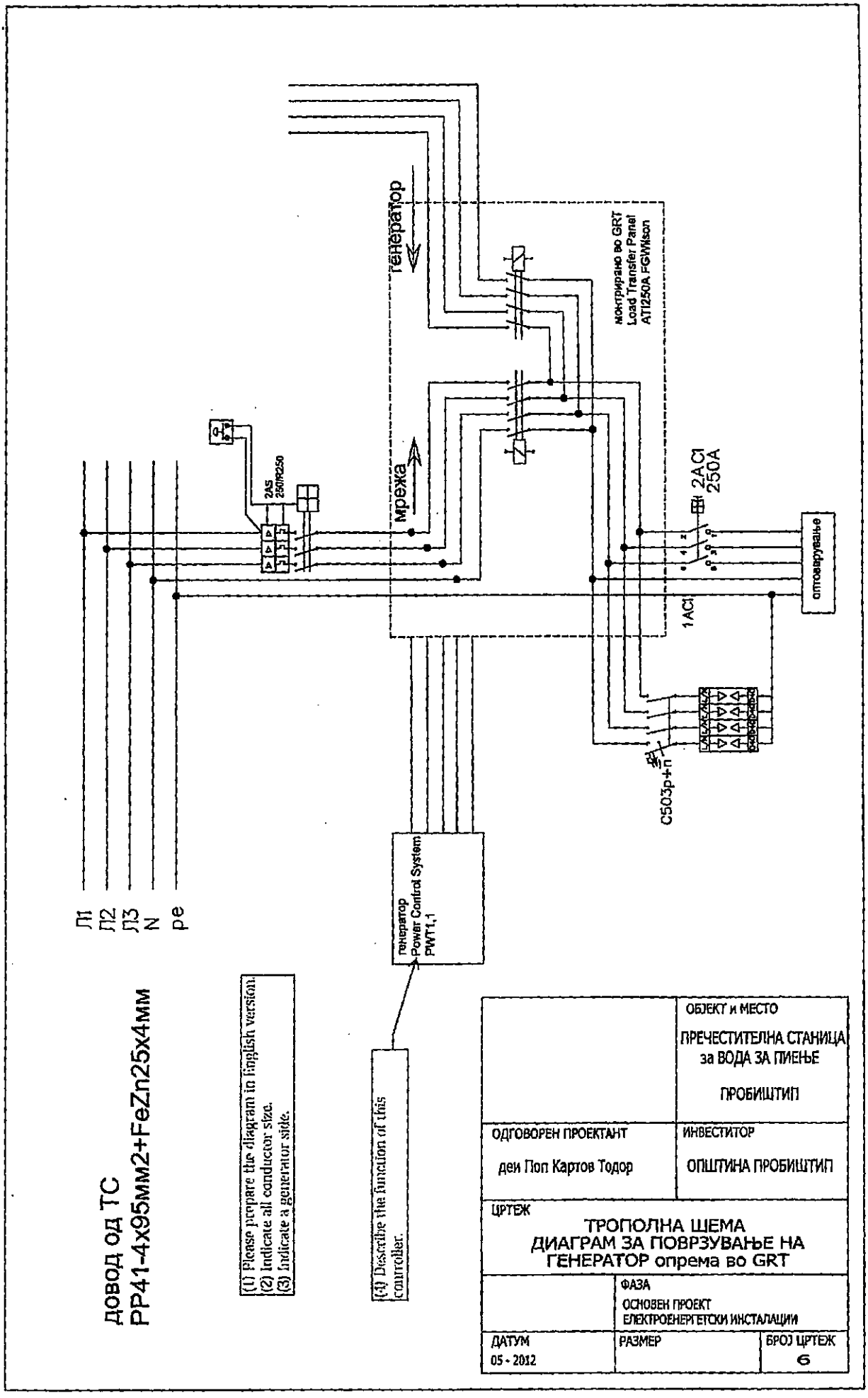
A. Upon completion of the installation of water lines, and appurtenances, all debris and surplus materials resulting from the work shall be removed.

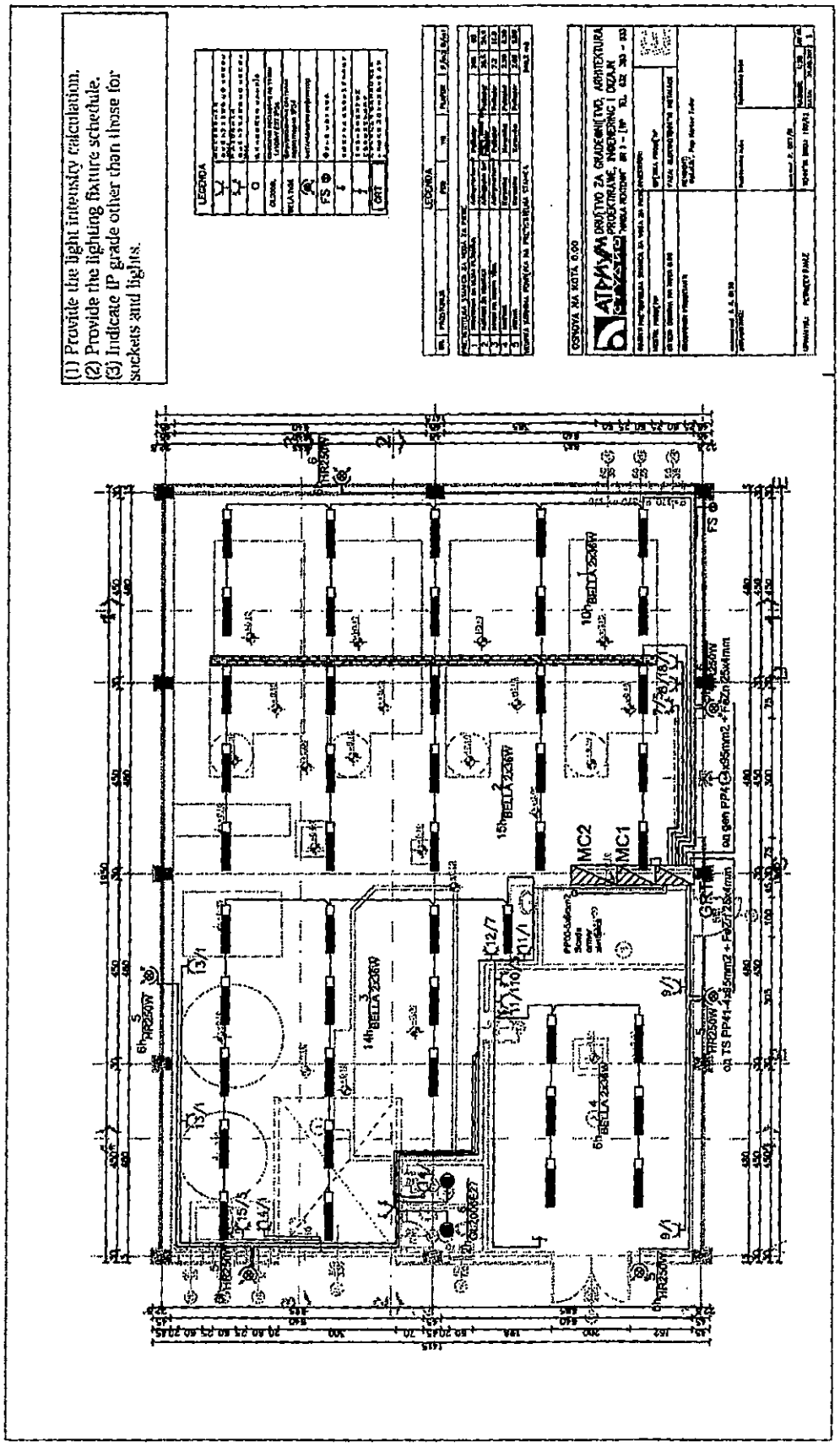
** END OF SECTION **

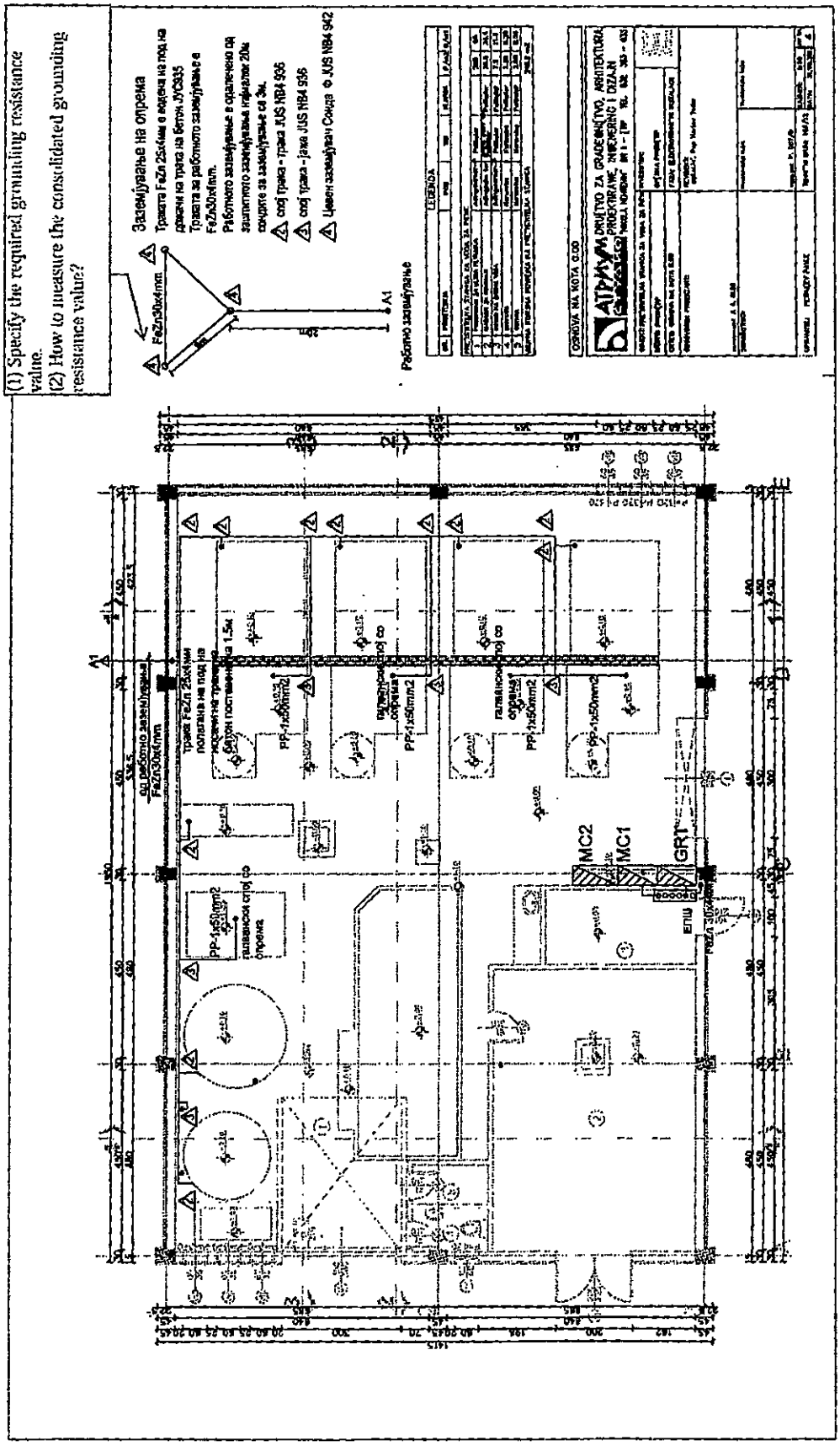

ЛЕГЕНДА / LEGEND :
(1) Where is a new generator located?
(2) How to access this back area of the WPT? not necessary?
(3) Indicate the existing Transformer substation
RESERVOIR FOR WATER



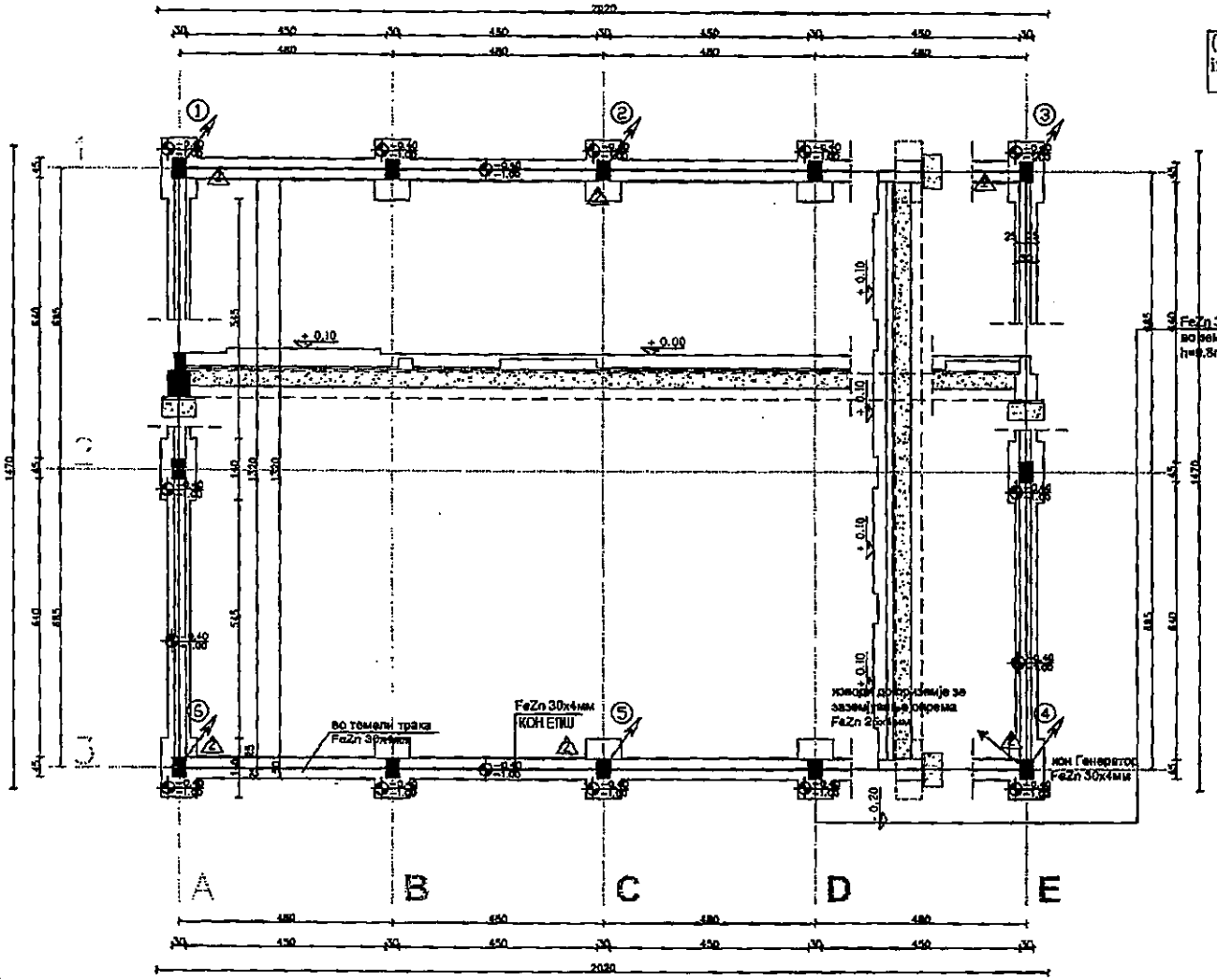
(1) Are the existing load such as pumps included in these result of calculations?
(2) Please calculate a demand power based on all loads including the existing and new ones in order to verify whether the existing transformer capacity is sufficient.

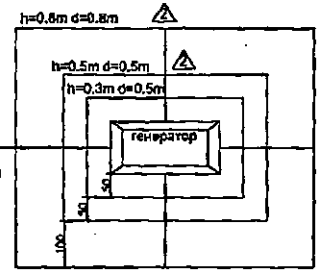

генератор
мрежа
монтирано во GRT
Load Transfer Panel
ATI250A FGWilson
2AS
250/3P250
2AC1
250A
1AC1
отоварување
C503p+n
Л1
Л2
Л3
N
pe
довод од ТС
PP41-4x95мм2+FeZn25x4мм
генератор
Power Control System
PWT1.1
(1) Please prepare the diagram in English version.
(2) Indicate all conductor size.
(3) Indicate a generator side.
(4) Describe the function of this controller.
ОБЈЕКТ и МЕСТО
ПРЕЧЕСТИТЕЛНА СТАНИЦА
за ВОДА ЗА ПИЕЊЕ
ПРОБИШТИП
ОДГОВОРЕН ПРОЕКТАНТ
деи Поп Картов Тодор
ИНВЕСТИТОР
ОПШТИНА ПРОБИШТИП
ЦРТЕЖ
ТРОПОЛНА ШЕМА
ДИАГРАМ ЗА ПОВРЗУВАЊЕ НА
ГЕНЕРАТОР опрема во GRT
ФАЗА
ОСНОВЕН ПРОЕКТ
ЕЛЕКТРОЕНЕРГЕТСКИ ИНСТАЛАЦИИ
ДАТУМ
05 - 2012
РАЗМЕР
БРОЈ ЦРТЕЖ
6


(1) Provide the light intensity calculation.
(2) Provide the lighting fixture schedule.
(3) Indicate IP grade other than those for sockets and lights.
LEGENDA
OSNOVA NA KOTA 0,00
MC1
MC2
GRT
FS


(1) Specify the required grounding resistance value.
(2) How to measure the consolidated grounding resistance value?
Заземјување на опрема
Работно заземјување
LEGENDA
MC2
MC1
GRT

(1) Is the lightning protection system grounding integrated with the electrical system grounding?





Темелен заземјувач

Трактата во темелите е FeZn 30x4мм

① - ⑥ Трактата за изводите према кровот во столбовите е FeZn 20x3мм

⚠ спој трака - трака JUS N.B4.936

Трактата во темелите да се заварат со арматурата на секои 1м до 1,5м.

OSKOVA NA TEMELI

ATRIUM STUDIO DRU[TVO ZA GRADE@NI[TVO, ARHITEKTURA PROEKTIRAWE, INGENERING I DIZAJN

Printed: 12/09/10

Test Procedure
for
Water flow and Water pressure
at
the Water Treatment Plant (WTP)
of
Probisitip

May 2012

SAPI

1. PURPOSE OF TEST
   - Water flow and pressure test at the site planning a new Water Treatment Plant using surface water supplied from Intake-1 is aim at verifying the analyzed results calculated theoletically, and
   - Results of the tests will be used as a basic data for UF System design.
   - Water flow and water pressure from the existing well shall be measured to clarify for utilizing as back-up water supply system.

2. WATER SUPPLY SYSTEM
   (1) The present water supply condition
   See DWG-1: PRESENT CONDITON OF WATER SUPPLY SYSTEM
   (2) The testing water supply condition
   See DWG-2: TEST CONDITION FOR WATER SUPPLY SYSTEM
   (3) Future water supply system
   See DWG-3: FUTURE CONDITIN OF WATER SUPPLY SYSTEM

3. PREPARATION FOR TEST
   For the water flow and pressure tests on surface water from Intake-1, by using the existing "new water reservoir", 1,500m3 (hereinafter referred to as Res-new), preparation works shall be performed as follows:

3.1 Preparation at the existing reservoir site
   (1) The existing valve (V-old) located in the existing chamber (Branch Chamber / Shaft A), that is connected to the existing "old water reservoir", 600m^3 (Res-old) shall be repaired in order to stop water to Res-old.
   See DWG-4:VALVE CHAMBER and Photo-1
   Note: Repair work of valve for Res-new is not required for the testing.
   (2) A pressure gage (PR-gage) shall be installed at the existing delivery pipe under the reservoir shed. Survey the elevation where the pressure gage is installed. See DWG-2 and Photo-2
   Specification of PR-gage:
      - Type: Manometer
      - Minimum measure unit: 0.1kgf/cm^2
      - Range: up to 10kgf/cm^2

3.2 Preparation of the existing water supply pipe
   (1) Flushing of the existing pipe and calibration of the existing water flow meter and SCADA
      - Flushing: Pipe from Intake-1 to Legovec chamber or nearby drainage manhole shall be performed
      - The existing Flow meter (FL meter) at Intake-1 shall be calibrated (*A)
      - Acquisition water flow data by the existing SCADA shall be calibrated (*B)

- The data *A and *B shall be calibrated.

(2) Verify the function of SCADA, Intake-1 water supply gate valve, water flow meter and pipes to supply water which are per 30Litter/sec、75Litter/sec、100Litter/sec、150Litter/sec during the flushing, and also train the operation to adjust discharge flows.
Note: This verification test may be possible at the section of pipe from Intake-1 to Legovec and/or near a drainage manhole.

(3) Mobile communication ability test shall be performed among the reservoir site, Intake-1 and SCADA room.

3.3 Preparation for well water flow and pressure tests

(1) Pre-verification on well water flow (Rativica pumping station discharge flow) and pressure at the well water pumping station
- Unit well water flow shall be calculated based on the data from pump running time and accumulated water storage amount in the Res-new. This information shall be provided by Mr. Luptio
- The existing valve located between the pipe from Rev-new to Rev-old shall keep closing during the mentioned above pre-verification.
- Well water pressure at Rev-new shall be gauged as a pre-verification.

(2) Mobile communication ability test shall be performed among the reservoir site, Legovec chamber and the well water pumping station.

3.4 Test Permission, Test Schedule and Public Information

(1) Ask and obtain the test permission form Indomineral with a detail test procedure and schedule prior to carry the test.

(2) Verify the existing valves, pipes from Rev-new to Indomineral in order to discharge test's water without any defects.

(3) Minimize cut-off water supply duration and test schedule
- Considering should be given to the test schedule to minimize the possibility of cut-off water supply occurrence and test should be performed during minimum water demand that should be instructed by Mr. Lupco.
- Expected test starting time will be at 3:00 p.m. on Saturday or Sunday.
- The test will be postponed in case of rainy day.
- The test shall be performed after the turbidity of the raw water is restored to NTU5 or less.
- The test shall be performed by the middle of Jun 2012.

(4) Publication to the Citizen should be performed as follows
- Test schedule
- Occurrence possibility of cut-off water supply
- Occurrence possibility of turbidity water after testing

4. TEST PROCEDURE

4.1 Test staff allocation and their role

Position held	Allocated at:	Role and Responsible for:	Remarks
Conductor (C-1)	The pressure gage at the Res-new	(1) C-1 is the person in charge (Leader). (2) C-1 shall conduct the test according to the time schedule, especially shall command staff to measure at the best timing. (3) Log and verify the data corrected from staff. (4) Inform to concerned personnel and agency in case of emergency.	Mobile phones will be used to communicate among staff allocated at SCADA, Intake-1, Legovec and Well pump station
Staff-1 (S-1)	The pressure gage at the Res-new	(1) S-1 is deputy in charge (2) Keep and verity safety around Res-old, Res-new. (3) Measure pressure by the PR-gage. (4) Measure and verify the water level in Res-new and Res-old respectively while well water is supplied. Note: Water level will be measured by using the water level electrode in Rev-new and Rev-old.	
Staff-2 (S-2)	SCADA room in HSZ office	(1) Control the gate valve at Ingake-1 by using SCADA to adjust water flow. (2) Measure and log the water flow by using SCADA and report it to C-1.	
Staff-3 (S-3)	The Flow meter in Intake-1	(1) Measure and log the water flow by using the local flow meter as a verification data to SCADA data and report it to C-1. (2) Keep and verity safety in Intake-1 site.	
Staff-4 (S-4)	Legovec chamber	(1) Control manually the valves in Legovec chamber.	
Staff-5 (S-5)	The Well water pumping station	(1) Operate the well water pump at Rativica Pumping Station.	

4.2 Last preparations just before testing

(1) Stop the well water pump

- C-1 shall command S-5 to stop the well water pump around 2 hours before prior to the commencement of the test.

(2) Storage and discharge water in Res-new and Res-old

- Water in Res-old shall be maintain fully to supply water the City. And ,
- Around 500m^3 water in Res-new shall be kept to supply the water to Res-old just before testing about 1 hour.
- Open the discharge valve of Res-new to Indomineral. However,
  The test may commence just after the opening of the said discharge valve, not necessary to wait for the empty of Res-new to start the test.

4.3 Water flow and pressure test procedure for surface water and well water

Procedure No.	Performed by	Role and Responsible for:	Expected Time/hour
1	C-1 S-1	A) Verify actual test staff allocation and communication availability among staff. B) Verify water level is high in Res-old.	Approx.10-min.
2	C-1 S-1	A) Close the water supply valve from Res-new to Res-old. B) S-1 → S-4: Command to proceed No.3	Approx.10-min.
3	S-4	A) Close well water valve, open surface water valve in Legovec chamber. B) S-4 → C-1 :Report after completed the No.3 procedure.	Approx.10-min.
4	All	A) C-1→S-2: Command to control the gate valve of Intake-1 to discharge 30 litter/sec of water flow by using SCADA. B) S-1→S-3, S-4,5: Inform test starting C) C-1 & S-1→S-2 & S-3: Command to measure water flow and pressure after verifying the stability of the water flow and pressure. D) S-1: measure & log pressure and report it to C-1. E) S-2 & S-3→C-1: measure & log water flow and report it to C-1. F) C-1: Verify the log from S-1, 2 and 3. G) For 75 litter/sec test, H) For 100 litter/sec test and I) For 150 litter/sec test: shall be performed as per the same procedure A)~F). Note: Mobile communication ability shall be kept among S-2、S-3 and C-1 during the test.	Approx. 5-min for each sequential procedure and approx. 20-min in total. If the flow and pressure become stable, the time 5minutes shall be reduced.
5	C-1 S-2 S-4	A) Verify the collecting all data for surface water test. B) C-1→S-2: Command to close the gate valve. C) S-1→S-4: Command to proceed No.6	Approx.10-min.
6	S-4	A) Close surface water valve, open well water valve in Legovec chamber. B) S-4→C-1 :Report after completing the No.6 procedure.	Approx.10-min.
7	C-1	A) S-1→S-5: Command to proceed No.8	Approx.10-min.
8	S-5	A) Operate well water pump B) S-5→C-1 :Report after completing the No.8 procedure.	Approx.10-min.
9	C-1 S-1 & Cleaning staff	A) Clean in Res-new B) C-1 instructs S-5 to stop or restart the well pump to achieve effective cleaning Res-new. C) Close discharge valve after complete cleaning. D) Compare and verify well water pressure with the pre-verification data. E) Finish the test after verification of the safety of the site.	Approx. 1-hour This test schedule and each period shall be asked Mr. Lupco.

Procedure No.	Performed by	Role and Responsible for:	Expected Time/hour
		F) Restore to the original operation condition of Rev-new.	
10 Additional works if necessary	C-1 S-1 & Cleaning staff	A) When a cut-off water supply is occur during the procedure 9, the Valve V-old to Rev-old in the Shaft A may open to supply well water to directly. B) The V-old shall be closed after completing the procedure 9. C) Finish the test after verification of the safety of the site. D) Restore to the original operation condition of Rev-new	-

5. Log Sheet

(1) Surface water flow and pressure test sheet from Intake-1

Water Flow (Litter/sec)			Pressure (kgf/cm^2)	Remarks
Target flow	Reading by S-2	Reading by S-3	Reading by S-1	
30				
75				
100				
150				

(2) Well water flow and pressure test sheet from pumping station

Water Flow (Litter/sec)	Pressure (kgf/cm^2)	Remarks

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ZLETOVICA BASIN WATER UTILIZATION IMPROVEMENT PROJECT
Water Treatment Plant- Probistip and Municipality Stip
ORIENTAL CONSULTANT CO.,LTD (OC)
Special Assistance for Project Implementation (SAPI)

Office Address: Probistip Office: Cvetko Tonev Str. NN. 2210 Probistip
Tel/Fax No. 032- 481-521 / 032-484-733

May 07, 2012
Letter No. OC-PEHSZ/12/14-1

Mr. Stojan Milanov
Director
PE HS Zletovica

Subject: Evaluation of offer for Water Treatment Plant of Probistip Municipality

Dear Sirs,

Attached sheet is our evaluation on the offer for Probistip Water Treatment Plant from ISKRA dated on April19, 2012.
According to our comparison, the offer is acceptable so we recommend that you may proceed the contract procedure.

Sincerely yours,

ORIENTAL CONSULTANTS CO.,LTD. ORICONSUL GLOBAL CONSULTING

Project Manager of the Consultant

C.C.: 1) File

Evaluation Table WTP Probistip

			Evaluation by Consultant					
		1	2	3	4	5	6=1/5	Evaluatio
No.	ITEM	ISKRA	Hidroonzenering	Tehnos Mont	Offer C	Selected	Ratio (%)	
1	Raw water inlet equipment	39,260	41,512.00	45,149		41,512	95%	OK
2	Ultra filtration system	446,473	530,000.00	513,443		513,443	87%	OK
3	Back wash	94,225	108,742.00	108,358		108,358	87%	OK
4	Neutralization	66,462	95,349.00	81,047		81,047	82%	OK
5	Chemical preparetion and dosage	44,308	78,234.00	66,499		66,499	67%	OK
6	Electrical equipment and automatization	127,013	148,964.00	146,065		146,065	87%	OK
7	Measuring and control equipment	31,295	78,948.00	35,989		35,989	87%	OK
8	Engineering, software design and process start up	334,963	588,746.00	500,434		500,434	67%	OK
9	Civil work for ultrafiltration	216,001	294,000.00	249,900		249,900	86%	OK
Total		1,400,000	1,964,495.00	1,746,885.50				

Iskra

Iskra Sistemi, d. d.
Stegne 21
SI-1000 Ljubljana, Slovenija

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IBAN: NLB SI56 0292 3001 2553 977
ABANKA SI56 0510 0800 0022 205
ID DDV: SI13278088

OFFER

Št.: SIS - DEN - DP - 062/12

Customer: **PROBIŠTIP MUNICIPALITY**
Joakim Spirov 1
2210 Probištip
Macedonia

Offerer: **Iskra Sistemi d.d.**
Stegne 21, 1000 Ljubljana
Slovenia

Hydrosystem Zletovica

Water treatment plant Probištip

Ljubljana, date 19.04.2012

Iskra
Iskra Sistemi, d.d.
10

Package-4 SCADA and Telecommunication Systems

Variation Order No.2-a: Water Treatment Plant Probistip - Ultra Filtration System

BILL OF QUANTITIES

P.N	Description	Unit	Qty	Amount EUR
B. Design of Civil Works				
V.O.2-a-100	Design of Civil Works and technology	l.sum	1,00	1,00
A. General Items				
V.O.2-a-101	Preparation Works	l.sum	1,00	10.000,00
B. Ultra Filtration System				
V.O.2-a-102	Turbidity measurement for intake 1	l.sum	1,00	
V.O.2-a-103	The control valve for the alternative source	l.sum	1,00	
V.O.2-a-104	Protection filter 300µm	l.sum	1,00	
V.O.2-a-105	Pipes and valves	l.sum	1,00	
V.O.2-a-106	Ultra filtration units	l.sum	1,00	
V.O.2-a-107	Back wash unit	l.sum	1,00	
V.O.2-a-108	Waste water basin	l.sum	1,00	
V.O.2-a-109	Chemical enhanced backwash (CEB)	l.sum	1,00	
V.O.2-a-110	Turbidity meters	l.sum	1,00	
V.O.2-a-111	Integrity testing of membranes	l.sum	1,00	
V.O.2-a-112	Desinfection with NaOCl	l.sum	1,00	
V.O.2-a-113	Local SCADA system	l.sum	1,00	
V.O.2-a-114	Compressed air	l.sum	1,00	
Sub-total B				1.121.459,00
C. Building for Ultra filtration System				
V.O.2-a-115	Civil works for building	l.sum	1,00	
V.O.2-a-116	Accession road	l.sum	00	
V.O.2-a-117	Electrical installation of building (lighting and power)	l.sum	1,00	
V.O.2-a-118	Lightning Installation	l.sum	1,00	
V.O.2-a-119	CCTV	l.sum	1,00	
V.O.2-a-120	External lighting installation of building (6 reflektors on fasade)	l.sum	1,00	
V.O.2-a-121	Raw water connection in the building	l.sum	1,00	
V.O.2-a-122	Fire Alarming System	l.sum	1,00	
V.O.2-a-123	Access Control System	l.sum	1,00	
V.O.2-a-124	Ventilation	l.sum	1,00	
V.O.2-a-125	Toalets	l.sum	1,00	
Sub-total C				206.000,00
D. Other Equipments and Works				
V.O.2-a-126	Diesel Generator	l.sum	1,00	42.500,00
V.O.2-a-127	Electrical power cable from existing TS to UF building, FeZn 4x30, NYCWY 4x120mm2	l.sum	1,00	20.000,00
Sub-total D				62.500,00
E: Total 0+A+B+C+D				1.400.000,00

Parity: Price is DDU comply with Incoterms 2000

(VAT and Customs clearance are not included)

Iskra

Iskra | Iskra Sistemi, d. d. Stegne 21 SI-1000 Ljubljana, Slovenija | Telefon: +386 (0) 1 51 31 000 Telefaks: +386 (0) 1 51 11 512 www.iskrasistemi.si | ID DDV: SI 13278088 Matična številka: 5185726 Osnovni kapital: 28.065.567,31 EUR

1 General

This document presents the quotation for Water Treatment Plant Štip. The quotation is prepared based on the latest BOQ and basic design received from the customer.

2 Price Recapitulation

1	**Water Treatment Plant Štip (detail specification is presented in the attachment)**	**920,000.00 EUR**

3 VAT excluded

4 Paying conditions: comply with basic Contract

5 Warranty: 12 months after putting into commission.

6 Offer valid: 15 days

Very truly yours

Jože Ponikvar
Iskra Sistemi d.d.

Iskra Sistemi, d. d.
10

I faza		
REKAPITULAR	MKD	EUR
Gradežno sanacioni raboti	5,925,031.95	
Sanacija na fasada	3,480,707.16	
Magacin za reagensi	842,352.85	
Hidromehanička oprema i vrski	16,384,217.67	3,765.23
Priprema i doziranje na reagensi	279,871.23	204,106.98
Elektroinstalaterski raboti	208,327.10	71,899.85
Vkupno	**27,100,507.96**	**279,771.86**
DDV 18%	**4,878,091.43**	**50,358.93**
SE VKUPNO	**31,978,599.39**	**330,130.79**

			MKD	Euro
			27,100,507.96	279,771.86
			Euro	Euro
1 Euro =	61.50	MKD	440,658.67	279,771.86
			Overall in Euro	
				720,430.52

II faza		
REKAPITULAR	MKD	
Gradežno sanacioni raboti	1,311,221.89	
Pokrivanje na objektot i sanacija na fasada	9,421,060.00	
Elektroinstalaterski raboti	1,270,214.00	
Proekt na izvedena sostojba (gradežen del, elektrika)	41,800.00	
Proekt za upotreba i održuvanje na objektot (elektrika)	41,800.00	
Vkupno	**12,086,095.89**	
DDV 18%	**2,175,497.26**	
SE VKUPNO	**14,261,593.15**	

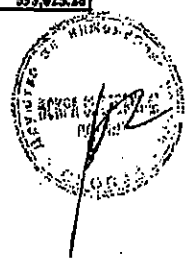
			Euro	
1 Euro =	61.50	MKD		**196,521.88**

Nepredvideni raboti	3,047.59
ALL TOTAL	**920,000.00**

BILL OF QUANTITY - I FAZA					
REKONSTRUKCIJA I SANACIJA NA FABRIKA ZA PRERABOTKA NA VODA ZA PIENJE - ŠTIP					
rod.br	Opis na pozicijata	edinična mera	količina	edinična cena	vkupno
1	2	3	4	5	6
A/	GRADEŽNO SANACIONI RABOTI				
I	TEHNOLOŠKA LINIJA ZA POVRŠINSKA VODA				
1	Zatvoranjata na vlez na linija za površinska voda (hr1)				
1.1	Priprema so postavuvanje na gradežni skele za izvedbaNJe na gradežnite aktivnosti i demontaža na istite po zavrshuvaNJe.	paušal	1.00	1,590.00	1,590.00
1.2	RaskopuvaNJe na ošteteni površini za završniot sloj od cementen malter na pod, vertikalnite površini i plafonot do osnovnata betonska konstrukcija so reporesnatena struktura.	m2	103.53	190.80	19,757.34
1.3	Sanacija na betonski pod so prethodno raskopuvaNJe na površinski degradiran sloj od beton ,podpremaz od vrzka "a" i betoniraNJe na nov sloj MB 30 so debelina 5cm so konstruktivno armiraNJe so armaturna mreža Q 335 i ankeri se komplet	m2	26.67	1,113.00	29,683.71
1.4	Sanacija na vidlivi pukнatini vo betonot na ziдovi i plafon so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za INJektiraNJe i zalevaNJe ADINGPOKS-I ili slična po karakteristiki na nea .	m2	76.88	1,166.00	89,642.08
1.5	Sanacija na oštetenite površini so dvokomponentna smesa na cementno polimerna osnova REPARTUR malter ili sličen na nego po karakteristiki.Vrz podlogata se nanesuva predpremaz od repartur malter penetrat so četka vrz koj se nanesuva završniot sloj od repartur malter završno obrabotен so špakla so maksimalna debelina na eden sloj od 1,5cm.	m2	76.88	954.00	73,343.52
1.6	OtstranuvaNJe na slojot za zaptivaNJe okolu dovodnata čelična cevka DN 700 mm na visina vo zatvorачkata i prizmenata komora po izvršena demontaža i na raspredelnite cevki kon raspredelnite komori vo sloj od 1-3cm okolu celiot obem na cevkata so celosno otstranuvanje na postoečkiot zaptiven materijal.				
	Probiv na cevka DN700 (0,022m3)	br	3.00	1,272.00	1,272.00
	Probiv na cevka DN500 (0,0196m3)	br	2.00	1,060.00	2,120.00
1.7	Izrabotka na nov zaptiven sloj na probivite na čeličnite cevki niz zid i ploča so upotreba na trajnoelastičen kit HIPERSIL ili sličen na nego po karakteristiki so maksimalna debelina na zaptiven sloj od 20 mm				
	Probiv na cevka DN700(0,022m3)	br	1.00	4,240.00	4,240.00
	Probiv na cevka DN500(0,0196m3)	br	2.00	3,180.00	6,360.00

1.8	ČistaNje na zatvoračnicata ,iznesuvaNje na gradežen šut,odvoz kon mesto odredeno za vremeno odlagaNje vo krugot na objektot so vremeno odlagaNje do odvoz.	paušal	1.00	1,060.00	1,060.00
	Vkupno zatvoračnica za vlez na površinska voda	**br**	**1.00**		**229,058.63**
2	**Prelivna komora (br1)**				
2.1	Priprema,so postavuvaNje na gradežno skele za izvedbaNje na građežnite aktivnosti i demontaža na istoto po završuvaNje.	paušal	1.00	1,590.00	1,590.00
2.2	OstranuvaNje na postoečkite malteri i premazi kompletno po celata površina na prelivnata komora do pojavs na osnovnata nosiva betonska konstrukcija so dobri jakosni karakteristiki na betonot.	m2	35.20	190.80	6,716.16
2.3	Sanacija na vidlivi pukнатini vo betonot so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za iNjektiraNje i zalevaNje ADNGPOKS-I ili slična po karakteristiki na nea .(se zema 10 % od površinata kako protivvrednost)	m2	35	1,166.00	4,104.32
2.5	Obrabotka na prelivni ivici so firmiraNje na ostra prelivna ivica so reparatur malter betonski malter.	m'	6.00	1,590.00	9,540.00
2.6	Priprema na betonskata podloga(kitiraNje) za poliuretanski nanosi za obezbeduvaNje na vrska pomegu stariot i noviot sloj.Izvedba na nov	m2	35.20	1,166.00	41,043.20
2.7	ČistaNje na prelivnata komora ,iznesuvaNje na gradežen šut,odvoz kon mesto odredeno za vremeno odlagaNje vo krugot na objektot so vremeno odlagaNje do odvoz.	paušal	1.00	636.00	636.00
	Vkupno prelivna komora	**br**	**1.00**		**63,629.68**
3	**Intervente-prelivna komora(br1)**				
3.1	Priprema so postavuvaNje na gradežno skele za izvedbaNje na građežnite aktivnosti i demontaža na istoto po završuvaNje.	paušal	1.00	1,590.00	1,590.00
3.2	OstranuvaNje na postoečkite malteri i premazi kompletno po celata površina na interventno prelivnata konstora do pojava na osnovnata nosiva betonska konstrukcija so dobri jakosni karakteristiki na betonot.	m2	51.69	190.80	10,244.05
3.3	Sanacija na vidlivi pukнатini vo betonot so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za iNjektiraNje i zalevaNje ADNGPOKS-I ili slična po karakteristiki na nea .(se zema 10% od površinata kako protivvrednost)	m2	5.369	1,166.00	6,260.25
3.5	Priprema na betonskata podloga(kitiraNje) za poliuretanski nanosi za obezbeduvaNje na vrska pomegu stariot i noviot sloj.Izvedba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdezmo "R" tri raca i zavrsen sloj od hiperdezmo edna raka.	m2	53.69	1,166.00	62,602.54
3.6	ČistaNje na zatvora-ničata ,iznesuvaNje na gradežen šut,odvoz kon mesto odredeno za vremena odlagaNje vo krugot na objektot so vremeno odlagaNje do odvoz.	paušal	1.00	636.00	636.00
	Vkupno intervente prelivna komora	**br.**	**1.00**		**81,332.85**

4	Raspredelni komori (br2)				
4.1	Priprema so postavuvaNJe na gradežno skele za izvaduvaNJe na građežnite aktivnosti i demontaža na istoto po završuvaNJe.	paušal	1.00	1,590.00	1,590.00
4.2	OtstranuvaNJe na postoečkite malteri i prepazi kompletno po celata površina na raspredelnata komora do pojava na osnovnata nosiva betonska konstrukcija so dobri jakosni karakteristiki na betonot	m2	26.42	190.80	5,117.26
4.3	Sanacija na vidlivi pukнatini vo betonot so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za iNJektiraNJe i zalevaNJe ADINGPOKS-I ili slična po karakteristiki na nea .(se zema 10% od površinata kako protivvrednost)	m2	2.612	1,166.00	3,127.21
4.5	Priprema na betonskata podloga(kitiraNJe) za poliuretanski nanosi za obezbeduvaNJe na vrska pomeju stariot i noviot sloj.Izvedba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdesmo	m2	26.42	1,166.00	31,272.12
4.6	CisteNJe na raspredelnite kocnori ,iznesuvaNJe na građežen šut,odvoz kon mesto odredeno za vremeno odlagaNJe vo krugot na objektot so vremeno odlagaNJe do odvoz.	paušal	1.00	636.00	636.00
	Vkupno raspredelni komori	br	2.00		83,485.18
5	Komori za predzenzacija				
5.1	Priprema so postavuvaNJe na gradežno skele za izvaduvaNJe na građežnite aktivnosti i demontaža na istoto po završuvaNJe.	paušal	1.00	1,590.00	1,590.00
5.2	OtstranuvaNJe na postoečkite malteri i prepazi kompletno po celata površina na komorite za predzenzacija do pojava na osnovnata nosiva betonska konstrukcija so dobri jakosni karakteristiki na betonot	m2	126.47	190.80	24,130.48
5.3	Sanacija na vidlivi pukнatini vo betonot so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za iNJektiraNJe i zalevaNJe ADINGPOKS-I ili slična po karakteristiki na nea .(se zema 10% od površinata kako protivvrednost)	m2	12.647	1,166.00	14,746.40
5.5	Priprema na betonskata podloga(kitiraNJe) za poliuretanski nanosi za obezbeduvaNJe na vrska pomeju stariot i noviot sloj.Izvedba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdesmo "R" tri raca i završen sloj od hiperdesmo edna raka.	m2	219.36	1,166.00	255,773.76
5.6	CisteNJe na komorite za predzenzacija ,iznesuvaNJe na građežen šut,odvoz kon mesto odredeno za vremeno odlagaNJe vo krugot na objektot so vremeno odlagaNJe do odvoz.	paušal	1.00	1,272.00	1,272.00
	Vkupno komori za predzenzacija	br	2.00		595,925.28



6	Komora za predfiltracija (komora za atrakcija)				
6.1	Priprema so postavuvaNJe na gradežno skele za izveduvaNJe na gradežnite aktivnosti i demontaža na istoto po zavrŠuvaNJe.	paušal	1.00	5,300.00	5,300.00
6.2	OtstranuvaNJe na postoečkite nalsari i premazi kompletno po celata površina na komorite za predfiltracija do pojava na osnovnata noniva betonska konstrukcija so dobri jakosni karakteristiki na betonot	m2	73.60	190.80	14,042.88
6.3	Sanacija na vidlivi pukntini vo betonot so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za iNJektiraNJe i zalevaNJe ADINGPOXS-1 ili slična po karakteristiki na nea .(se zema 10% od površinata kako protivvrednost)	m2	7.36	1,166.00	8,581.76
6.5	Priprema na betonskata podloga(kitiraNJe) za poliuretanski nanosi za obezbeduvaNJe na vrska pomeju stariot i noviot sloj.Izvadba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdesmo "R" tri raca i zavrŠen sloj od hiperdesmo edna raka .	m2	73.60	1,166.00	85,817.60
6.6	ČistaNJe na komorite za predtretmanNJe ,iznesuvaNJe na gradežen Šut,odvoz kon mesto odredeno za vremeno odlagaNJe vo krugot na objektot so vremeno odlagaNJe do odvoz.	paušal	1.00	1,272.00	1,272.00
	Vkupno komori za predtretman	br	2.00		230,928.48
7	Razgradeina komora bez bazen za predfiltracija(br1)				
7.1	Priprema so postavuvaNJe na gradežno skele za izveduvaNJe na gradežnite aktivnosti i demontaža na istoto po zavrŠuvaNJe.	paušal	1.00	6,360.00	6,360.00
7.2	OtstranuvaNJe na postoečkite nalsari i premazi kompletno po celata površina na komorite za predfiltracija do pojava na osnovnata noniva betonska konstrukcija so dobri jakosni karakteristiki na betonot	m2	216.60	190.80	41,327.28
7.3	Sanacija na vidlivi pukntini vo betonot so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za iNJektiraNJe i zalevaNJe ADINGPOXS-1 ili slična po karakteristiki na nea .(se zema 10% od površinata kako protivvrednost)	m2	21.66	1,166.00	25,255.56
7.5	Priprema na betonskata podloga(kitiraNJe) za poliuretanski nanosi za obezbeduvaNJe na vrska pomeju stariot i noviot sloj.Izvadba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdesmo "R" tri raca i zavrŠen sloj od hiperdesmo edna raka .	m2	216.60	1,166.00	252,555.60
7.6	ČistaNJe na komorite za predfiltracija ,iznesuvaNJe na gradežen Šut,odvoz kon mesto odredeno za vremeno odlagaNJe vo krugot na objektot so vremeno odlagaNJe do odvoz.	paušal	1.00	2,650.00	2,650.00
	Vkupno komori za predfiltracija	br	1.00		328,148.44

8	Bazeni za flokulacija				
8.1	Demontaža na postoečkata hidromehanička oprema če se izvrši so otstranuvaNJe na postoečkite ACC perforirani priemno-raspredelni cevki DN 250 zedno so elementite za pricvrstuvaNJe na istite za betonskite nosivi elementi	vlezeno vo del HMQ			
8.2	Priprema so postavuvaNJe na gradežno skele za izveduvaNJe na gradežnite aktivnosti i demontaža na istoto po završuvaNJe.	paušal	1.00	6,360.00	6,360.00
8.3	OstranuvaNJe na površinskiot degradiran sloj od hidroizolacija i betonski malter, kako i ostranuvaNJe na postoečkiot beton za pad do pojava na nedegradirana osnovna betonska konstrukcija	m2	220.00	190.80	41,976.00
8.4	Sanacija na vidlivi pukanini vo betonot so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za iNJektiraNJe i zalevaNJe ADINGPOXS-I ili slična po karakteristiki na nea .(se zema 10% od površinata kako protivvrednost).	m2	22.00	1,166.00	25,652.00
8.5	Izvedba na sloj za zaptivaNJe okolu probivite na cevkite F 300mm so trajnoelastičen kit HIPERSIL ili sličen na nego po karakteristiki (0,0118m3 po eden probiv ili vkupno 0,1062m3)	br	9.00	2,650.00	23,850.00
8.6	Sanacija na betonski pod so prethodno raskopuvaNJe na površinski degradiran sloj od beton ,podpresuva od vrska "u" I betoniraNJe na nov sloj MB 30 so debelina 15cm so konstruktivno armiraNJe so armaturna mreža Q 257 i ankeri za komplet	m2	64.80	1,431.00	92,728.80
8.7	Priprema na betonskata podloga(kitiraNJe) za poliuretanski nanosi za obezbeduvaNJe na vrska pomeju stariot i noviot sloj.Izvedba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdezno "R" tri raca i završen sloj od hiperdezno edna raka	m2	220.00	1,166.00	256,520.00
8.8	Sanacija na priemnite kanalčinja vo flokulatorite				
	-Otstranuvanje na površinskiot degradirani malter i hidroizolacija po celata površina od vnatrešna i nadvorešna strana na priemnite kanalčinja.	m2	45.806	190.80	8,739.69
8.9	Priprema na betonskata podloga(kitiraNJe) za poliuretanski nanosi za obezbeduvaNJe na vrska pomeju stariot i noviot sloj.Izvedba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdezno "R" tri raca i završen sloj od hiperdezno edna raka	m2	45.806	1,166.00	53,409.80
8.10	-ČisteNJe na površinite ,iznesuvanje na gradežen šut,odvoz kon mesto odredeno za vremeno odlagarje vo krugot na objektot so vremeno odlagarje do odvoz.	paušalno	1.00	4,240.00	4,240.00
	Vkupno flokulateri	br	2.00		1,026,952.57

9	Lamilarea tavelnik(bez)				
9.1	Demontaža na postoečkata hidrometalička oprema će se izvrši so ostranuvaNJe na postoečkite salonitni perforirani odvodni cevki za izbistrena voda zaedno so elementite za prieventuvaNJe na istite za betonskite nosivi elementi. Vo ovaa pozicija e vkluceno i ostranuvaNJe na salonitnite valovtii tabli .	vkluceno vo HMO			
9.2	Priprema so postavuvaNJe na gradežno skele za izveduvaNJe na gradežnite aktivnosti i demontaža na istoto po zavrsuvaNJe.	paušalno	1.00	6,360.00	6,360.00
9.3	OstranuvaNJe na površinskiot degradiran sloj od hidroizolacija i betonski malter, kako i ostranuvaNJe na postoečkiot beton za pad so pojava na nedegradirana osnovna betonska konstrukcija	m2	304.93	190.80	58,180.64
9.4	Sanacija na vidlivi puknatini vo betonot so širina od 0,1 -5cm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za INJektiraNJe i zalevaNJe ADINGPOKS-1 ili slična po karakteristiki na nea .(se zema 10% od površinata kako protivvrednost)	m2	30.49	1,166.00	35,554.84
9.5	Sanacija na betonski pod so posthodno raskopuvaNJe na površinski degradiran sloj od beton ,podpremaz od vrska "a" I betoniraNJe na nov sloj MB 30 so debelina 15cm so konstruktivno armiraNJe so armaturna mreža Q 257 I arkeri se komplet	m3	12.83	1,431.00	18,359.73
9.6	Priprema na betonskata podloga(kitiraNJe) za poliuretanski namaz za obezbeduvaNJe na vrska pomeju stariot i noviot sloj.Izvedba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdezno "K" tri raco i zavrsen sloj od hiperdezno edna raka .	m2	304.93	1,166.00	355,541.38
9.7	CisteNJe na lamilariot taloznik ,izneseuvaNJe na gradežen šut,odvoz kon mesto odredeno za vremeno odlagaNJe vo krugot na objektot so vremeno odlagaNJe do odvoz.	paušalno	1.00	5,300.00	5,300.00
	Vkupno lamilarea taložnik	br	2.00		958,607.18
10	Raspredelitelen kanal do filterski poliNJa(kota +2,40)				
10.1	Demontaža na postoečkite pateki, postaveni nad kanalite koi služat za komunikacija okolu filterskite poliNJa i odlagaNJe na prostor odreden od investitorot. So demontažata se opfateni i site nosivi elementi na pešačkata patека: profili i držači.	paušal	1.00	6,360.00	6,360.00
10.2	OstranuvaNJe na površinski degradiran malter i hidroizolacija od kanalot.	m2	136.79	190.80	24,191.53
10.3	Sanacija na vidlivi puknatini vo betonot so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za INJektiraNJe i zalevaNJe ADINGPOKS-1 ili slična po karakteristiki na nea .(se zema 10% od površinata kako protivvrednost)	m2	82.679	1,166.00	14,783.71

10.4	Sanacija na oštetenite površini so dvokomponentna smesa na cementno polimerna osnova REPARTUR malter ili sličen na nego po karakteristiki. Vrz podlogata se nanesuva predpremaz od repartur malter penetrat so četka vrz koj se nanesuva završniot sloj od repartur malter završno obraboten so gletarka so maksimalna debelina na eden sloj od 1,5cm.	m2	126.79	954.00	120,957.66
10.5	Priprema na betonskata podloga(klitiraNJe) za poliuretanski nanosi za obezbeduvaNJe na vrska pomeǵu stariot i noviot sloj. Izvedba na nov	m2	126.79	1,166.00	147,837.14
10.6	ČisteNJe na raspredelitelniot kanal , iznesuvaNJe na gradežen šut, odvoz kon mesto odredeno za vremeno odlagaNJe vo krugot na objektot so vremeno odlagaNJe do odvoz.	paušalno	1.00	3,180.00	3,180.00
	Vkupno raspredelen kanal				317,310.05
11	Galerija so odvoden kanal za ispuštaNJe na talog i pristap do zatvoračnica				
11.1	KršeNJe na gorna ivica na AB vertikalni zidovi na flokulatori , kanalami taložnici i raspredelitel kon. flokulatori so d=20 cm ,so visina od 20 cm od gorna ivica po cela dolžina .	m'	41.22	424.00	17,468.80
11.2	OplatiraNJe,podupiraNJe i armiraNJe na AB ploča nad galerija kon zatvoračnica MB30 d=15cm ,armirana soglasno armaturen detal. Vo cenata da se vklučí i armaturata.	m3	7.73	13,356.00	103,175.10
11.3	Priprema na novata betonskata podloga, postavuvaNJe na skrilna hidroizolacija(hidroseal) i nabavka i lepeNJe na podni ploči od veštački granit , fugi ispolneti so skrilna fug masa. Se komplet po daden detal.	m2	51.50	1,749.00	90,073.50
11.4	Priprema so postavuvaNJe na gradežno skele za izveduvaNJe na gradežnite aktivnosti i demontaža na istoto po završuvaNJe.	paušal .	100	6,360.00	6,360.00
11.5	Demontaža na postoečkite pateki od čeličen lim postaven na čelična nosiva konstrukcija , postaveni nad kanalite koi služat za komunikacija i odlagaNJe na prostor odreden od Investitorot. So demontažata se opfateni i site nosivi elementi na pešačkata pateka: profili i držači.	paušal	1.00	9,010.00	9,010.00
11.6	OtstranuvaNJe na površinski degradiraniot sloj od malter i hidroizolacija od trapezniot odvoden kanal i vertikalnite zidovi do primarnata nedegradirana betonska .	m2	277.78	190.80	53,000.42
11.7	Sanacija na vidlivi pukantini vo betonot so širina od 0,1 -5mm so upotreba na niskoviskozna dvokomponentna epoksidna smesa za INJektiraNJe i zalevaNJe ADINGPOKS-I ili slična po karakteristiki na nea .(se zema 10% od površinata kako protivvrednost)	m2	27.778	1,166.00	32,389.15

11.8	Sanacija na oštetените površini so dvokomponentna smesa na cementno polimerna osnova REPARTUR malter ili sl-en na nego po karakteristiki.Vrz podlogata se nanesuva predpremaz od repartur malter penetrat so četka vrz koj se nanesuva završniot sloj od repartur malter završno obrabotен so gletarka so maksimalna debelina na eden sloj od 1,5cm.	m2	277.71	954.00	265,002.12
11.9	Priprema na betonskata podloga(čistiraNJe) za poliuretanski nanosi za obezbeduvaNJe na vrska pomeju stariot i noviot sloj.Izvedba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdezmo "R" tri raca i završen sloj od hiperdezmo edna raka.	m2	277.71	1,166.00	323,891.48
11.10	ČistenJe na galerijata ,iznesuvaNJe na gradežen lut,odvoz kon mesto odredeno za vremeno odlagaNJe vo krugot na objektot so vremeno odlagaNJe do odvoz.	paušal	1.00	3,816.00	3,816.00
	Vkupno galerija so odveden kanal				904,188.57
12	Galerija pod raspredelen kanal				
12.1	Priprema so postavuvaNJe na gradežno skele za izveduvaNJe na gradežnite aktivnosti i demontaža na istoto po završuvaNJe.	paušal	1.00	4,452.00	4,452.00
12.2	OtstranuvaNJe na površinski degradiraniot sloj od malter i hidroizolacija od trapeziot odveden kanal i vertikalnite zidovi. Do primarnata betonska konstrukcija so nedegradiranata podloga	m2	326.77	190.80	62,347.72
12.3	Sanacija na vidlivi puknatini vo betonot so širina od 0,1 -5mm so upotreba na elakovisokoelastična dvokomponentna epoksidna smesa za iNJektiraNJe i zalevaNJe ADINGPOKS-I ili slična po karakteristiki na nea .(se zema 10% od površinata kako peptiyvrednost)	m2	32.677	1,166.00	38,101.38
12.4	Sanacija na oštetените površini so dvokomponentna smesa na cementno polimerna osnova REPARTUR malter ili slična na nego po karakteristiki.Vrz podlogata se nanesuva predpremaz od repartur malter penetrat so četka vrz koj se nanesuva završniot sloj od repartur malter završno obrabotен so gletarica so maksimalna debelina na eden sloj od 1,5cm.	m2	326.77	954.00	311,738.58
12.5	Priprema na betonskata podloga(čistiraNJe) za poliuretanski nanosi za obezbeduvaNJe na vrska pomeju stariot i noviot sloj.Izvedba na nov hidroizolacionen sloj so upotreba na poliuretanski sistem sostaven od prajmer edna raka, hiperdezmo "R" tri raca i završen sloj od hiperdezmo edna raka.	m2	326.77	1,166.00	381,013.82
12.6	ČistenJe na galerijata ,iznesuvaNJe na gradežen lut,odvoz kon mesto odredeno za vremeno odlagaNJe vo krugot na objektot so vremeno odlagaNJe do odvoz.	paušal	1.00	3,816.00	3,816.00
	Vkupna galerija pod raspredelen kanal.				801,469.50

13	Priprema na reagensi				
13.1	RuševiNje na postoečki AB bazeni za priprema na reagensi i platforma za pristap so kompresor	m3	10.54	7,950.00	83,793.00
13.2	Odvoz na gradežen šut do odredena vremena lokacija vo krugot na objektot	m3	12.648	636.00	8,044.13
13.3	Sanacija na zidovi po izvršeno ruševiNje so REPARTUR malter	m2	23.00	954.00	21,942.00
13.4	Sanacija na pod so cementen malter d=10cm	m2	18.00	1,060.00	19,080.00
13.5	MaterijaluvaNje na zid so cementen malter	m2	23.00	318.00	7,314.00
13.6	PostavuvaNje na zidni keramički pločki so lepeNje do visina na pisto 1,40m i zid kon tehnološki del so visina od 1,80m	m2	48.80	1,113.00	54,314.40
13.7	Izvedba na industrijski pod -namaz od epoksidna smola vo boja	m2	60.00	1,855.00	111,300.00
	Vkupno prethodna za priprema na reagensi				306,787.53
	VKUPNO LINIJA ZA POVRŠINSKA VODA				**5,925,031.95**
REKAPITULAR					
TEHNOLOŠKA LINIJA ZA POVRŠINSKA VODA					**5,925,031.95**
VKUPNO GRADEŽNI SANACIONI RABOTI					**5,925,031.95**
B.	**SANACIJA NA FASADA**				
1	*Montaža na skela,i demontaža na istoto po izvršena sanacija na fasada.*	paušal	1.00	63,600.00	63,600.00
2	SaniraNje na oštetenite mesta na objektot so upotreba na *REPARTUR MALTER* (ili sličen po karakteristiki na nego) so prethodno raskopuvaNje na oštetenite površini do naporuneten podloga , obeguvaNje i dobro navlažnuvaNje na površinite.	m2	280.00	954.00	267,120.00
3	Nabavka, izrabotka i montaža na skali pomegu kota +4,50 i kota 5,60 so dva skalilni kraka i platforma ,so ograda i rakofat (po detal) od čelični profil 50,50,5 i čelična rešetka so širina od 90cm(Elementite antikorodivno da se zaštiteni so topio pocinkuvaNje).	m	4.70	15,370.00	72,239.00
4	Nabavka, izrabotka i montaža na skali pomegu kota +5,60 i kota +6,50 so eden skalilen krak so ograda so rakofat (po detal) od od čelični profil i čelična rešetka so širina 80cm (Elementite antikorodivno da se zaštiteni so topio pocinkuvaNje).	m	1.20	15,370.00	18,444.00
5	Nabavka, izrabotka i montaža na skali pomegu kota +4,90 i kota +2,60 so eden skalilen krak so ograda so rakofat (po detal) od od čelični profil i čelična rešetka so širina 100cm (Elementite antikorodivno da se zaštiteni so topio pocinkuvaNje).	m	3.25	15,370.00	49,952.50
6	Nabavka, izrabotka i montaža na skali pomegu kota -0,10 i kota +0,80 vo galerija so eden skalilen krak (po detal) od čelični profil i čelična rešetka so širina 80cm (Elementite antikorodivno da se zaštiteni so topio pocinkuvaNje).	m	1.20	15,370.00	18,444.00

7	Nabavka izrabotka i montaža na zaštitna ograda na pateka nad galerija kon zatvoračnica od čelični ladnovalsni profili 30*30*3 kako horizontali i vertikali i anker pločki 100*100*4 antikorodivno zaštitena so toplo pocinkuvaNJe(po daden detal vo prilog) vkupno 41.2 ml	m'	41.20	1,621.80	66,818.16
8	Nabavka izrabotka i montaža na zaštitna ograda na pateka nad galerija kon zatvoračnica od čelični ovalen profil F100 kako rakofat i nosivi vertikali i prečki od kružen profil F50 na rastojanie od 50cm antikorodivno zaštitena so poliuretanski premaz.(po daden detal vo prilog)	m	19.00	21,200.00	402,800.00
9	Nabavka izrabotka i montaža na zaštitna ograda na pateka nad galerija kon zatvoračnica od čelični ovalen profil F100 kako rakofat i nosivi vertikali i prečki od kružen profil F50 na rastojanie od 50cm antikorodivno zaštitena so poliuretanski premaz.(po daden detal vo prilog)	m	19.00	15,370.00	292,030.00
10	Nabavka, i montaža na zaštitna proodna rešetka nad kanal za rasprostelba na voda do filterski poliNJa(so odnosnata ograda) na kota+4,00 od (po detal)od čelični profili i čelična rešetka .(Elementite antikorodivno da se zaštitenI so toplo pocinkuvaNJe).				
	so širina na kanal 1,50m(po daden detal vo prilog)	m	24.00	21,200.00	521,520.00
	so širina na kanal 1,0 m(po daden detal vo prilog)	m	44.00	15,370.00	685,502.00
11	Nabavka, i montaža na zaštitna proodna rešetka(bez zaštitna ograda) nad kanal za odvod na voda od izpusti vo galerija so širina od 1,50m od od čelični profili i čelična rešetka .(Elementite antikorodivno da se zaštitenI so toplo pocinkuvaNJe po detal).	m	43.75	15,370.00	672,437.50
12	Nabavka i montaža na intervertni premosni skali ,so dolžina od 3,5-5 m za intervertno vleguvaNJe vo tehnološkite edinici pri intervencii.	br	2.00	7,950.00	15,900.00
13	ŠminkaNJe na kompletna fasada so Adingflot-3 so prethodno nanesena Adingflo-3 podloga. Vo bela boja. So povrshno zlaka.	m2	604.00	530.00	333,900.00
VKUPNO SANACIJA NA FASADA					3,480,787.16
V/	MAGACIN ZA REAGENSI				
I.	Predhodni raboti				
1	RasmeruvaNJe i iskolČuvaNJe na objektot	paušal	1.00	3,180.00	3,180.00
2	Nabavka i postavuvaNJe na informativna tabla	br	1.00	3,180.00	3,180.00
3	Priprema na gradilište	br	1.00	3,180.00	3,180.00
4	KšeNJe na betonska podloga d=30sm	m2	8.00	1,060.00	8,480.00
5	KšeNJe na postojna atika d=10sm	m2	6.00	1,060.00	6,360.00
6	Utovar i odvoz na materijal	m3	2.20	371.00	816.20
		Vkupno:			25,196.20

II.	Zemjani raboti				
1	RaČen iskop zemja za temeli samci 1,0x1,0x1,0 br.5	m3	7.00	445.20	3,116.40
2	Utovar i odvoz na materijal	m3	7.00	371.00	2,597.00
3	NabivaNJe na temelna osnova	m2	7.00	106.00	742.00
4	Nabavka i ugraduvaNJe na tampon d=15sm pod temeli	m3	1.05	1,113.00	1,168.65
		Vkupno			7,624.05
III	Betonski raboti				
1	UgraduvaNJe na mršav beton MB20 d=10sm pod temeli	m3	0.70	4,452.00	3,116.40
2	BetoniraNJe A.B. temeli samci (1,0h1,0h0,80) h 7 so MB30	m3	5.60	6,996.00	39,177.60
3	ŠalovaNJe i betoniraNJe na A.B. stolbovi 30/30 so MB30	m3	2.00	10,070.00	20,140.00
4	ŠalovaNJe i betoniraNJe na A.B. gredi, nadvratnici i nadprozornici so MB30	m3	3.00	10,070.00	30,210.00
5	ŠalovaNJe i betoniraNJe A.B. serklaži 20/25sm so MB30	m3	0.50	8,692.00	4,346.00
6	ŠalovaNJe i betoniraNJe na A.B. cokleni gredi 20/50sm MB30	m3	2.00	10,070.00	20,140.00
7	ŠalovaNJe i betoniraNJe na A.B. atiki d=10sm N=35sm so MB30	m2	6.15	1,272.00	7,822.80
8	ŠalovaNJe i betoniraNJe na A.B. ploča i strea d=15sm (4,90h7,13) + (5,20h2,0)	m2	46.00	1,590.00	73,140.00
9	BetoniraNJe na patosna ploča vrz postoečki betonski pod so d=8sm so MB30 so dodatok na fiber vlakna, sečeno na poliNJa 185h205 završno helikotirano (priprema za epoksid)	m3	3.60	848.00	3,052.80
10	BetoniraNJe na beton za pod nad postojna strea d=(3-10)sm (7,63h0,80)	m2	6.20	583.00	3,614.60
		Vkupno			204,780.20
IV	Armirački raboti				
1	Nabavka, transport i ugraduvaNJe na betonsko železo od site profili	kg	1,500.00	54.06	81,090.00
		Vkupno			81,090.00
V.	Zidarski raboti				
1	ZidaNJe na zidovi d=20sm so beton. blok 20	m3	8.00	4,558.00	36,464.00
2	MalterisuvaNJe na fasadni zidovi so prodolžen malter komplet so skele	m2	55.00	530.00	29,150.00
3	MalterisuvaNJe na vnatrešni zidovi N= (2,0 - 3,50)m so prodolž. malter komplet so skele	m2	20.00	424.00	8,480.00
4	MalterisuvaNJe na vnatrešni zidovi N= (0 -2,0)m so cementen malter komplet so skele (priprema za epoksiden premaz)	m2	40.00	424.00	16,960.00
		Vkupno:			91,054.00
VI.	Fasaderski i molerofarbarski raboti				
1	Izrabotka cokle na fasada so akrilen vodootporen premaz Hidrostop	m2	10.00	530.00	5,300.00
2	Izrabotka na špricana fasada so mermerno brašno i var i farbanje so nadvorešna akrilna vodootporna boja	m2	55.00	318.00	17,490.00
3	Farbanje na vnatrešni zidovi vo nov i star del so epoksiden premaz	m2	80.00	954.00	76,320.00
4	Farbanje na vnatrešni zidovi i plafoni vo nov i star del so akrilna vodootporna boja, belo (2-3,5)m	m2	105.00	63.60	6,678.00

5	Farbanje na patos va nov i star del so epoksiden nanos vo boja so predhodna priprema na podlogata (brusenje, kitiranje i prajmer)	m2	77.00	1,855.00	142,835.00
6	Farbanje na betonski povrshini vo akrilna boja za beton so predhodno gletovanje	m2	28.00	424.00	11,872.00
7	Izrabotka na hidroizolacija od hidrotnal fleks vrz postoechkata betonska podloga so predhodno chistenje i kitiranje na fugite	m2	42.00	593.60	24,931.20
		Vkupno:			285,426.20
VII.	Limarski raboti				
	Nabavka i ugraduvanje odnostruk plastificiran belichen lim d=0,55mm so rebro vrz ramki 5/5sm				
	- nad betonska ploche zaedno so ramki	m2	40.00	795.00	31,800.00
	- nad nova strea komplet so dreven krov	m2	12.00	1,219.00	14,628.00
	Nabavka i ugradivanje na limeni elementi za krov od plastificiran belichen lim d=0,55mm				
	- likni RŠ=30sm	m'	20.00	636.00	12,720.00
	- kapi so slik! RŠ=22sm	m'	20.00	381.60	7,632.00
	- solbenki pod prozor RŠ=15	m'	2.50	318.00	795.00
	- krov na postojna strea RŠ=100sm	m'	8.00	795.00	6,360.00
	- limeni pokriv strea RŠ=30sm	m'	16.00	445.20	7,123.20
	- horizontalni olucl RŠ=40sm	m'	8.00	636.00	5,088.00
	- vertikalni olucl RŠ=40sm	m'	6.00	636.00	3,816.00
		Vkupno:			88,962.20
VIII.	Stavarski raboti				
1	- Trokrilen prozor 230/60 so edno otklopno krilo so kip mehanizam i termopan staklo od al.profili vo bela boja	br	1.00	19,080.00	19,080.00
2	- Dvokrilna vrata 200/250 so ispolna od seke od al.profili vo bela boja.	br	1.00	38,160.00	38,160.00
		Vkupno:			57,240.00
	Vkupno manipulacija za reagensi				842,332.85
G/	ELEKTRO INSTALACII				
I.	RAZVODNI ORMARI				
1:1	RAZVODEN ORMAR RT-1				
1.	Nabavka i montaza na razvoden ormar za montaza na zid so zashtita IP65. Ormarot e od dvojno dekapiran lim, aflarben so elektrostatska boja so brava za zaklutuvanUa i so dimenzii 400x400x200(vkluzi). Vo ormarot ke se vgradi sledniva oprema	br	1.00	6,360.00	6,360.00
2.	Grebenast prekinuvach 4G25A na vratata	br	3.00	932.80	932.80
3.	Grebenast prekinuvach 4G10A na vratata	br	7.00	551.20	3,858.40
4.	Zashtiten strujen prekinuvach FID 25/0.05 4r	br	1.00	2,915.00	2,915.00
5.	Avtomatski osiguruvich ETIMAT V 10A 1r 6KA	br	2.00	212.00	424.00
6.	Avtomatski osiguruvach ETIMAT V 10A 3r 6KA	br	7.00	1,033.50	7,234.50
7.	Avtomatski osiguruvach ETIMAT V 16A 1r 6KA	br	3.00	212.00	636.00
8.	Avtomatski osiguruvach ETIMAT V 16A 3r 6KA	br	1.00	1,033.50	1,033.50
9.	Bakarni sobirnici, POK elementi, redni VS klemi i drug siten materijal	br	1.00	5,861.80	5,861.80

I.2.	RAZVODEN ORMAR RT-2				
1.	Nabavka i montaža na razvoden ormar za montaža na yid so zaštita IP65.Ormarot e od dvojno dekapiran lim, ofarben so elektrostatska boja so brava za zaklučuvaNJe. i so dimenzii 400x400x200(vxšxd) Vo ormarot će se vgradi slednava oprema	br	1.00	6,360.00	6,360.00
2.	Grebenest prekinuvač 4Q25A na vratata	br	1.00	932.80	932.80
3.	Zaštiten strujni prekinuvač FID 25/0.05 4r	br	1.00	2,915.00	2,915.00
4.	Avtomatski osiguruvač ETIMAT V 10A 3r 6KA	br	4.00	1,033.50	4,134.00
5.	Avtomatski osiguruvač ETIMAT V 16A 1r 6KA	br	2.00	212.00	424.00
6.	Avtomatski osiguruvač ETIMAT V 16A 3r 6KA	br	4.00	1,033.50	4,134.00
7.	Šinski sobirnici, POK elemenvi, redni VS klemi ,izvojnici i drug siten materijal	br	1.00	4,929.00	4,929.00
	VKUPNO RAZVODNI ORMARI				23,084.80
II.	ELEKTRIČNI INSTALACII				
2.1	Nabavka na materijal, povrzuvaNJe na novoprektirnata tabla postoečkata instalacija i izrabotka na izvod od RT-2 do KO za napojuvaNJe na uredi za tretman na voda. Izvodot će bide izraboten od kabel tip PP00-Y 5x4 postaven na perforirani nosači na kabli so prosečna dolžina od 15m	br	3.00	10,133.60	30,400.80
2.2	Nabavka na materijal, povrzuvaNJe na novoprektirnata tabla na postoečkata instalacija i izrabotka na izvod za energetsko napojuvaNJe na analizatori za analiza na voda od RT-2. Izvodot će bide izraboten od kabel tip PP00-Y 3x1,5 postaven na perforirani nosači na kabli so prosečna dolžina od 25m	br	3.00	1,415.10	4,245.30
2.3	Nabavka na materijal i izrabotka na izvod od RT-2 do KO na aktuator. Izvodot će bide izraboten od kabel tip PP00-Y 5x2,5 postaven na perforirani nosači na kabli so prosečna dolžina od 35m	br	1.00	4,664.00	4,664.00
2.4	Nabavka na materijal i izrabotka na ednofazno fiko priklučno mesto napojuvano od RT-1 so kabel tip PP00-Y 3x2,5 so prosečna dolžina od 20m postaven delumno na perforirani nosači na kabli, delumno na kabelski opletnici(žični). Monofaznata priklučnica će bide za montaža na zid od silumin so zaštiten poklopec i stepen na zaštita IP65	br	5.00	2,618.20	13,091.00
2.5	Nabavka na materijal i izrabotka na trifazno fiko priklu-no mesto napojuvano od RT-1 so kabel tip PP00-Y 5x2,5 so prosečna dolžina od 15m postaven delumno na perforirani nosači na kabli, delumno na kabelski opletnici(žični). Trifaznata priklučnica će bide od silumin za montaža na zid so zaštiten poklopec i stepen na zaštita IP65	br	2.00	3,137.60	6,275.20
2.6	Nabavka na materijal i postavuvaNJe na kabel tip PP00-Y 3x2,5 vo metalno rebrasto crevo postaveno vo zemja na dlabočina od 0,6m i zaštitano od korozija za povrzuvaNJe na novoprektirniot magacin za reagensi i razvodna tabla RT-1 so prosečna dolžina od 30m	br	1.00	6,996.00	6,996.00

2.7	Isto kako poz 2.6 samo kabel PP00-Y 3x1,5	br	1.00	6,466.00	6,466.00
2.8	Nabavka na materijal i izrabotka na ednofazno šuko priklučno mesto vo magacinot za reagensi so kabel tip PP00-Y 3x2,5 so prosečna dolžina od 10m postaven na yid na kabelski opfatnici(šelni). Monofaznata priklučnica će bide za montaža na yid od silumin so zaštiten poklopec i stepen na zaštita IP65	br	2.00	1,590.00	3,180.00
2.11	Ispituvanje na električnata instalacija i izdavanje na izveštaj za ispravnosta na izvedenata instalacija	paušl	1.00	13,250.00	13,250.00
	VKUPNO ELEKTRIČNI INSTALACII				38,568.30
IV.	SIGNALNI I KOMANDNI KABLI				
4.1	Nabavka i postavuvanje na signalen kabel FTP cat 5 PVC postaven delumno na perforirani nosači na kabli, delumno na čelična krovna konstrukcija za povrzuvanje na RT-AVT so komandnite ormari na uredite za tretiranje na voda	m	100.00	85.86	8,586.00
4.2	Isto kako poz 4.1 samo za povrzuvanje na RT-AVT so analizatorite na voda	m	80.00	85.86	6,868.80
4.3	Isto kako poz 4.1 samo za povrzuvanje na RT-AVT so analizatorite na voda	m	80.00	85.86	6,868.80
4.4	Isto kako poz 4.1 samo za povrzuvanje na RT-AVT so postoečkite izmenden pult	m	50.00	85.86	4,293.00
	VKUPNO SIGNALNI I KOMANDNI KABLI				26,616.60
V.	GROMOBRANSKA INSTALACIJA				
5.1	Kontrola i dorabotka na veće postoečkite i izvedba na novi merni spoevi spored priloenite detali na veće postaveniie dosenoi vodovi	paušl	1.00	6,466.00	6,466.00
5.2	Merenje na prosečnot otpor na zazemjuvačot i izdavanje na atest.	paušl	100	13,250.00	13,250.00
	VKUPNO GROMOBRANSKA INSTALACIJA				19,716.00
V.I	ZAZEMJUVANJE I IZEDNAČUVANJE NA POTENCIJALITE				
6.1	Nabavka, postavuvanje vo tunelite i povrzuvanje na pocinkuvana čelična lenta FeZn 25x4 vo tunelite na novoproektiraniot magacin za reagensi	m	30.00	177.02	5,310.60
6.2	Izrabotka na merni spoevi na novoproektiraniot magacin za reagensi spored priloeniot detal	br	4.00	869.20	3,476.80
6.3	Dorabotka na linii za izednačuvanje na potencijalite i povrzuvanje na novo postavenite metalni objekti	paušl	1.00	7,685.00	7,685.00
6.4	Kontrola i dorabotka na veće postoečkite spoevi na vrskite za izednačuvanje na potencijalot	paušl	1.00	3,869.00	3,869.00
	VKUPNO ZAZEMJUVANJE I IZEDNAČUVANJE NA POTENCIJALOT				20,341.40
	VKUPNO ELEKTRIČNI INSTALACII				208,927.10

REKAPITULAR	MKD	EUR
Gradežno zanaetski raboti	5,925,031.95	
Sanacija na fasada	3,490,707.16	
Magacin za reagensi	842,382.85	
Elektroinstalaterski raboti	208,927.10	
VKUPNO	10,466,418.06	
DDV 18%	1,882,155.43	
SE VKUPNO	12,338,574.49	

BILL OF QUANTITY - I FAZA							
REKONSTRUKCIJA I SANACIJA NA FABRIKA ZA PRERABOTKA NA VODA ZA PIENJE - ŠTIP							
rad.br	Opis na pozicijata	edinečna merka	količina	edinečna cena MKD	edinečna cena EUR	vkupno MKD	vkupno EUR
1	2	3	4	5	6	7	8
G/	ELEKTRO INSTALACII						
1.	RAZVODNI ORMANI						
1.4.	RAZVODEN ORMAR RT-AVT						
1.	Nabavka i montaža na razvoden ormar za montaža na zid so zaštita IP65. Ormarot e od dvojno dekapiran lim, ofarben so elektrostatska boja i so brava za zaklučuvaNJe. Vo ormarot će se vgradi slednava oprema						
2.	UPS so avtonomija od 30min	br	1.00				
3.	centralnata upravuvanа edinicaPLC tip S7-300 ili nekoj drug tip so isti karakteristiki koj e kompatibilen so tipot na analizatori.	br	1.00				
4.	Transformator za vgraduvaNJe vo ormar so prenosen odnos 230/12 V 400VA	br	1.00				
5.	Ispravuvač na naizmeničen vo ednonasočen napon za vgraduvaNJe na šina vo ormar	br	1.00				
[illegible]	[illegible] ETMAT V 10A 1r CKA	br	1.00				

Evaluation Table

			Evaluation by Consultant						
		1	2	3	4	5	6	7=1/6	
No.	ITEM	ISKRA	Beton Stip (civil part)	Beton Kocani (civil part)	Tehnos Mont (Electromechanical part)	Hidroinzenering (Electromechanical part)	Selected	Ratio (%)	Evaluation
1	Building rehabilitation works	117,663	193,218.02	118,408.03			118,408.03	99%	OK
2	Coverage of the building and renovation of facade	209,785	214,685.93	246,130.89			214,685.93	98%	OK
3	Warehouse for reagents	13,697	28,783.12	26,375.74			26,375.74	52%	OK
4	Hydro mechanical equipment and connections	269,850			352,433.09	433,556.00	352,433.09	77%	OK
5	Preparation and dosing of reagents	208,658			271,255.05	312,986.59	271,255.05	77%	OK
6	Electrical installation works	95,941			97,873.20	112,930.62	97,873.20	98%	OK
7	As built design	680	8,130.08	1,000.00			1,000.00	68%	OK
8	Project for usage and maintenance	680	4,878.05	682.93			682.93	100%	OK
9	Contingency	3,048	not included	not included					
TOTAL (without vat)		920,000	449,695.20	392,597.59	97,873.20	112,930.62			

ZLETOVICA BASIN WATER UTILIZATION IMPROVEMENT PROJECT
Water Treatment Plant- Probistip and Municipality Stip

ORIENTAL CONSULTANT CO.,LTD (OC)
Special Assistance for Project Implementation (SAPI)

Office Address: Probistip Office: Cvetko Tonev Str. NN, 2210 Probistip
Tel/Fax No. 032- 481-521 / 032-484-733

July 25, 2012
Letter No. OC-IU/12/16

Mr. Stojan Milanov
Director
PE HS Zletovica

Subject: Evaluation of offer for reconstruction of Stip Municipality's Water Treatment Plant

Dear Sirs,

Attached sheet is our evaluation on the offer for Stip Municipality's Water Treatment Plant from ISKRA dated on July 21, 2012.
According to our comparison, the offer is acceptable so we recommend that you may proceed the contract procedure.

Sincerely yours,

Project Manager of the Consultant

ORIENTAL CONSULTANTS CO., LTD. ORICONSUL GLOBAL CONSULTING

C.C.: 1) File

Evaluation Table WTP Stip

			Evaluation by Consultant						
		1	2	3	4	5	6	7=1/6	
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6	Electrical installation works	95,941			97,873.20	112,930.62	97,873.20	98%	OK
7	As built design	680	8,130.08	1,000.00			1,000.00	68%	OK
8	Project for usage and maintenance	680	4,878.05	682.93			682.93	100%	OK
9	Contingency	3,048	not included	not included					
TOTAL (without vat)		920,000	449,695.20	392,597.59	97,873.20	112,930.62			

TECHNICAL SPECIFICATION FOR WATER TREATMENT PLANT of STIP (DRAFT re0 @120514)

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. This section covers the requirements for design, supply, installing, adjusting, and testing of the water treatment plant at the location of the planed Stip Water Treatment Plant (WTP).

B. All works shall be carried out in accordance with the applicable codes and standards, manufacturer's recommendations and the relevant specifications, which are the parts and/or all of the Original Contract of Package 4.

C. The Contractor shall furnish all labors, plants, materials, appliances necessary for the complete installation of the work specified herein, indicated on the drawings and related documents. The specification is intended to provide the outlines of the required installation, but is not intended to include all details of the design and construction.

D. The Contractor shall adopt his proprietary techniques to guarantee the safety and performance of the system in accordance with the concepts and criteria set by the specifications. The Contractor must employ staff experiences in the design and construction of the WTP.

E. The Contractor shall design the WTP for ease in operation and maintenance and to be energy efficient as well as less operation cost.

F. The work throughout shall be executed in the best and most thorough manner to the satisfaction to Engineer and Employer.

G. The Contractor shall assume responsibility and shall provide the services of a qualified Engineer to supervise the complete installation of equipment who shall be available for conducting the final acceptance test.

H. The Contractor shall give a notice to Engineer and Employer 7 days prior to the commencement of the rehabilitation work, as it needs to stop the operation of the reservoir.

I. The Contractor shall construct the pipelines as well as the fittings and, after the completion, restore roads as they were. The Contractor shall restore the surface of the ground as it was, after the completion.

J. The Contractor shall repair and restore any and all damages and/or deterioration incurred on the existing roads, pavements, curbs, vegetation, structures and/or installations which shall include telephone lines, electric lines, water pipes, regardless of public use or private use, in the Contractor's operations by back-filling, grading compacting, surfacing, paving, repairing and restoring to original conditions with the same kind of materials, unless otherwise specified or instructed by Engineer.

1.2 RELATED DOCUMENTS

A. Basic Design consists of Drawings, General Description, Technical Description, Calculation and Bill of Quantity (BoQ) and general provisions of the Contract, apply to this Section.

1.3 SCOPE OF WORK

A. The works to be executed under the Contract for rehabilitating the WTP include the design, execution, completion of the water treatment system with related civil, architectural, structural, building mechanical/electrical works and remedy of any defects therein, and all to meet the requirements specified herein.

B. Replace, rehabilitate, renovate improper and damaged parts such as malfunctioned equipment (valves, pipes, accessories, etc), damaged and improper concrete structures (surface of the concrete, leakage through concrete wall), and install missing required equipment such as compressor, and furnish, delivery to the site and install the complete rehabilitated WTP including all equipment, valves and piping, electrical, instrumentation and control works, and all necessary accessories and incidents for the complete system.

C. Complete all connections to the WTP from the HSZ connection manhole extended from Intake 3 to get raw water.

D. Maintain the present water supply system utilizing raw water supplied from groundwater pumping stations.

E. Preparation of detail drawings, shop drawings and design calculations for rehabilitating the WTP including selection of the mechanical and electrical equipment capacities, design of tank dimensions, piping and all accessories to comply with the concepts and criteria set by the manufacturer's recommendations, the specification and drawings.

F. As-built drawing and as-built design shall be prepared by the Contractor.

G. Electrical and control works for the WTP shall include the motor control panel (MCP), remote control switches, meters and instruments, motor controllers and starters, wires and cables, conduits, cable trays, relays, programmable logic controllers (PLC), and other necessary accessories.

H. Prepare corrosion protection and painting of all equipment and piping including all exposed and embedded materials.

I. Provide complete freeze protection of the equipment, vessels, tanks, water pipes and etc where required.

J. Supply instruments for fast chemical tests, glassware and testing chemicals if they are necessary.

K. Conduct the complete testing, adjusting and commissioning of the entire WTP, including supply of instruments for operation and testing, and submission of the reports.

L. Provide list of spare parts, list of consumables and list of lubricants for operation after taking over for approval of Engineer, and provide mandatory spare parts.

M. Conduct the training of the employer's personnel for the operation and maintenance during the construction.

1.4 EXTENT OF WORK

1.4.1 New Construction and the Existing Facilities' Rehabilitation Work

A. Rehabilitation civil works, that are specified in the description of the Bill of Quantity (BoQ), shall be performed at/in the existing Surface Water Treatment line, which are parts of the existing facilities as follows:

1. Inlet structure of surface water treatment
2. Receiving chamber
3. Emergency overflow chamber
4. Distribution chambers
5. Pre-ozonation chambers
6. Pre-flocculation chambers
7. Distribution chambers to Pre-flocculation basins
8. Flocculation basins
9. Lamellar sedimentation basins
10. Distribution channel to filter fields (elevation +2.40)
11. Galley with drainage channel for sludge discharge and gate access
12. Gallery under distribution chamber

B. Rehabilitation civil works of the existing façade, that are specified in the description of the BoQ, shall be performed.

C. Construction of new chemical storage, that are specified in the description of the BoQ, shall be performed.

D. Expand work of the existing flow-meter chamber shall be performed to install a flow-meter, a needle valve and manual valve.

1.4.2 Existing Well Water Treatment Rehabilitation Work

A. Rehabilitation civil works, that are specified in the description of the BoQ, shall be performed at/in the existing Well Water Treatment line, which are part of the existing facilities as follows:

1. Inlet structure of well water treatment line
2. Emergency overflow chamber
3. Receiving chamber
4. Aeration cascades
5. Stilling chamber
6. Pre-ozonation chamber
7. Horizontal sedimentation basin

1.4.3 Hydrometrical Equipment Work for Surface Water Treatment Line

A. Equipment such as a needle valve, manual valve and so on, that are specified in the description of the BoQ, shall be installed newly and the existing equipment shall be remove, clean, storage and reinstall and/or replace with new one as per the said description of the BoQ in the existing facilities as follows:

1. Equipment in Intake structure
2. Equipment in Gallery for discharge from surface treatment
3. Equipment in Pre-flocculation basins
4. Equipment Flocculation

5. Equipment in Laminar segmentation basins
6. Equipment in Flow-meter chamber
7. Hydrophone unit and pumps for analysis
8. Compressor for pneumatic control air

1.4.4 Reagent Dosing System and Turbine System

A. Dosing systems consists of pumps, preparation block plant unit with power supply and control system and related materials/devices, that are specified in the description of the BoQ, shall be installed newly as follows:

1. Dosing system of Aluminum sylph solution
2. Dosing system of poly-electrolyte solution
3. Dosing system of lime-milk solution

B. Ozone-turbine system consists of submarine turbine, power supply and control system and related materials/devices, that are specified in the description of the BoQ, shall be installed newly.

C. All connection of these systems mentioned above shall be performed.

1.4.5 Electrical System Work

A. All power supply system including feeders, circuit breakers for feeders and motor control system shall be installed as per the Water Treatment Plant system to be installed and rehabilitated.

B. All power supply system including feeders, circuit breakers for feeders and motor control system shall be installed for the new chemical storage and rehabilitated area as required.

C. Lighting and socket outlet system shall be provided in the chemical storage and rehabilitated area as required.

D. Fire alarm and detection system shall be installed in the chemical storage and rehabilitated area as required to comply with Macedonian laws, codes or standards.

E. The existing lightning protection system shall be rehabilitated to comply with Macedonian laws, codes or standards.

F. Grounding system shall be installed/rehabilitated to comply with Macedonian laws, codes or standards and the requirements from the water treatment equipment.

1.4.6 Heat Ventilation and Air Conditioning (HVAC) System Work

A. Ventilation system shall be installed in chemical storage.

B. HVAC system shall be installed in the plant areas as required.

1.5 WORK EXCLUDED AND/OR REVISED FROM THE ORIGINAL BASIC DESIGN

A. The following civil works will be excluded from the Scope of Work.

1. Construction of new roof and,
2. Construction of new façade to structure/support the said new roof.

B. The following mechanical and electrical works will be excluded from the Scope of Work.

1. Lighting fixtures on the roof will be changed to floodlights as per the cancellation of the roof.
2. Fire detectors on the roof will be cancelled as per the cancellation of the roof.
3. Ventilation system will be cancelled as per the cancellation of the roof.
4. Lightning protection conductor on the roof will be cancelled as per the cancellation of the roof. However, rehabilitation work of the existing lightning protection shall be performed. (See article 1.4.5 E)

PART 2 – APPLICABLE DOCUMENTS

2.1 CODES, STANDARDS AND OTHER REFERENCES

A. The following codes, standards, and others shall be referred to the design, construction of the WTP.

1. Drinking Water Standard (Macedonia) No 46/2008
2. Macedonian National Standard MKS
3. Certificate of European (CE)
4. European Standards (EN)
5. International Electro technical Standards (IEC)
6. International Organization for Standardization (ISO)
7. German industrial standards (DIN)
8. Japanese Industrial Standards (JIS)
9. Any other internationally recognized codes and standards

PART 3 - REQUIREMENTS

3.1 GENERAL

A. The Contractor shall himself make all necessary independent investigations and studies to ensure that the design of the water treatment system, including all foundations, structures, buildings and site development meets with the requirements of the Contract and is suitable and adequate for the purpose.

B. The drawings attached to the Contract Documents for certain of the buildings are indicative only and represent the minimum construction, quality, dimensional and space requirements. The Contractor shall develop the detail design based on the requirements of the specification and drawings and execute the complete works as required.

3.2 3.2 PERFORMANCE

A. The present water work, receiving raw water from groundwater pumping stations and supply water to the municipality shall be maintained even after rehabilitation of the WTP was completed.

B. The WTP shall be able to supply treated water of 43200 m^3 daily. The followings are the basic design conditions of WTP.

Daily water supply	:	43,200 m^3/day
	:	1,800 m^3/hour
	:	30,000 L/min
	:	500 L/sec

C. Raw water quality supplied from intake 3 is described hereunder.

Item	Design figure for water treatment			Design figures for sludge treatment OM cost
	Adoption for OM cost	Min	Max	
Turbidity (NTU)	5.5	3	1000	22
pH	7.5	6	9	7.5
Alkalinity (mg/L as CaCO3)	30	30	62.5	30

D. The water quality to be supplied from the WTP shall meet the requirements of the Macedonian Standard 46/2008, some of major items of the water quality are described hereunder:

Parameter	Maximum allowed values (MAV)	Unit	Note
Aluminum	0.2	mg/L	
Ammonium	0.50	mg/L	
Color	20	mg/l Pt/Co scale	Acceptable for consumers
Clostridium perfringens (including spores)	0	number/100 mL	
Electro-conductivity	1000	μ Scm-1 at 20°C	
Chlorides	250	mg/L	
Coliform bacteria	0	number /100 mL	
pH-value	6.5-9.5	pH units	
Manganese	0.05	mg/L	
Odor	-	-	Acceptable for consumers
Turbidity	1.0	NTU units	
Sodium	200	mg/L	
Consumption of Kmn04	8.0	mg/L	
Taste	-	-	Acceptable for consumers
Sulfate	250	mg/L	
Iron	0.2	mg/L	

Source: Macedonian Standard (Official Gazette of the Republic of Macedonia" No. 46 on 07.04.2008) Drinking Water Standards (Extraction)

E. The plant shall be 24 hours a day, all year round continuous operation and fully automatic operation unless otherwise specified or indicated.

F. Chemical dosage pump shall be adjusted automatically and manually based on the turbidity of the raw water to achieve proper coagulation.

G. Inflow amount shall be manually adjustable by controlling the inlet motor driven needle valve opening to keep a constant operation of the WTP and to stop or start the operation based on the reservoir water level

H. The equipment such as pumps and compressors shall be provided with back-up unit to ensure the system reliability. If the duty is one unit, the back-up is 100%, so the total will be two units. The one (1) duty and one (1) standby unit shall be automatically altered once one unit stops the operation, that operation equalizes each equipment running time.

3.3 DESIGN REQUIREMENTS

A. The design shall ensure simple and efficient operation and maintenance with high economy and low operation and maintenance costs. The Contractor, in the design and execution of the works, shall include and provide all necessary additional or auxiliary equipment and materials incidental to the works to ensure that overall performance standards are complied with and to ensure that complete and correctly functioning plant and system are provided.

B. Any equipment, material, component or item for which the design is under the responsibility of the Contractor, shall be compatible with its required function and performance of each system as a whole. Any item of equipment, material or component thereof, which has been previously approved, may not be accepted if the system of which it is part does not give the required performance. It is the Contractor's responsibility to ensure the adequate functioning of entire system.

C. Systems, equipment and facilities to be designed and supplied by the Contractor shall be complete operating system, including any part, material or process which is essential to this requirement, whether or not specifically called for, detailed or defined, and shall be entirely suitable for the purpose intended and of high quality consistent with the specified requirements. Each system shall be designed to perform the required service with maximum reliability.

D. The design, dimension and materials of all parts shall be such that they will not suffer damage under the most extreme operating conditions nor result in deflections and vibration that may adversely affect the structure integrity or the operation of the plant or equipment.

E. The Contractor shall design and construct the water treatment system to meet the requirements of the Contract and to the approval of Engineer. Approval by Engineer shall not relieve the Contractor from any of his responsibilities under the Contract.

F. The Contractor shall complete the design within a maximum period of one (1) months from the Commencement Date. The complete design with all supporting calculations, documents, drawings and other relevant data shall be compiled and bound into one Contractor's Document entitled "Contractor's Final Design". The Contractor's final design document shall be submitted for the review and approval of Engineer. Construction, procurement or manufacturing shall not commence prior to such approval being received unless otherwise expressively agreed by Engineer.

G. The design shall conform to the best and most up-to-date international engineering practice. Plant, equipment, materials and systems shall be designed to take account of standardization and interchangeability of the components and parts.

H. The design shall include the requirements of all relevant and prevailing national and local statutory, by-laws and orders. The Contractor shall be responsible for satisfying the requirements of relevant official authorities in relation to the design and shall obtain all necessary permits, and approval of the relevant authorities.

I. All of the works shall be designed using metric system.

J. All plant shall be designed for ease of access and simplicity of installation, adjustment, operation, maintenance and repair.

K. Equipment to be provided in duplicate, to function as working and standby units shall be designed, so far as possible, to allow either unit to be set up and tested independently of the other unit, to ensure that the equipment are in working order.

L. Plant shall be designed with integral metering sufficient to enable all normal operating adjustments without use of the external test equipment.

M. An automatic shutdown system of the plant and the manual emergency stop bottom on the motor control panel shall be provided in order to prevent an overflow in the case of any of the water levels exceed the high water alarm level. Inlet motor valve shall be closed automatically when the water level of the reservoir is over the high water alarm level. On the other hand, the inlet motor valve shall be opened automatically to a set opening when the water level is less than a certain level.

N. Outdoor water mains will be buried under the freeze line, the connection pipes between the underground main and WTP equipment or underground concrete tanks shall carefully be studied against the freeze of water in the pipe. The Contractor shall provide necessary measures such as thermal insulation, heat trace, etc., to avoid the destruction of pipe caused by the freeze of water where required.

3.4 PHYSICAL CHARACTERISTIC

A. Size of plant and equipment shall not be significantly bigger than that of shown on the drawings or otherwise shall generally be selected to fit into the space allocated therefore.

B. If certain characteristics of any equipment or material proposed by the Contractor for use in the works, such as dimensions, power requirements, connections, arrangement, composition and the like, vary from the specifications or drawings then such characteristics may be varied by the Contractor at his own expense, but always subject to prior approval of Engineer.

3.5 ENVIRONMENTAL REQUIREMENTS

A. All plant, materials and systems shall be designed to operate in severe cold climate, with no degradation in performance, over the design life, due to climatic conditions. The works shall be designed to operate efficiently under the following climate conditions:

1.	Ambient outside air temperature	:	Minus 18 °C to +35 °C
2.	Ambient outside relative humidity	:	35% to 90%

B. The plant room will be provided with the heating system; however, the Contractor shall carefully study and analyze the possibility of freeze water in the tanks, vessels and piping systems. It is the Contractor's responsibility to provide the necessary measures such as heat-pipe, heat-trace, electric heater, etc., to avoid the freeze of water.
The room conditions shall be maintained as follows:

1.	Chemical storage area	:	Not less than +15 °C in Winter

3.6 MATERIALS

3.6.1 General

A. All materials and equipment shall be new and undamaged, and of a design, and construction to conform to the specification and relevant codes and standards.

B. Provide materials and equipment which are the standards products of a manufacturer regularly engaged in the manufacture of the products and that essentially duplicate items that have been in satisfactory use for at least 2 years prior to contract unless otherwise with the certificate from manufacture. Equipment shall be supported by a service organization that is, in the opinion of Engineer, reasonably convenient to the site.

C. Provide materials and equipment suitable for the intended services and conditions. Where specific materials are mentioned in the specification, these are provided to identify a minimum standard of quality, durability and performance.

D. Obtain all piping material (pipe, tees, elbows, redncer, etc.) from the same manufacturer to ensure material compatibility and quality and dimensional consistency.

E. Each major item of equipment shall have the manufacturer's name, address, type or style, model or serial number and rating on a plate secured to the item of equipment.

F. Stainless steel shall be employed wherever possible. Iron and steel where used shall in general be galvanized or by exception may be painted.

3.6.2 PIPING

A. Piping materials such as ductile cast iron pipe (DCIP), stainless steel, steel pipe, high density polyethylene (HDPE) pipe, PVC or other non-corrosive materials shall be used for piping system, the Contractor shall propose recommended pipe materials to be used for the WTP during the detail design and a list of pipe material shall be submitted to Engineer for approval prior to commencement of the works.

3.7 TREATMENT PROCESS

A. The WTP shall consist of the inlet valve, receiving chamber, ozonation chamber, rapid mixers, flocculation tank, two sedimentation tanks, eight (8) sand filters and three (3) back wash pumps, and filtered water reservoirs, chemical dosage equipment (tanks and pumps), disinfection facilities, one set of the water supply pump unit for WTP work, and piping works, valves, flow meters, electrical and control works and all other incidental works.

B. The treatment procedure shall be in accordance with the requirements of the Basic Design.

3.8 OTHER WORKS

3.8.1 General

A. Key points are described below, other parts shall be referred to the Basic Design.

3.8.2 Electrical Works

A. The WTP control system shall include enclosure, main and branch circuit breakers, starters, contactors, and reset buttons, relays, meters, selector switches, push buttons, and pilot lights, PLCs, circuit control items for electrical control of the various plant components, and all necessary wiring and tubing.

B. Electrical motor driven equipment shall be provided complete with motors, motor starters and controls. The motor starter shall be provided complete with properly sized thermal overload protection and other appurtenances necessary for the motor.

C. Electrical control system components shall be completely wired and mounted in the enclosure at the manufacturer's factory and tested prior to shipment from the factory.

D. The electrical service available is 380/220V, 3Phase, 50Hz, 3+1 wires (TN-C-S System).

E. The magnetic motor starter with overload and under-voltage protection shall be provided for the motor. The starter shall have thermal overload protection in each phase and short circuit protection.

F. If operating lead equipment should stop, standby equipment, acting in response to setting of failure signal, shall automatically start and stay in operation.

G. The operation of duty and standby equipment shall be rotated automatically to equalize the total running time

3.9 SUBMITTALS

A. The Contractor shall prepare a methodology and program for the design works and submit to Engineer within 15 days of the Commencement Date for review and approval.

B. The Contractor shall submit the detail drawings to Engineer for approval. The detail drawings shall contain complete piping, wiring, schematic flow diagram and any other details required to demonstrate that the system has been coordinated and will properly function as a whole.

C. The detail drawings shall show proposed equipment layout and anchorage of equipment and appurtenances, and equipment relationship to other parts of the work including clearance for installation, maintenance and operation.

D. The Contractor shall submit the manufacturer's descriptive, technical literature, catalog cuts, performance charts, pump curves, list of materials, list of equipment and specifications for the proposed equipment.

E. The Contractor shall submit the following O/M manuals:

1. Operation and maintenance manual.
2. Parts manual in original language or English. The parts manual shall include illustrations and exploded views necessary for the proper identification of all parts, assemblies and subassemblies.

F. The Contractor shall prepare and submit to Engineer, at least one month prior to Tests on Completion being carried out, detailed test procedures and schedules for the approval.

G. The Contractor shall prepare and submit a comprehensive training program for each item or system with full course notes, reference material and timetable at least two months before particular training is to commence.

H. The Contractor shall submit the as-built design including listed below in accordance with Macedonian laws for construction:

1. Technical report
2. Description of real Engineering geological conditions
3. As-built BoQ
4. As-built drawings with details and others

3.10 LABORATORY EQUIPMENT

Not Applicable

3.11 SPARE PARTS AND SPECIAL TOOLS

A. The Contractor shall provide manufacturer's recommended spare parts list for the pumps and all other equipment sufficient for two years operation after taking over.

B. Submit special tools if it is necessary for maintenance and testing of the all water treatment equipment. Such tools shall be provided in suitable containers and delivered to the Employer prior to the taking over.

C. The Contractor shall submit the list to Engineer for the approval and provide the mandatory spare parts.

3.12 CONSUMABLES

A. The Contractor shall provide liquid or solid chlorine sufficient for the period of three (3) months operation after taking over, but not longer than 6 months. Other consumables such as oil, grease and lubrication shall be provided sufficient for the period of two (2) years operation after taking over.

B. The Contractor shall provide chemicals for analyzing the water quality sufficient for the period of two (2) years after taking over.

C. The Contractor shall submit the list to Engineer for the approval.

3.13 DELIVERY, STORAGE AND HANDLING

A. Protect material and equipment delivered and placed in storage from the weather, excessive humidity and excessive temperature variation, dirt, dust, or other contaminants.

3.14 INSTALLATION

A. Install pumps, blowers and other equipment in accordance with the written instructions of the manufacturers.

B. Adequate size of the concrete foundations for the equipment shall be provided.

C. Foundation bolts, as required, shall be furnished for proper positioning during the placement of the concrete.

D. The Contractor's design shall ensure that all plant and components comprising the works incorporate all necessary guards, rails, locks and all other safety measures necessary to protect operation and maintenance personnel from injury or accident.

E. Guards shall be provided to all exposed moving parts such as gears, belts and fans and to prevent contact with live electrical components. Sharp or protruding surfaces shall be avoided.

F. Suitable access ladders, with enclosed cages if necessary, shall be provided to shafts, towers, manholes, pits and roofs.

3.15 FINISHES, IDENTIFICATION, LABELS AND HAZARDS SIGNS

A. Generally the finishes material and color of all plant, cabinets and other items comprising the works shall be subject to the approval of Engineer. The Contractor shall submit proposed color schemes, with samples to Engineer for approval.

B. All plant, equipment, valves, parts, assemblies, cables and pipe-work comprising the works shall be permanently and legibly marked for identification, with warning of hazards as appropriate. All written markings shall be in Macedonian and English.

C. Identification, generally, shall be with plates, labels or color coding but stamping or engraving may be permitted in certain circumstances.

D. The Contractor shall submit to Engineer for approval a schedule of all labels, plates, color codes and other markings as appropriate. The schedule shall indicate:

1. The size of the plate or label, and
2. the material and its color to be used, and
3. information to be shown on the plate or label, such as;

    a) item functional description
    b) model and serial numbers
    c) year of manufacture
    d) manufacturer's name
    e) power rating or capacity
    f) a warning to the danger or hazard, and

4. details of proposed color coding to be used for wires, cables and pipes, and/or
5. details of any stamps, engravings or other necessary markings

E. Each cable assembly shall be marked with its designation as it appears on drawing or cable schedules. The markings shall be permanently affixed to each end of the cable and connections and check terminals shall be clearly labeled for correct connections of wires and cables.

F. Storage areas for hazardous materials or locations where operation and maintenance staff are liable to come into contact with hazardous materials shall be clearly marked with appropriate warning signs.

PART 4 - VERIFICATION

4.1 TESTS AND INSPECTION

4.1.1 General

A. The Contractor shall provide sufficiently qualified personnel, materials, testing equipment, instruments and consumables for testing. As a general rule, the Contractor shall conduct inspections, testing and commissioning for himself of all plant, materials and items to ascertain for himself that the item conforms to the requirements of the Contract. After satisfying himself that it does comply, the Contractor shall then apply to Engineer in writing for the completion tests to be made, in the presence of Engineer.

B. The Contractor shall prepare a general testing program for the works and submit to Engineer for approval before 45 days of the tests. Engineer shall be given the opportunity of witnessing the all tests, and the Contractor shall give at least 7 days' notice of all tests to be carried out.

C. The Contractor shall provide and deliver all plant, materials and samples for all required tests, supplied to the place, in quantities and at the appropriate time and with all necessary cutting, machining, labeling and other preparation and transportation. Wherever possible, test specimens shall be submitted by the Contractor with the request for approval of the items of plant or material concerned.

4.1.2 Test on Completion

A. Prior to substantial completion and taking over of the works, the Contractor shall conduct completion inspection, testing and commissioning of all items to ascertain for him that the completed works conform to the requirements of the Contract.

B. The results of Tests on Completion shall be submitted to Engineer within 14 days of them being completed, and shall include:

1. Completed test result sheets, signed by the Contractor and Engineer.
2. A record of any engineering changes necessary to correct test results that did not comply with the Specification.

4.2 FLUSHING AND DISINFECTION OF WATER SUPPLY SYSTEM

A. Water supply system shall be flushed and disinfected for potable water use. The Contractor shall provide all labor, plant and material required to carry out the flushing, including swabs, flanged ends, temporary pipe-work, temporary tapings and connections where necessary. The Contractor shall carry out disinfection and be fully responsible for all aspect of the disinfection of the water supply pipes including installation, maintenance and removal of all temporary works.

B. The Contractor shall give a notice 24 hours before to Engineer that the reservoir is ready for flushing.

C. Prior to the commencement of these works, the Contractor shall submit a method statement for flushing and disinfection of water supply pipes to Engineer for approval.

D. The disinfection shall not commence until the cleaning and flushing process has been completed to the satisfaction of Engineer.

E. After flushing and disinfection have been completed, the Contractor shall be sampled and tested for aesthetic, bacteriological and chemical tests, and test result shall be submitted to Engineer.

4.3 OPERATION AND MAINTENANCE MANUALS

A. Prior to taking over of the works under Conditions of the Contract, the Contractor shall prepare detailed operation manual for ultrafiltration WTP plant in Macedonian and English and maintenance manuals for installed equipment in original manuals (English), for Engineer's review and consent. The works shall not be considered complete for the purpose of Taking Over until such manuals have been submitted and approved.

B. The manuals shall be provided for all parts of the works as required by the specification or as directed by Engineer and shall be sufficient in detail such that the Employer shall be able to operate and systematically maintain the works after completion.

C. The manual shall contain, but shall not be limited to, the following:

1. The purpose of the manuals and their composition;
2. Complete and accurate technical description of the system and all plant contained in the system describing the technical characteristics, operating conditions and performance, using text and/or drawings;
3. The function of each part of the system or plant within that system;
4. Installation and adjustment procedures describing unpacking, mounting, wiring and method of adjustment of each component;
5. Operating procedure from start-up to close-down with all intermediate stages;
6. A numerical identification system for component, valves, control points and units;
7. A description of normal value settings, flow diversions, and operational requirements;
8. Complete list of all modules, components and parts of all plant within the system giving the original manufacturer's name, address and part number and type. Name and address of local firm or firm in nearby countries able to provide these parts shall also be given;
9. Complete list of all consumables, and suitable alternatives, with the name and address of the original supplier and address of the local firm or firm in nearby countries able to provide these materials or alternatives;
10. Maintenance instructions describing, in detail, the procedures and test equipment and tools required to properly maintain the performance of the equipment, repair and operate the plant and equipment installed at the site, including preventive maintenance schedule and check sheet samples
11. Trouble-shooting symptoms list with chart and description of symptom and chart provide diagnostic procedures for trouble-shooting for each unit;
12. Safety measures to prevent accidents to persons or plant.

D. Manual must refer to the exact model, style and type of plant provided.

E. Two advanced copies of the final draft manuals with as-built drawing shall be provided to Engineer for his review and consent, no later than 1 month before the schedule date for commissioning of the relevant plant or system. After review and consent of Engineer, the Contractor shall provide 6 copies of the final version incorporating all amendments and corrections, by no later than 0.5 month before the actual date for commissioning.

4.4 TRAINING OF EMPLOYER'S STAFF

A. The Contractor shall prepare a comprehensive training program for each item or system with full course notes, reference material and timetable. The Contractor shall use visual media and graphics as much as possible throughout the training process.

B. The training program shall include the following components:

1. Courses on general principles with overall objectives for each section;

2. Planned lessons with general guidelines for the items containing performance objectives;

3. Lesson plan shall be divided into such major activities as operation, maintenance, repair and laboratory testing

4. Safe working procedure;

5. Identification of accident prone and hazardous conditions and

6. Safety measures for individual equipment.

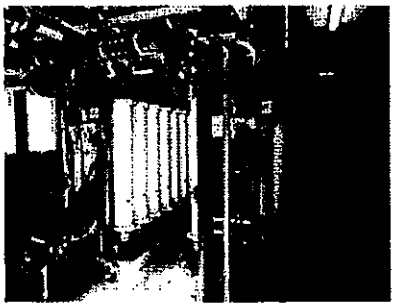
4.5 CLEANUP

A. Upon completion of the installation of water lines, and appurtenances, all debris and surplus materials resulting from the work shall be removed.

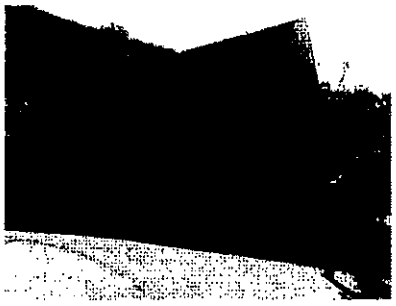
** END OF SECTION **

Inspection of Water Treatment Plant
Construction Experience of ISKLA
Location; Slovenia
Date; 2012/5/17
Participant; Mr. Toni Tonevski, Mayor of Municipality of Probistip
Mr. Stojan Milanov, PE HS Zletovica Director
Mr. Kunio Kimata, SAPI consultant

Zegnan studenec Teatment Plant
Capacity; 2,460m3/day.
UF system



Hubelj Treatment Plant
Capacity; 12,300m3/day.
UF system



AGREEMENT

Between:

Public enterprise for water economy activities Hydrosystem "Zletovica"-Probistip, address at "Cvetko Tonev" street No.3A, Probistip represented by the Director Stojan Milanov, (hereafter referred to as the **Supplier of services)** as the first party and

Public communal enterprise "Isar" address at General Mihajlo Apostolski street 37, Stip, represented by the Director Nikola Micevski (hereafter referred to as the **Customer of services)** as the second party.

Article 1

Subject of this agreement is method of supply, quantities, schedule, measurement and payment of the raw water for the needs of the water treatment plant in Stip, which is property of the customer of the services.

The raw water supply shall start after completion of rehabilitation of the water treatment plant.

Article 2

The supplier is obliged to deliver the water regularly and continuously from the Intake for water supply to Stip and Sveti Nikole through the supply pipeline to the water treatment plant, which is property of the costumer of the services.

The supplier of services is obliged to make supply of raw water with quality according to the Regulation on classification of water (Official Gazette of RM No.18/99).

The supplier is obliged to inform the customer for any change of quality of the raw water and to stop the supply of water which quality is not in accordance with the Regulation on classification of water (Official Gazette of RM No. 18/99).

In case the quality of supplied water does not meet the standards according to the Regulation on classification of water (Official Gazette of RM No. 18/99), confirmed by performed checking in the laboratory of the water treatment plant, the customer of services is entitled to reduce the quantity or to stop receiving of the raw water temporarily, immediately informing in written the supplier of services.

Article 3

Both sides agreed the quantities of the distributed raw water to be measured by the flow meter at the outlet manhole on the pipeline to Stip, which is property of the Supplier.

The monthly quantities of distributed raw water will be determined every first day of the next month for the previous month from the recorded quantities of the watermeter with the record from authorized persons of both sides.

Article 4

The consumer is obliged to inform the Supplier for the total needs of raw water for the next year no later than December 31st in the current year. The annual and monthly needs should be given in m^3.

Article 5

The consumer and supplier have a right to make inspection and checking of the condition of the flow meters, current and total flow.

The costumer and the supplier have to provide this to each other and make that inspection together.

Article 6

In case of dry year and limited quantity of accumulated water, both sides will prepare a schedule of monthly utilization of the available quantities of water.

Article 7

The both parties agree, the distributed water to the water treatment plant in Stip to be charge in accordance with the Tariff for the price of raw water from PE HS "Zletovica" No. 0201-1787/13 dated 23.12.2011 and Decision of the Government of the Republic of Macedonia No. 51-8313/1-11 dated 17.01.2012 for concurrence of the Tariff for the price of the raw water from PE HS "Zletovica" (Official Gazette of RM No. 15/12).

The distributed raw water to the consumer will be charged 3,00 MKD per m^3 VAT excluded.

The price for $1m^3$ raw water mentioned above in paragraph 2 of this article shall be increased for 1 MKD from 01.01.2014 and shall become 4 MKD without VAT.

The price for $1m^3$ raw water mentioned above in paragraph 3 of this article shall be increased for 1 MKD from 01.01.2016 and shall become 5 MKD without VAT.

The price for $1m^3$ raw water mentioned above in paragraph 4 of this article shall be increased for 1 MKD every year.

The supplier and the customer have agreed to start the distribution of the raw water after completion of the rehabilitation of the water treatment plant in Stip and after the technical acceptance of the structure.

Article 8

The supplier shall submit invoice for the distributed raw water to the customer of services.

The customer of services will pay the invoices within 45 days of submission of the same.

Article 9

In case of that stoppage of water supply of the first or the second party, it is agreed that the both sides shall inform each other in written at least 48 hours before that.

In case of urgent intervention on the pipeline, the supplier is entitled to stop the water distribution based on verbal notification only.

The both sides are obliged on maximum cooperation during the eventual defects or unpredictable situations.

Article 10

This agreement and become effective on the day of signing, and shall be applied after the technical acceptance of the structure.

Article 11

The both parties could change or amend the provisions of the contract only by mutual consent.

The provisions of this agreement could be changed or amended by making agreement for change and amending of the original agreement.

The changes and amending of this agreement are valid only if are made in written form and signed by the both contractual parties.

Article 12

It is agreed upon that both parties will first try to settle their disputes by themselves. In case of failure to reach any agreement, the Prime Court in Stip is competent.

Article 13

The agreement is made in 4 (four) identical copies, 2 (two) for each party.

Supplier
PE HS "Zletovica
Director
Stojan Milanov

_____

Customer
JKP "Isar" Stip
Director
Nikola Micevski

_____

Јавно претпријатие за комунално ... дејности "ИСАР" п.о.
05-543
23.03.20...

0306-301/2
20.02.12

ДОГОВОР

Склучен помеѓу:

Јавно претпријатие за извршување на водостопански дејности Хидросистем "Злетовица" - Пробиштип, ул."Цветко Тонев" бр.3А, Пробиштип, застапувано од Директор Стојан Миланов, (во понатамошниот текст на договорот: **Испорачател на услугите**) од една страна и

Јавно претпријатие за комунално производни и услужни работи "Исар", ул."Генерал Михајло Апостолски" бр.37, Штип, застапувано од Директорот Никола Мицевски (во понатамошниот текст на договорот: **Корисник на услугите**) од друга страна.

Член 1

Предмет на овој договор е начин на испорака, количини, динамика, мерење и плаќање на сировата вода за потребите на филтер станицата во Штип, која е во сопственост на корисникот на услугите.

Испорачувањето на сировата вода до филтер станицата ќе одпочне одкако ќе биде завршена реконструкцијата на филтер станицата.

Член 2

Испорачателот се обврзува да сировата вода ја испорачува редовно и континуирано и тоа од Зафатот за водоснабдување на Штип и Свети Николе преку доводниот цевковод до филтер станицата, која е во сопственост на корисникот на услугите.

Испорачателот на услугата се обврзува да врши испорака на сирова вода со квалитет во согласност со Уредбата за класификација на водите (Сл.весник на РМ бр.18/99)

Испорачателот се обврзува секогаш кога ќе има промена во квалитетот на сировата вода веднаш да го извести корисникот на услугите и да ја запре испораката на сирова вода, чиј квалитет не е во согласност со Уребата за класификација на водите (Сл.весник на РМ бр.18/99).

Во случај квалитетот на испорачаната вода да не ги задоволува стандардите согласно Уребата за класификација на водите(Сл.весник на РМ бр.18/99) утврдено врз основа на извршени контроли од страна на лабораторијата на филтер станицата, корисникот на услугата има право да изврши редукција или времен прекин на приемот на сировата вода за што веднаш писмено ќе го извести давателот на услугата.

Член 3

Двете страни се договорија количините на испорачаната сирова вода да се мерат на мерачот на проток кој е на излезната шахта на доводниот цевковод за Штип, а во сопственост на испорачателот.

Месечните количини на испорачана вода ќе се утврдуваат на секој први од наредниот месец за претходниот месец од регистрираните количини од водомерот и тоа записнички од овластени лица од двете договорни страни.

Член 4

Корисникот е должен на испорачателот да му ги пријави вкупните потреби за сирова вода за наредната година, најдоцна до 31 Декември во тековната година. Годишните и месечните требувања ќе бидат во м^3.

Член 5

Корисникот и испорачателот ке имаат право во секое време да извршат увид и контрола на состојбата на протокомерите, моменталниот проток, сумарниот проток.

Корисникот и испорачателот мора меѓу себе да си го овозможат и заеднички да го извршат таквиот увид.

Член 6

Во случај на сушна година и ограничена количина на акумулирана вода, двете договорни страни заеднички ке изработат план за месечно искористување на расположивите количини на вода.

Член 7

Договорните страни се согласни, испорачаната сирова вода за филтер станицата во Штип да се наплаќа согласно Ценовникот за висината на цената на сирова вода за водоснабдување од ЈП ХС "Злетовица" со арх. бр.0201-1787/13 од 23.12.2011 година и Одлуката на Владата на Република Македонија со арх. бр.51-8313/1-11 од 17.01.2012 година за давање на согласност на Ценовникот за висината на цената на сирова вода за водоснабдување од ЈП ХС "Злетовица" (Сл.весник на РМ бр.15/12).

Цената на сирова вода за 1 м^3 која испорачателот ке ја испорачува на корисникот се определува на износ од 3,00 денари без пресметан ДДВ.

Цената на сирова вода за 1 м^3 определена во став 2 од овој член од 01.01.2014 година ке се зголеми за 1,00 денар и ќе изнесува 4,00 денари без пресметан ДДВ.

Цената на сирова вода за 1 м^3 определан во став 3 од овој член од 01.01.2016 година ке се зголеми за 1 денар и ќе изнесува 5,00 денари без пресметан ДДВ.

Цената на сирова вода за 1 м^3 определена во став 4 од овој член ке се зголемува за 1,00 денар секоја наредна година.

Испорачателот и корисникот на услугите се согласни по завршување на реконструкцијата на филтер станицата во Штип и по извршениот технички прием на објектот да се отпочне со испорака на сирова вода.

Член 8

За испорачаната сирова вода испорачателот ке доставува фактури до корисникот на услугите.

Корисникот на услугите се обврзува фактурите да ги плаќа во рок од 45 дена од денот на доставувањето на истите.

Член 9

Во случај на потреба од прекин на водоснабдувањето од една или од друга страна, договорено е двете страни писмено да се известуваат најмалку 48 часа пред потребата од прекин.

Во случај на итни интервенции на цевководот, испорачателот има право да ја запре испораката на сирова вода само со усна најава до корисникот.

Двете страни се обврзуваат за максимална соработка при евентуални дефекти или непредвидени ситуации.

Член 10

Овој договор стапува во сила од денот на потпишување на двете договорни страни, а ќе се применува по извршениот технички прием на објектот.

Член 11

Договорните страни можат да ги дополнат или изменат одредбите од овој договор само спогодбено.

Одредбите од овој договор можат да се изменат или дополнат со склучување договор за изменување и дополнување на основниот договор.

Дополнувањата и измените на овој договор се важечки ако се направени во писмена форма и ако се потпишани од двете договорни страни.

Член 12

Евентуалниот спор ќе се решава спогодбено. Доколку спорот не се реши спогодбено, стварно и месно надлежен суд за решавање на истиот е Основен суд Штип.

Член 13

Овој договор е составен во 4(четири) еднообразни примероци од кои по 2(два) за двете договорни страни.

Испорачател
ЈП ХС "Злетовица"
Директор
Стојан Миленов

Корисник
Јавно претпријатие за комунално производни и услужни работи "Исар"
Никола Мицевски

Бр. 0306-694/3
11. 05 2012

AGREEMENT

Constructing Probistip Water Treatment Plant

on Zletovica Basin Water Utilization Improvement Project

This Agreement made this 9th of May 2012 between, Ministry of Agriculture, Forestry and Water Economy and Public Enterprise of Hydrosystem Zletovica of the Republic of Macedonia (hereinafter called "the Employer"), Municipality of Probistip (hereinafter called "the Investor") and the Public Communal Enterprise (PCE) "Nikola Karev" (hereinafter called "Implementer of investment") of the one part and Iskra Sistemi d.d of Republic of Slovenia (hereinafter called "the Contractor") of the other part.

The Investor and Implementer of investment, shall take part of key functions based on the three Agreements: Implementation Agreement mutually agreed by the Ministry of Agriculture, Forestry and Water Economy, Public Enterprise of Hydrosystem Zletovica , Municipality Probistip and PCE Nikola Karev; On-lending Agreement mutually agreed by the Ministry of Finance and the PCE Nikola Karev and Raw Water Usage Agreement mutually agreed by the Public Enterprise of Hydrosystem Zletovica and PCE Nikola Karev.

Whereas, the Employer and the Contractor have signed contracts of Package 4: SCADA and Telecommunication Systems dated 13th March, 2009, amendment No. 1 dated 21st July, 2009 and amendment No. 2 dated 17th September, 2010 on Zletovica Basin Water Utilization Improvement Project.

Whereas, the Employer and the Contractor mutually agreed to sign a contract based on amending a part of the Original Contract, dated 13th March 2009, in order to have clean understanding of the condition, and the Investor and the Implementer of Investment confirmed it.

Now Therefore, both parties and the Investor and the Implementer of Investment hereby agreed to conclude Agreement as follows;

1. In this Agreement word and expression shall have the same meaning as are respectively assigned to them in the Condition of Contact hereinafter referred to.

2. Constructing Probistip Water Treatment Plant
   The work is to construct Water Treatment Plant (WTP) for Probistip Municipality. The WTP will receive raw water from the Hydrosystem "Zletovica". The WTP is going to be operated by Public Communal Enterprise "Nikola Karev" under Probistip Municipality.

3. Cost
   The Cost estimated to 1.4 million Euro, excluding VAT (18%).

4. Payment
   The payment to the Contractor is from a budget consisted of JICA loan Agreement MAC-P1, Slovenian Grant and Probistip Municipality's fund.
   JICA's portion is in Yen 93,480,000-, equivalent to Euro 878,000- and 63% to the total contract amount, Slovenian's portion is in Euro 480,000-, equivalent to 34% of it and

Iskra
Iskra Sistemi, d.d.
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Probistip Municipality portion is about Euro 42,000-, equivalent to 3% of it, when the exchange rate is 1 Euro = 106.48 Yen.
The exchange rate is applied as of the figures prior to the 28 day of the Agreement as stipulates in clause 70.5 of appendix to bid of the Original Contract.

5. Construction time schedule
The Completion time of the work is December 20, 2012.

6. The following documents shall be deemed to form and be read and constructed as part of this Agreement, viz:

(a) The Term of Reference
(b) The Technical Specification
(c) The Priced Bill of Quantity
(d) Referent list of the New Subcontractor

7. The Insurance of works shall be covered by the new insurance according to the Clause 21.1, 23.1 of the General Condition of the Contract. The Performance Security to cover the works included in this variation shall be obtained and provided to the Employer. The Amount of the sub-clause 23.2 from the Appendix to bid of Original Contract shall be replaced with the Amount of 1.4 million Euro.

8. The Price Adjustment shall not be applied.

Except those agreed upon in this Agreement, other condition and provision set forth in the Original Contract shall remain intact and effective.

This Agreement made in duplicate form and integral part of the Contract and shall become effective upon signature of both parties.

Iskra
Iskra Sistemi, d.d.
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For and behalf of
Government of Republic of Macedonia
Ministry of Agriculture, Forestry and
Water Economy

Ljupco Dimovski
Minister

For and behalf of
The Contactor
Iskra Sistemi d.d

M.Sc. Uros Suhodolcan
Member of the Board

Iskra
Iskra Sistemi, d.d.
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For and behalf of
PE HS Zletovica

Stojan Milanov
Director

For and behalf of
The Contactor
Iskra Sistemi d.d

Joze Ponikvar
Director of Power Division

Iskra
Iskra Sistemi, d.d.
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Confirmed by

For and behalf of
Municipality Probistip

Toni Tonevski
Mayor

For and behalf of
PCE Nikola Karev

Milan Terzic
Director

Witness by

For and behalf of
SAPI Consultant

Kunio Kimata
Team Leader

Iskra
Iskra Sistemi, d.d.
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AGREEMENT

Amendment No.3 of Package 4: SCADA and Telecommunication Systems

on Zletovica Basin Water Utilization Improvement Project.

This Agreement (Amendment No.3) made this 9th of May 2012 between, Ministry of Agriculture, Forestry and Water Economy and Public Enterprise of Hydrosystem Zletovica of the Republic of Macedonia (hereinafter called "the Employer") Municipality of Probistip (hereinafter called "the Investor") and the Public Communal Enterprise (PCE) "Nikola Karev" (hereinafter called "Implementer of investment") of the one part and Iskra Sistemi d.d of Republic of Slovenia (hereinafter called "the Contractor") of the other part.

Whereas, the Employer and the Contractor mutually agreed to amend a part of the Original Contract, dated 13th March 2009, in order to have clean understanding of the condition.

Now Therefore, both parties hereby agreed to conclude Amendment No.3 as follows;

1. In this Agreement word and expression shall have the same meaning as are respectively assigned to them in the Condition of Contact hereinafter referred to.

2. Constructing Probistip Water Treatment Plant
The work is to construct Water Treatment Plant (WTP) for Probistip Municipality. The WTP will receive raw water from the Hydrosystem "Zletovica". The WTP is going to be operated by Public Communal Enterprise "Nikola Karev" under Probistip Municipality.

3. Cost
The Cost estimated to 93,480,000 JPY and 522,000 EUR, totally equivalent to 1.4 million Euro, excluding VAT (18%).

4. Payment
The payment to the Contractor is from a budget consisted of JICA loan Agreement MAC-P1 as in Yen 93,480,000-.

5. Construction time schedule
The Completion time of the work is December 20, 2012.

6. The following documents shall be deemed to form and be read and constructed as part of this Agreement, viz:
   (1) Summary of Amended Contract Amount of 36,555,742.74MKD and 2,542,588.85EUR
   (2) Memorandum of Variation Order No.2
      (a) The Term of Reference
      (b) The Technical Specification
      (c) The Priced Bill of Quantity
      (d) Referent list of the New Subcontractor

Except those agreed upon in this Amendment No.3, other condition and provision set forth in the Original Contract shall remain intact and effective.

This Amendment No.3 made in duplicate form and integral part of the Contract and shall become effective upon signature of both parties and the subject to concurrence of the JICA.

Iskra
Iskra Sistemi, d.d.
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For and behalf of
Government of Republic of Macedonia
Ministry of Agriculture, Forestry and
Water Economy

Ljupco Dimovski
Minister

For and behalf of
PE HS Zletovica

Stojan Milanov
Director

For and behalf of
The Contactor
Iskra Sistemi d.d

Joze Ponikvar
Director of Power Division

Iskra
Iskra Sistemi, d.d.

Confirmed by

For and behalf of
Municipality Probistip

Toni Tonevski
Mayor

For and behalf of
PCE Nikola Karev

Milan Terzic
Director

Witness by

For and behalf of
SAPI Consultant

Kunio Kimata
Team Leader

Iskra
Iskra Sistemi, d.d.

бр. 0306-694/2
11. 05 2012

AGREEMENT

Variation Order No.2 of Package 4: SCADA and Telecommunication Systems

on Zletovica Basin Water Utilization Improvement Project.

This Agreement (Variation Order No.2) made this 9th of May 2012 between, Ministry of Agriculture, Forestry and Water Economy and Public Enterprise of Hydrosystem Zletovica of the Republic of Macedonia (hereinafter called "the Employer") Municipality of Probistip (hereinafter called "the Investor") and the Public Communal Enterprise (PCE) "Nikola Karev" (hereinafter called "Implementer of Investment") of the one part and Iskra Sistemi d.d of Republic of Slovenia (hereinafter called "the Contractor") of the other part.

Whereas, the Employer and the Contractor mutually agreed to amend a part of the Original Contract, dated 13th March 2009, in order to have clean understanding of the condition.

Now Therefore, both parties hereby agreed to conclude Variation Order No.2 as follows;

1. In this Agreement word and expression shall have the same meaning as are respectively assigned to them in the Condition of Contact hereinafter referred to.

2. Constructing Probistip Water Treatment Plant
   The work is to construct Water Treatment Plant (WTP) for Probistip Municipality. The WTP will receive raw water from the Hydrosystem "Zletovica". The WTP is going to be operated by Public Communal Enterprise "Nikola Karev" under Probistip Municipality.

3. Cost
   The Cost estimated to 93,480,000 JPY and 522,000 EUR, totally equivalent to 1.4 million Euro, excluding VAT (18%).

4. Payment
   The payment to the Contractor is from a budget consisted of JICA loan Agreement MAC-P1 as in Yen 93,480,000-.

5. Construction time schedule
   The Completion time of the work is December 20, 2012.

6. The following documents shall be deemed to form and be read and constructed as part of this Agreement, viz:
   (1) Summary of Amended Contract Amount of 36,555,742.74MKD and 2,542,588.85EUR
   (2) Memorandum of Variation Order No.2
      (a) The Term of Reference
      (b) The Technical Specification
      (c) The Priced Bill of Quantity
      (d) Referent list of the New Subcontractor

Except those agreed upon in this Variation Order No.2, other condition and provision set forth in the Original Contract shall remain intact and effective.

This Amendment No.3 made in duplicate form and integral part of the Contract and shall become effective upon signature of both parties and the subject to concurrence of the JICA.

Iskra
Iskra Sistemi, d.d.
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For and behalf of
Government of Republic of Macedonia
Ministry of Agriculture, Forestry and
Water Economy

Ljupco Dimovski
Minister

For and behalf of
PE HS Zletovica

Stojan Milanov
Director

For and behalf of
The Contactor
Iskra Sistemi d.d

Joze Ponikvar
Director of Power Division

Iskra
Iskra Sistemi, d.d.
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Confirmed by

For and behalf of
Municipality Probistip

Toni Tonevski
Mayor

For and behalf of
PCE Nikola Karev

Milan Terzic
Director

Witness by

For and behalf of
SAPI Consultant

Kunio Kimata
Team Leader

ORIENTAL CONSULTANTS CO., LTD.
ORIGONSUL
GLOBAL CONSULTING

Iskra
Iskra Sistemi, d.d.
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9 May 2012

Zletovica Basin Water Utilization Improvement Project
Package 4: SKADA and Telecommunication System
Memorandum
On the Variation Order No. 2

Бр. 0302-694/5
11. 05 2012

Water Treatment Plant of Municipality Probistip

This memorandum supplements the agreement made on 13th March 2009 between Ministry of Agriculture, Forestry and Water Economy and Public Enterprise of Hydrosystem Zletovica of the Republic of Macedonia (hereinafter called "the Employer"), Municipality of Probistip (hereinafter called "the Investor") and the Public Communal Enterprise "Nikola Karev" (hereinafter called "Implementer of Investment"), of the one part and Iskra Sistemi d.d of Republic of Slovenia (hereinafter called "the Contractor") of the other part, on Package 4: SKADA and Telecommunication System for Zletovica Basin Water Utilization Improvement Project.

The Investor and the Implementer of investment, shall take part of this Memorandum based on the three Agreements: Implementation Agreement mutually agreed by the Ministry of Agriculture, Forestry and Water Economy, Public Enterprise of Hydrosystem Zletovica , Municipality Probistip and PCE Nikola Karev; On-lending Agreement mutually agreed by the Ministry of Finance and the PCE Nikola Karev and Raw Water Usage Agreement mutually agreed by the Public Enterprise of Hydrosystem Zletovica and PCE Nikola Karev.

Item

1. Constructing Probistip Water Treatment Plant
   The work is to construct Water Treatment Plant (WTP) for Probistip Municipality. The WTP will receive raw water from the Hydrosystem "Zletovica". The WTP is going to be operated by Public Communal Enterprise "Nikola Karev" under Probistip Municipality.

2. Cost
   The Cost estimated to 1.4 million Euro, excluding VAT (18%).

3. Payment
   The payment to the Contractor is from a budget consisted of JICA loan Agreement MAC-P1, Slovenian Grant and Probistip Municipality's fund.
   JICA's portion is in Yen 93,480,000-, equivalent to Euro 878,000- and 63% to the total contract amount, Slovenian's portion is in Euro 480,000-, equivalent to 34% of it and Probistip Municipality portion is about Euro 42,000-, equivalent to 3% of it, when the exchange rate is 1 Euro = 106.48 Yen.
   The exchange rate is applied as of the figures prior to the 28 day of the Agreement as stipulates in clause 70.5 of appendix to bid of the Original Contract.

Iskra
Iskra Sistemi, d.d.
10

9 May 2012

4. Construction time schedule
The Completion time of the work is December 20, 2012.

5. The Price Adjustment shall not be applied.

The Variation Order Memorandum shall be sign by the both Parties and confirmed by the representative of Probistip Municipality and the Public Communal Enterprise "Nikola Karev" as the parties on which the in final Water Treatment Plant shall be handed over.

Attachment:

(a) The Term of Reference
(b) The Technical Specification
(c) The Priced Bill of Quantity
(d) Referent list of the New Subcontractor

Iskra
Iskra Sistemi, d.d.
10

9 May 2012

Dated 9th May. 2012

For and behalf of
Government of Republic of Macedonia
Ministry of Agriculture, Forestry and Water Economy

Kadir Salih
Director
Water Economy Administration

For and behalf of
The SAPI

ORIENTAL CONSULTANTS CO.,LTD.
ONICONSUL
GLOBAL CONSULTING

Kunio Kimata
Project Manager
SAPI team(Oriental Consultants)

For and behalf of
PE HS Zletovica

Stojan Milanov
Director

For and behalf of
The Contractor

Joze Ponikvar
Director of Power Division

Iskra
Iskra Sistemi, d.d.

Confirmed by

For and behalf of
Municipality Probistip

Toni Tonevski
Mayor

For and behalf of
PCE Nikola Karev

Milan Terzic
Director

Iskra
Iskra Sistemi, d.d.

РЕПУБЛИКА МАКЕДОНИЈА
МИНИСТЕРСТВО ЗА ЗЕМЈОДЕЛСТВО,
ШУМАРСТВО И ВОДОСТОПАНСТВО
Бр. 12-6171/1
30.05. 2012 Год.
СКОПЈЕ

0306-694/1
11.05. 2012

AGREEMENT

Amendment No.3 of Package 4: SCADA and Telecommunication Systems

on Zletovica Basin Water Utilization Improvement Project.

This Agreement (Amendment No.3) made this 9th of May 2012 between, Ministry of Agriculture, Forestry and Water Economy and Public Enterprise of Hydrosystem Zletovica of the Republic of Macedonia (hereinafter called "the Employer") Municipality of Probistip (hereinafter called "the Investor") and the Public Communal Enterprise (PCE) "Nikola Karev" (hereinafter called "Implementer of investment") of the one part and Iskra Sistemi d.d of Republic of Slovenia (hereinafter called "the Contractor") of the other part.

Whereas, the Employer and the Contractor mutually agreed to amend a part of the Original Contract, dated 13th March 2009, in order to have clean understanding of the condition.

Now Therefore, both parties hereby agreed to conclude Amendment No.3 as follows;

1. In this Agreement word and expression shall have the same meaning as are respectively assigned to them in the Condition of Contact hereinafter referred to.

2. Constructing Probistip Water Treatment Plant
The work is to construct Water Treatment Plant (WTP) for Probistip Municipality. The WTP will receive raw water from the Hydrosystem "Zletovica". The WTP is going to be operated by Public Communal Enterprise "Nikola Karev" under Probistip Municipality.

3. Cost
The Cost estimated to 93,480,000 JPY and 522,000 EUR, totally equivalent to 1.4 million Euro, excluding VAT (18%).

4. Payment
The payment to the Contractor is from a budget consisted of JICA loan Agreement MAC-P1 as in Yen 93,480,000-.

5. Construction time schedule
The Completion time of the work is December 20, 2012.

6. The following documents shall be deemed to form and be read and constructed as part of this Agreement, viz:
   (1) Summary of Amended Contract Amount of 36,555,742.74MKD and 2,542,588.85EUR
   (2) Memorandum of Variation Order No.2
      (a) The Term of Reference
      (b) The Technical Specification
      (c) The Priced Bill of Quantity
      (d) Referent list of the New Subcontractor

Except those agreed upon in this Amendment No.3, other condition and provision set forth in the Original Contract shall remain intact and effective.

This Amendment No.3 made in duplicate form and integral part of the Contract and shall become effective upon signature of both parties and the subject to concurrence of the JICA.

Iskra
Iskra Sistemi, d.d.

For and behalf of
Government of Republic of Macedonia
Ministry of Agriculture, Forestry and
Water Economy

Ljupco Dimovski
Minister

For and behalf of
PE HS Zletovica

Stojan Milanov
Director

For and behalf of
The Contactor
Iskra Sistemi d.d

Joze Ponikvar
Director of Power Division

Iskra
Iskra Sistemi, d.d.
10

Confirmed by

For and behalf of
Municipality Probistip

Toni Tonevski
Mayor

For and behalf of
PCE Nikola Karev

Milan Terzic
Director

Witness by

For and behalf of
SAPI Consultant

Kunio Kimata
Team Leader

Iskra
Iskra Sistemi, d.d.
10

Бр. 0306-694/2
11. 05 2012

AGREEMENT

Variation Order No.2 of Package 4: SCADA and Telecommunication Systems

on Zletovica Basin Water Utilization Improvement Project.

This Agreement (Variation Order No.2) made this 9th of May 2012 between, Ministry of Agriculture, Forestry and Water Economy and Public Enterprise of Hydrosystem Zletovica of the Republic of Macedonia (hereinafter called "the Employer") Municipality of Probistip (hereinafter called "the Investor") and the Public Communal Enterprise (PCE) "Nikola Karev" (hereinafter called "Implementer of Investment") of the one part and Iskra Sistemi d.d of Republic of Slovenia (hereinafter called "the Contractor") of the other part.

Whereas, the Employer and the Contractor mutually agreed to amend a part of the Original Contract, dated 13th March 2009, in order to have clean understanding of the condition.

Now Therefore, both parties hereby agreed to conclude Variation Order No.2 as follows;

1. In this Agreement word and expression shall have the same meaning as are respectively assigned to them in the Condition of Contact hereinafter referred to.

2. Constructing Probistip Water Treatment Plant
   The work is to construct Water Treatment Plant (WTP) for Probistip Municipality. The WTP will receive raw water from the Hydrosystem "Zletovica". The WTP is going to be operated by Public Communal Enterprise "Nikola Karev" under Probistip Municipality.

3. Cost
   The Cost estimated to 93,480,000 JPY and 522,000 EUR, totally equivalent to 1.4 million Euro, excluding VAT (18%).

4. Payment
   The payment to the Contractor is from a budget consisted of JICA loan Agreement MAC-P1 as in Yen 93,480,000-.

5. Construction time schedule
   The Completion time of the work is Decemher 20, 2012.

6. The following documents shall be deemed to form and be read and constructed as part of this Agreement, viz:
   (1) Summary of Amended Contract Amount of 36,555,742.74MKD and 2,542,588.85EUR
   (2) Memorandum of Variation Order No.2
      (a) The Term of Reference
      (b) The Technical Specification
      (c) The Priced Bill of Quantity
      (d) Referent list of the New Subcontractor

Except those agreed upon in this Variation Order No.2, other condition and provision set forth in the Original Contract shall remain intact and effective.

This Amendment No.3 made in duplicate form and integral part of the Contract and shall become effective upon signature of both parties and the subject to concurrence of the JICA.

Iskra
Iskra Sistemi, d.d.
10

For and behalf of
Government of Republic of Macedonia
Ministry of Agriculture, Forestry and
Water Economy

Ljupco Dimovski
Minister

For and behalf of
PE HS Zletovica

Stojan Milanov
Director

For and behalf of
The Contactor
Iskra Sistemi d.d

Joze Ponikvar
Director of Power Division

Iskra
Iskra Sistemi, d.d.
10

Confirmed by

For and behalf of
Municipality Probistip

Toni Tonevski
Mayor

For and behalf of
PCE Nikola Karev

Milan Terzic
Director

Witness by

For and behalf of
SAPI Consultant

Kunio Kimata
Team Leader

Iskra
Iskra Sistemi, d.d.
10

08-985/1
06.06. 12

08-985/1
14.06. 12

DONATION AGREEMENT
2012/1

between

Republic of Macedonia
Probištip Municipality
as Recipient

and

CMSR
Centre for International Cooperation and Development

as Donor on behalf of the Republic of Slovenia

THIS DONATION AGREEMENT is made on the 14.6.2012 between:

(1) **Probištip Municipality** with its registered head office at Jakim Stojkovski 1, 2210 Probištip, Republic of Macedonia (the "**Recipient**");

(2) **Centre for International Cooperation and Development (CMSR)** – on behalf of the Republic of Slovenia - with its registered head office at Kardeljeva ploščad 1, Ljubljana 1000, Slovenia (the "**Donor**");

WHEREAS:

(A) The Recipient has presented to the Donor the project documentation attached to this agreement (the "Project Documentation") with a proposal for Official Development Assistance of the Republic of Slovenia in the form of donation to enable the implementation of the Project: **"Construction of Water Treatment Plant for drinking water in Probištip municipality"** (the **"Project"**).

(B) For the purpose of assisting the Recipient in the implementation of the Project, the Donor agrees to provide the Recipient with **a donation in the amount of 480.000 euro** on the terms and conditions set in this Agreement in two annual instalments.

(C) The Recipient has secured the resources in **the amount of 920.000** euro for the project realisation in **the total value 1.400.000 euro** out of its own resources and the JICA credit and will perform all needed preparatory works for the project implementation.

(D) The Implementer of investment of the donation in amount of 480.000 euro for construction of water treatment plant for drinking water in the Municipality of Probistip is the Public Communal Enterprise "Nikola Karev" from Probistip, which is a Public Enterprise established by the Municipality for water supply activities in the Municipality of Probištip.

(E) The Contract between the Recipient and the Contractor has been signed for the total value of the project **in the total value of 1.400.000 euro.**

NOW IT IS HEREBY AGREED as follows:

1. DONATION

1.1 Amount: Subject to the terms and conditions of this Agreement, the Donor hereby undertakes to make available to the Recipient a donation in the amount 480.000 euro (four hundred eighty thousand) in two annual instalments (the "Donation").

The first instalment in the amount of 356.0000 euro is made available on the terms and conditions set in this Agreement in 2012 and the second instalment in the year 2013. The amounts of the second instalment are regulated with the annex to this contract; signed in 2013 after the funds for the donation are being made available to the CMSR by the Republic of Slovenia for the financial year.

1.2 Purpose: The Donation will and can be used solely for the purpose of financing the payment to the "Contractor" – the contracting party for implementing the Project (based on signed contract between the Recipient and the Contractor) and the Recipient may not, directly or indirectly, use any part of such donation for any other purpose.

1.3 Disbursement:
The disbursements of the Donation will be effected following the presentation of submitted invoices according to the contract (between the Recipient and the Contractor).
Financial transfer in respect of the Donation will be made available against presentation and delivery of the complete set of documents demonstrating that:

(i) the Project has been or is being implemented in accordance with the Project Documentation;

(ii) the contract between the Recipient and the Contractor has been signed for the total value of the project;

(iii) The Recipient has presented to the Donor the formally approved copy of the invoice submitted by the Contractor to the Recipient requesting payment (in line with the contract between the Recipient and the Contractor).

1.4 Application of funds: The Recipient irrevocably authorizes the Donor to effect the payments of donation founds (made available to the Recipient under this Agreement) directly to the Contractor's bank account (IBAN: SI56 029230012553977 at LJBASI2X) for the payment of the amounts owed by the Recipient to the Contractor in connection with the Project, and the Donor shall, promptly upon making payment to the Contractor, notify the Recipient thereon and provide it with the appropriate evidence of such payment.

1.5 Donor discretion: The Donor has the right to refuse the disbursement of the Donation in case of violation of terms and conditions of this agreement or derogations from the Project Documentation.

2. COVENANTS

2.1 The Recipient shall present to the Donor the following information:

a) The copy of the Procurement Contract between the Recipient and the Contractor (in 8 days after the signing of the Contract);
b) Semi-annual and annual reports on the Project implementation by no later than 15 days after the expiry of each 6 months' period starting from the date of this agreement;
c) Final report on the Project implementation;
d) Any information regarding the Project which the Donor may reasonably request from time to time.

2.2 The Recipient shall facilitate at least one annual visit of the Donor representative to the Project site.

2.3 The Donor has the right to claim the repayment of the Donation in case the Donation was not used according to the manner agreed and under the conditions set by this Agreement.

3. VISIBILITY

3.1. The Recipient must take all necessary steps to publicise the fact that the Republic of Slovenia has co-financed the Project. Such measures must include the display of the "International development cooperation of the Republic of Slovenia" logo wherever appropriate.

3.2. In particular, the Recipient shall mention the Slovenian financial contribution in information given in its internal and annual reports, and in any dealings with the media. Any notice or publication by the Recipient concerning the Project, including those given at a conference or seminar, must specify that the Project has received Slovenian co-funding.

4. COMMUNICATIONS

4.1 Language: All notices and other communications in connection with this Agreement, as well as any documents to be provided from one party to another, shall be in English language or, as regards any document the original of which is made in another language, accompanied by a working translation into English language. Attachments, reports and explanations may be presented in local languages and translated in English upon request.

4.2 Addresses: Each communication under this Agreement shall be made by fax or otherwise in writing. Each communication or document to be delivered to any party under this Agreement shall be sent to it at the fax number or address, and marked for the attention, if any, from time to time designated by it to the other. The initial fax number, address and marking (if any) so designated by each party are set out under its name at the end of this Agreement.

5. GENERAL PROVISIONS

5.1 The Recipient shall have sole responsibility for complying with any legal obligations incumbent on him.

5.2 The Donor shall not, in any circumstances or on any grounds, be held liable for any damage incurred by any person in connection with this agreement, the Project or otherwise. Consequently, the Donor will not entertain any request for indemnity or reimbursement accompanying any such claim.

5.3 Except in cases of force majeure, the Recipient shall make good any damage sustained by the Donor as a result of the execution or faulty execution of the Project.

5.4 The Recipient shall bear sole liability vis-à-vis third parties, including for damage of any kind sustained by them while the Project is being carried out.

5.5 The Recipient undertakes to take all the necessary measures to prevent any risk of conflicts of interests which could affect the impartial and objective performance of this agreement. Such conflict of interests could arise in particular as a result of economic interest, political or national affinity, family or emotional reasons, or any other shared interest. Any situation constituting or likely to lead to a conflict of interests during the performance of this agreement must be brought to the attention of the Donor, in writing, without delay. The Recipient shall undertake to take whatever steps are necessary to rectify this situation at once. The Donor reserves the right to check that the measures taken are appropriate and may demand that the Recipient takes additional measures, if necessary, within a certain time.

5.6 The Donor and the Recipient undertake to preserve the confidentiality of any document, information or other material directly related to the subject of this agreement that is duly classed as confidential, if disclosure could cause prejudice to the other party. The parties shall remain bound by this obligation beyond the closing date of the Project.

5.7 Unless the Donor requests otherwise, any communication or publication by the Recipient about the Project, including but not limited to at a conference or seminar, shall indicate that the Project has received funding from the Republic of Slovenia with the Donor acting as the international development co-operation agent of the Republic of Slovenia.

Any communication or publication by the Recipient, in any form and medium, shall indicate that sole responsibility lies with the author of such communication or publication and that the Donor is not responsible for any use that may be made of the information contained therein.

5.8 The Donor may terminate this agreement, without any indemnity on its part, in the following circumstances:

(a) in the event of a change to the Recipient's legal, financial, technical, organisational situation or condition that is liable to affect the agreement substantially or to call into question the decision to award the Donation;

(b) if the Recipient fails to fulfil a substantial obligation incumbent on him under the terms of this agreement;

(c) in the event of force majeure or other circumstances preventing the successful implementation of the Project;

(d) if the Recipient is found guilty of an offence involving his professional conduct by a judgment having the force of res judicata or if he is guilty of grave professional misconduct proven by any justified means;

(e) if the Recipient is guilty of misrepresentation or submits reports inconsistent with reality to obtain the Donation;

(f) if the Recipient has intentionally or by negligence committed a substantial irregularity in performing this agreement or in the event of fraud, corruption or any other illegal activity on the part of the Recipient to the detriment of the Donor and/or

the Contractor. A substantial irregularity consists of any infringement of a provision of an agreement or regulation resulting from an act or an omission on the part of the Recipient which causes or might cause a loss to the Donor and/or the Contractor; or

(g) if the Donor is required to repay the amounts received from the Republic of Slovenia for funding the Donation.

5.9 Any amendment to this agreement must be the subject of a written supplementary agreement. No oral agreement may bind the parties to this effect.

6. GOVERNING LAW AND JURISDICTION

6.1 Governing law: This Agreement shall be governed by and construed in accordance with the laws of the Republic of Slovenia.

6.2 Courts: The Recipient agrees for the benefit of the Donor that any controversy, dispute, or claim arising out of or relating to this agreement or the breach, termination or invalidity hereof shall be finally settled by the courts in Ljubljana, Slovenia. The submission to the jurisdiction of the courts referred to in this Clause 6.2 shall not (and shall not be construed so as to) limit the right of the Donor to take proceedings against the Recipient in any other court of competent jurisdiction nor shall the taking of proceedings in any one or more jurisdiction preclude the taking or proceedings in any other jurisdiction (whether concurrently or not) if and to the extent permitted by applicable law.

6.3 Arbitration: Notwithstanding the Clause 6.2 above, the Donor may, in its own discretion, notify the Recipient that arbitration clause shall apply. After giving such notice, any controversy, dispute or claim arising out of or relating to this agreement (including a dispute regarding the existence, validity, interpretation, breach or termination of this agreement or the consequences of its nullity) shall be referred to and finally settled by a panel of three arbitrators appointed in accordance with the Rules of Arbitration of the Permanent Court of Arbitration attached to the Chamber of Commerce and Industry of Slovenia. The place of any arbitration proceedings commenced pursuant to this Clause 6.3 shall be Ljubljana, Slovenia and the language in which such arbitration shall be conducted shall be Slovenian.

6.4 Language: This Agreement is drawn up in the English language.

Done in four originals of which the Recipient and the Donor receive each two copies.

14.

Done in Probištip on the 8.6.2012	
The Recipient: **Probištip Municipality** **Republic of Macedonia** **Mr Toni Tonevski** **Mayor**	**The Donor:** **CMSR** **Mr Gašper Jež** **Director**
Address for communications: Probištip municipality Jakim Stojkovski 1 2210 Probištip Republic of Macedonia	**Address for communications:** Center za mednarodno sodelovanje in razvoj Kardeljeva ploščad 1, 1000 Ljubljana, Slovenia
Attn: Mr Toni Tonevski, Mayor, tonitonevski@gmail.com	**Attn:** Mr Matjaž Praprotnik, Senior Expert, matjaz.praprotnik@cmsr.si
Fax No.: +389 32 483 047	**Fax No.:** +386.1.568.1585

Attachment

Project documentation

PROBIŠTIP MUNICIPALITY
Jakim Stojkovski No 1
phone +389 32 463 131; fax: +389 32 463 047
www.probistip.gov.mk

Project proposal for a donation by Republic of Slovenia

Project title:

Construction of Water Treatment Plant for drinking water in Probištip municipality

Probištip, November 2011

1. APPLICANT

1.1. Name of the applicant: Probistip Municipality

1.2. Address: Jakim Stojkovski No 1, 2210 Probistip Republic of Macedonia

1.3. Contact person:	Toni Tonevski, Mayor
Phone	+389 71 365 900
Fax	+389 32 483 047
E-mail	tonitonevski@gmail.com

1.4. Description of the applicant:

The municipality Probistip is a local government organization whose main activities are in the area of

- construction/reconstruction/maintenance of the local roadway infrastructure,
- urban planning
- issuing permits for construction of objects and buildings in the territory of the municipality
- protection of the environment;
- local economical development,
- construction and maintenance of the network for water supply and sewage;
- social protection and children protection;
- cultural development
- sport and recreation,
- education;
- health care, and
- fire fighting protection

1.5. Mission and vision of the municipality:

The main activities and authority, i.e. mission and vision, of the Probistip municipality are oriented towards better living standard for the citizen and development of the municipality.

1.6. Competences and capacities of Probištip municipality:

Probištip municipality consists of 9 divisions: division for financial questions, division for legal and general works, division for public activity, division for communal works, roads and streets, urban division, environment and local economical development division, division for inspection works, division for internal revision, division for managing with human resources and Territorial firefighting unit.

The total number of employees in the municipality Probištip is:

municipality Probištip	41
Territorial firefighting unit	10

For this project, Probištip municipality has 3 civil engineers, 2 architects and 2 lawyers that have a lot of experience in their area.

2. PROJECT

2.1. Project title:

Construction of Water Treatment Plant for drinking water in Probištip municipality

2.2. Project Location: Probištip, Republic of Macedonia, Northern peripheral part of the city Probištip

2.3. Existing situation: The drinking water supply of the Probištip municipality uses drainage well system. The wells are located in Ratavica village which is part of the Probištip municipality. The water from the drainage wells collects in a receiving tank and pumps 6km in length into the existing reservoir in the city Probištip. The location of this reservoir is in the northern peripheral part of the city. In year 2010 the first phase from project Zletovica was finished. In this phase a reservoir was constructed to provide the cities Probištip, Kratovo, Stip, Kadrinci, Sveti Nikole and Lozovo with drinking water. The water to Probištip travels partly in pipelines, partly in open river stream. In order to prepare the drinking water from the river, Probištip must construct a Water Treatment Plant if it wants to satisfy the needed quantities for drinking water.

2.4. Goals: Because of the bad quality of the water and the existing pipes from the drainage well system, the agreement between the Probištip municipality and the PE HS "Zletovica" and the increasing demand for drinking water, the Probištip municipality must construct a Water Treatment Plant for preparation of drinking water if it wants to satisfy the needed quality and quantities for drinking water, which is the main goal for this project.

2.5. Project Duration and implementation: 1 year

Estimate start date: December 2011 Estimate end date: December 2012

1 Project preparation, final bid and contract	December 2011– February 2012
2. Construction of the WTP	April – November 2012
3 Testing and commissioning	December 2012

2.6. Expected results:

The Water Treatment Plant will be used as a main source for preparation of drinking water for Probišlip city and its surrounding villages: Marčino, Dobrevo, Zletovo, Ratavica. The expected results are satisfying quantities and quality of the water according to the Macedonian and EU regulations and standards

2.7. Impact on the environment:

By their nature, the Water Treatment Plants are environmental friendly The used chemicals are not let into the environment Instead they are decomposed and degraded into a sludge that is transported to a predefined location for further processing

2.8. Sustainability:

The existing situation for preparation of drinking water does not correspond to the existing Macedonian and EU regulations and standards and by itself the Water Treatment Plant must be constructed.

2.9. Description of the project's development component:

The Probištip Water Treatment Plant will be provided with water that comes directly from the Zletovska River The selection of technology for preparation of drinking water from the river is defined by the quality of the water in the river and the regulations for hygienic quality of the drinking water as necessity of life.

The water treatment functional sheme is given in Figure 1

- The water from the river will be collected in a receiving well
- Pre Ozonation

The efficiency of removing insoluble and fine dispersed particles is increased by using ozone as pre-oxidant The ozone itself is not a coagulant, since it does not affect the electrical charge of colloids in water However, in specific terms, with disintegration, which binds organic molecules with iron and manganese, ozone can begin the process of coagulation of simple ions due to oxidation of metals and cause flocculation of organic colloidal matter, as is in the case with the muddied waters containing humic acid. By using ozone as pre-oxidant it prevents the formation of trihalomethanes and increases remova. of organic substances, thereby simplifying the subsequent stages of treatment

- Coagulation, Floculation and Sedimentation - clearing

The characteristic of this process is a small output water turbidity of less than one NTU and sludge, which derives from the process of dry matter concentration of 10% and more. This low turbidity allows the next phase of oxidation treatment with ozone to be minimal because the consumption of ozone reacts with suspended particles. Concentration of sludge at 10% and more eliminates the need for special phase for concentration of sludge and requires a smaller area of filter presses

- **Ozonation**

The Ozone is a gas that at normal temperature and pressure has very low thermodinamical stability, so it should be prepared on site and at the time of impelmentation

The Ozonation is multiple. The ozone is a powerfull oxidation agent that breaks into oxigen atom and molecule. The oxidation is relativly quick. The ozone connects with the organic molecules with double and triple bonds. Oxidation products are aldehydes and acids

Moreover the ozone oxidises present ions of metal, such as iron and manganese, nitrites into nitrates sulphides and sulphites into sulphats. Also it oxidizes detergents, pesticides and phenols, products with small molecule weight. It removes the taste and odor in the water, which may be of different origin.

Unlike the use of chlorine as an oxidizer, ozone does not produce substances that can have bad taste or odor in the water, but degrades chlorofenol. The ozonized water due to the degradation of ozone has increased amount of oxygen which gives it a pleasant taste.

Ozone is a highly effective disinfectant in a wide range of pH and temperature. It removes viruses, coli form bacteria and parasites much more efficiently

The disinfection effect of the ozone is based on the shredding of cell walls of bacteria unlike chlorine which penetrates into the interior of cells and attacks the enzyme group

- **Active carbon filtration**

These filters are installed as sand filters. The purpose of active carbon is removal of organic impurities, that were not removed in the previous phases, and removal of products that are decomposed from reaction with ozone, mostly fenol, prestiside and substancies that cause odor, flavor and color

The active carbon is an absorption agent with very large surface pores (over 1000 m2/g)

The contruction of the filter is similar with the sand filter. It is predicted a backwash of the filter with water whose flow is chosen so that there is no removal of activate carbon

- **Final preparation**

The process of water preparation is finished with chlorination in the Distribution Tank. For chlorination of the water is used chlorine in gas form. The dozing of chlorine is with automatic chlorinator so that at the outlet of the concentration the chlorine is 0,5 mg/L

- **Sludge treatment**

Chemical treatment of sludge will be implemented in the reaction tank by adding coagulant which transformes the sludge in a shape that easily separates from the water thereby providing easier sedimentation

2.10. Justification of the project's priorities

Water is the main natural resource for mankind Having drinking water with excellent quality is the first priority of every country for its citizen. Therefore we as a municipality are our obligation to provide drinking water with excellent quality to every household

2.11. Short analysis of the impact on the general development of the state, society, economy:

The construction of the water treatment plant for drinking water is related with the implementation of the project 'Zletovica basin water utilization improvement project' within which were constructed pipelines, water intakes and the dam 'Knezevo' In order to use the water from Zletovica River the municipality should have a water treatment plant and without this plant, the above mentioned project will be nonfunctional for us because the citizens of Probistip municipality couldn't use the water from the river The Government of the Republic of Macedonia took the loan from JICA for the mentioned project and its completion is in interest of the Government and the Municipality.

Besides that, unemployment is one of the biggest problems in R Macedonia. Creating new employment is one of the top priorities of the Government of the Republic of Macedonia and is made the Strategy for reducing unemployment. Construction, operation and maintenance of WTP will mean creating of new working places

Creating conditions for development of the technology - industrial zone is project of the Government of the Republic of Macedonia to promote and attract domestic and foreign interested investors Without implementation of this project, the Municipality of Probistip will not be able to provide the necessary amounts of water for the development of this zone.

Development of the technology - industrial zone would change the image of the Municipality of Probistip in the structure of economic activities and the creation of new jobs in long-term

Construction of the water treatment plant will mean providing of water which will satisfy both quality and quantity of water for the Probistip Municipality.

2.12. Project Budget

Cost specification of the project:

Description	Estimated costs (euros)
Hydro mechanical equipment	200.000
Laboratory	35.000
Automatic Control	60.000
Civil Works	1.000 000
Preozonation	105.000
TOTAL	1.400.000

Financial construction:		
Total cost of the project:		**1.400.000 euros**
Financial construction		
Probistip municipality	account no. is 757014070363010 within the treasury account,	120 000 euros
JICA	loan	800 000 euros
ODA needed to close the financial construction		480 000 euros

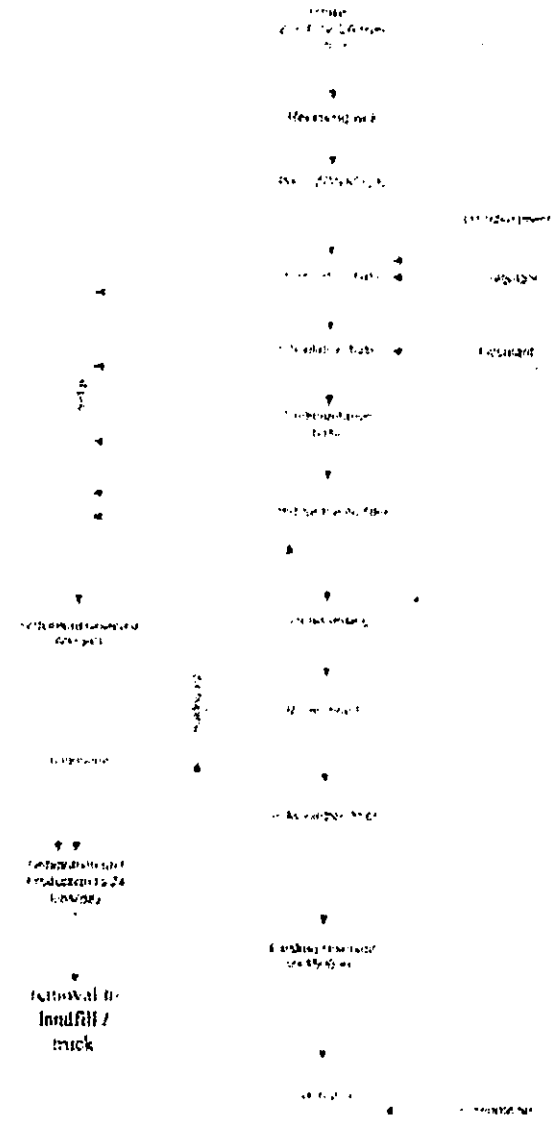


Figure 1: Functional sheme for preparation of drinking water from Zletovska River

The basic design will be prepared by the Civil Engineering Institute "Macedonia" (CEIM) who has a lot of experience in this area and has designed many WTPs in other cities in Macedonia

3. OTHER POINTS

Operation after project completion

After completing of the works, the maintenance of the WTP will be under the Public Communal Enterprise "Nikola Karev" - Probištip. The types of maintenance will be given in the Basic Design
Because of the fact that the most of the existing water supply system will not be used, which have a lot of maintenance expenses and water losses, because of the accoptable price for water from the PE HS "Zletovica" and the far least expenses for preparation for drinking water with the new WTP, this project have a big and priority meaning for the citizen of Probištip municipality
With the construction of the WTP, the costs for maintenance of the PCE "Nikola Karev" significantly will be reduces and will create conditions for development of the PCE"Nikola Karev" trough:
- reducing of the annual energy consumption (1 850 000 kWh/year) i.e. energy expenses (86 400 euros) for about 70%
- reducing of expenses for labor (131.000 euros) for about 90%
- reducing of expenses for amortization (28.130 euros) for 100%
- reducing of expenses for chlorination (16 000 euros) for 100%
- reducing of other expenses (52.000 euros) for 100%

Municipality of Probistip

Mayor

Toni Tonevski

Contractor:

ISKRA SISTEMI DD – SLOVENIA

Investitor:

MUNICIPALITY OF PROBISTIP

Supervision:

"STUDIO ATRIUM" DOO – STIP

INTRODUCING TO CONSTRUCTION WORKS OF OBJECT:

So today 17 th July 2012, it is considered that the contractor ISKRA SISTEMI D.D. – SLOVENIA with the subcontractor for the construction-craft works GTP BETON – Stip, is officially introduced in the work on the construction of the object:

CONSTRUCTION OF WATER TREATMENT PLANT FOR DRINKING WATER (TECHNOLOGY WITH ULTRA FILTRATION)

For the construction of this object exists following documentation:

1. Agreement for construction with complete constractual documentation between Investitor and Contractor, filed with the Investitor by no: 0306 - 694/1 from 11.05.2012 and undersigned by the Contractor.
2. Complete revised project prepared by architectural biro "Studio Atrium" D.O.O. Stip, and revised by "Venci Proekt" D.O.O.E.L. Kocani.
3. Approval for building issued by Municipality of Probistip on a date 12.07.2012, filed under no: UP 1 10-13 from 26.06.2012

Contractor:

Investitor:

Supervision:

АТРИУМ студио
ДРУШТВО ЗА ГРАДЕЖНИШТВО, АРХИТЕКТУРА ПРОЕКТИРАЊЕ, ИНЖЕНЕРИНГ И ДИЗАЈН
Никола Нехтенин Бр.1 / Штип, тел. 032 383-033
e-mail: atrium_studio@yahoo.com

Изведувач:	Инвеститор:	Надзор:
ИСКРА СИСТЕМИ ДД – Р.СЛОВЕНИЈА	ОПШТИНА ПРОБИШТИП	"СТУДИО АТРИУМ" ДОО - ШТИП

ВОВЕДУВАЊЕ ВО ИЗВЕДУВАЊЕ НА ГРАДЕЖНИ РАБОТИ НА ОБЈЕКТ:

Со денешниот ден 17 Јули 2012 година, се смета дека изведувачот ИСКРА СИСТЕМИ Д.Д. – Р.СЛОВЕНИЈА со подизведувачот за градежно - занаетчиски работи "Бетон" Штип,
е официјално воведен во работите на изградба на објект:

ИЗГРАДБА НА ПРЕЧИСТИТЕЛНА СТАНИЦА ЗА ВОДА ЗА ПИЕЊЕ (ТЕХНОЛОГИЈА СО УЛТРА ФИЛТРАЦИЈА)

За изградба на овој објект постои следнава документација:

1.Договор за изведување со комплетна договорна документација помеѓу Инвеститорот и Изведувачот, заведен кај Инвеститорот под Број : 0306-694/1 од 11.05.2012год и потпечатен од Изведувачот.

2.Комплетен ревидиран проект изработен од проектантското биро "Студио Атриум" ДОО Штип, а ревидиран од Венци Проект дооел-Кочани.

3. Одобрение за градење издадено од Општина Пробиштип на дата 12.07.2012 заведено под број : УП 1 10-13 од 26.06.2012.

Изведувач:	Инвеститор:	Надзорен орган:

АТРИУМ студио
ДРУШТВО ЗА ГРАДЕЖНИШТВО, АРХИТЕКТУРА ПРОЕКТИРАЊЕ, ИНЖЕНЕРИНГ И ДИЗАЈН
Никола Нехтенин Бр.1 / Штип, тел. 032 383-033
e-mail: atrium_studio@yahoo.com

Training Materials for Macedonian Manager Trainees

Background and Purpose

The JICA financed project named "Zletovica Basin Water Utilization Improvement Project" is going to the final stage to complete the phase 1 by January 2013. Taking this opportunity, we would like to introduce Japanese technology for your reference to construction, rehabilitation and operation and maintenance of the water treatment plant and water resources management, as well as hydro power project implementation of the project phase II and III.

Purposes are following,

1) Acquiring knowledge on the Japanese technology regarding water treatment and hydropower generation system

2) Improving skill of the water treatment plant management and water resource management

Schedule

23rd June - 1st July 2012, see detail attached

Member List

No.	Name and surname	Position	Organization
1	Kadir Salih	Director	Administration for Water Economy, Ministry of Agriculture
2	Stojan Milanov	Director	Hydrosystem Zletovica
3	Marjanco Arsov	President of Board	Hydrosystem Zletovica
4	Toni Tonevski	Mayor	Municipality of Probistip
5	Zoranco Aleksov	Mayor	Municipality of Stip
6	Milan Terzic	Director	Nikola Karev, Water company Probistip
7	Nikola Micevski	Director	Isar, Water company Stip

Note: Mr. Nikola Micevski will leave Japan on 27th June.

Order	Day		Schedule		Hotel
			AM	PM	
1	23	Sat	Leaving Skopje (TK 1004)	Arrival at Istanbul and leaving Istanbul for Tokyo (TK 50)	Plane
2	24	Sun	Arrival at Narita, Tokyo, Leaving for Hotel	Arrival at Hotel Meeting and welcome party from 5PM	Shinjuku, Tokyo
3	25	Mon	7:15AM leaving Hotel 9AM-10:30AM: Shiroyama Hydro Power Station 11AM-12:15PM: Aikawa Hydro Power Station at Miyagase Dam	Lunch at Miyagase Lake 2PM-3PM: Toya WTP 4PM-5PM: Ochiai WTP 6:30PM: Hotel	Ditto
4	26	Tue	7:45AM leaving Hotel 9AM-11AM: Kitachiba Water Supply Authority	Lunch 2PM－4PM: Arima WTP 6PM: Hotel	Ditto
5	27	Wed	8:15AM leaving Hotel 9:30-11:30: Kawai WTP	Lunch 2PM: Oriental Consultant, NRW lecture (Leakage control), Lecture of Hydropower technology, Preparing interim 7PM: Welcome diner by JICA at Shinjuku	Ditto
6	28	Thu	8:30AM leaving Hotel 9:30AM-11:30AM: Akigase office and weir, Japan Water Agency (JWA) 9:30－10:15(45)Lecture, －10:45(30) Q&A, －11:30 (45) site	Lunch 1PM-3PM: Misono WTP, Tokyo 5PM: from Asakusa to Nikko by train	Nikko
7	29	Fri	10AM-11:30AM: Seo WTP, Nikko Arrival at2:15 at Asakusa from Nikko	Lunch in train, preparing the report to JICA 3:00PM: Meeting with Director JICA, Reporting results of the training by trainees to JICA	Shinjuku, Tokyo
8	30	Sat	7:00AM Leaving Hotel by Airport Limousine Bus arrival at 8:40 at Airport terminal 1 11:40AM Depart Narita (TK 51)	5:40Arrival at Istanbul	Istanbul
9	1	Sun	7:50AM Leaving Istanbul (TK 1003) 8:05AM Arrival at Skopje	-	-

Major training courses at sites

No.	Site	Training courses	Date/time
1	Japan Water Agency (JWA), Akigase office and weir	Administration of water resources management, water intake operation, environmental standards	28th AM
2	Kitachiba Water Supply Authority	Regional water supply work	26th AM
3	Misono WTP, Tokyo	WTP operation and management, Large scale, Advanced Drinking Water Treatment Using Ozone	26th AM
4	Toya WTP	WTP operation and management, Rural water treatment plant	25th PM
5	Ochiai WTP	WTP operation and management, Treatment plant system with UF as same as Probistip WTP	25th PM
6	Seo WTP	WTP operation and management, Treatment plant system with UF as same as Probistip WTP	25th PM
7	Kawai WTP	WTP operation and management, Treatment plant system with Sludge blanket as same as Stip WTP	27th AM
8	Arima WTP	WTP operation and management, WTP with sludge drying bed proposed to be installed	26th PM
9	Shiroyama Hydro Power Station	Hydro Power Station with pumping-up hydraulic power generation (Lake Shiroyama and Tsukui)	25th AM
10	Aikawa Hydro Power Station	Hydro Power Station (Miyagase dam)	25th AM

Major training courses at OC office (Drft)

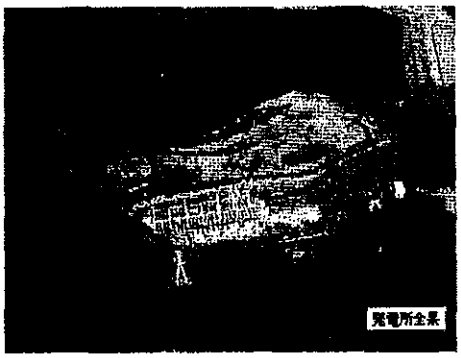
No.	Training courses	Date/time
1	Non Revenue Water	27th PM
2	Hydropower technology	27th PM

June 25th AM

Hydro Power Plant	Design Power Production Capacity (kW)	Remark
Shiroyama	250,000	Lake Shiroyama and Tsukui

Pumping-up hydraulic power generation

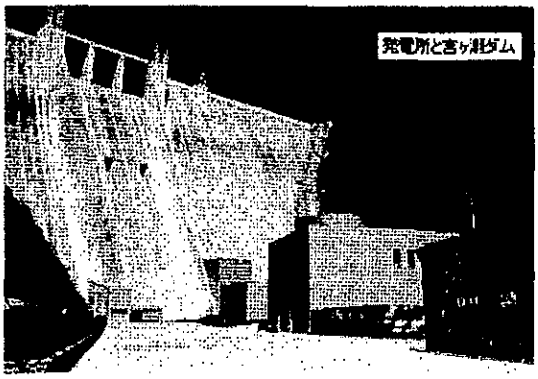
Flow:	192m3/sec
Effective head:	153.0m
Waterwheel:	vertical Francis
Number of pump:	4 pcs
RPM (Revolution per minute)	300 (No. 1&2), 273 (No.3&4)



June 25th AM

Hydro Power Plant	Design Power Production Capacity (kW)	Remark
Aikawa No.1 plant	24,000	Miyagase Dam
Aikawa No.1 plant	1,200	Sub dam (Ishikoya dam)

Item	Aikawa No.1 plant	Aikawa No.2 plant
Flow:	22m3/sec	7m3/sec
Effective head:	129.0m	22.0m
Waterwheel:	vertical Francis	Horizontal Propeller
Number of pump:	1 pc	1 pc
RPM (Revolution per minute)	429	500



NLB

12.07.2012
4403-M.Kus

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Ministry of Agriculture, Forestry and
Water Economy and Public Enterprise
Hydrosystem Zletovica of the Republic of
Macedonia
Leninova Str. 2

1000 Skopje
Republic of Macedonia

original

Advance Payment Security No. MD1218505400

Zletovica Basin Water Utilization Improvement Project, Package 4; Scada and Telecommunication system, Amendment No. 1, 2 and 3 including Memorandum on the Variation Order No.2

In accordance with the provisions of the Conditions of Particular Application, Sub-Clause 60.7 (»Advance Payment«) of the above-mentioned Contract, ISKRA SISTEMI, d.d., Stegne 21, 1000 Ljubljana, Slovenia (hereinafter called »the Contractor«) shall deposit with Ministry of Agriculture, Forestry and Water Economy and Public Enterprise Hydrosystem Zletovica, Leninova Str. 2, 1000 Skopje, Republic of Macedonia a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of EUR 280.000,00.

We, Nova Ljubljanska banka d.d. Ljubljana, Trg republike 2, 1520 Ljubljana, Slovenia, as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligor and not as surety merely, the payment to Ministry of Agriculture, Forestry and Water Economy and Public Enterprise Hydrosystem Zletovica on his first demand without whatsoever right of objection on our part and without his first claim to the Contractor, in the amount of

EUR 280.000,00
(say: euros twohundredeightythousand 00/100).

We further agree that no change or addition to or other modification of the Contract or of Works to be performed thereunder or of any of the Contract documents which may be made between Ministry of Agriculture, Forestry and Water Economy and Public Enterprise Hydrosystem Zletovica and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

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This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until Ministry of Agriculture, Forestry and Water Economy and Public Enterprise Hydrosystem Zletovica receives full repayment of the same amount from the Contractor, but until 14.12.2012 at the latest.

Date: 12.07.2012

Nova Ljubljanska banka d.d. Ljubljana
Trg republike 2, 1520 Ljubljana

Damir Erceg
Senior Trade Specialist

Helena Belinger
General Manager

NLB

12.07.2012
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Ministry of Agriculture, Forestry and
Water Economy and Public Enterprise
Hydrosystem Zletovica of the Republic of
Macedonia
Leninova Str. 2

1000 Skopje
Republic of Macedonia

original

Performance Security No. MD1218505402

Zletovica Basin Water Utilization Improvement Project, Package 4; Scada and Telecommunication system, Amendment 1,2 and 3 including Memorandum on the Variation Order No. 2

THIS AGREEMENT is made on the 12th day of July, 2012 between Nova Ljubljanska banka d.d. Ljubljana of 1520 Ljubljana, Trg republike 2 (hereinafter called »the Guarantor«) of the one part and Ministry of Agriculture, Forestry and Water Economic and Public Enterprise Hydrosystem Zletovica of 2, Leninova Street, 1000 Skopje, Republic of Macedonia (hereinafter called »the Employer«) of the other part.

WHEREAS

(1) this agreement is supplemental to a contract (hereinafter called »the Contract«) made between ISKRA SISTEMI, d.d., Stegne 21, 1000 Ljubljana, Slovenia (hereinafter called »the Contractor«) of the one part and the Employer of the other part whereby the Contractor agreed and undertook to execute the Works of Zletovica Basin Water Utilization Improvement Project, Package 4: Scada and Telecommunication system; as per Amendment 1,2 and 3 including Memorandum on the Variation Order No. 2; for the sum of EUR 70.000,00 being the Contract Price; and

(2) the Guarantor has agreed to guarantee the due performance of the Contract in the manner hereinafter appearing.

NOW, THEREFORE, the Guarantor hereby agrees with the Employer as follows:

(a) If the Contractor (unless relieved from the performance by any clause of the Contract or by statute or by the decision of a tribunal of competent jurisdiction) shall in any respect fail to execute the Contract or commit any breach of his obligations thereunder then the Guarantor will indemnify and pay the Employer the aggregate sum of

EUR 70.000,00
(say: euros seventythousand 00/100),

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original

such sum being payable in the types and amounts of currencies in which the Contract Price is payable, provided that the Employer or his authorized representative has notified the Guarantor to that effect and has made a claim against the Guarantor before the issue of the Defects Liability Certificate.

(b) The Guarantor shall not be discharged or released from his guarantee by an arrangement between the Contractor and the Employer, with or without the consent of the Guarantor, or by any alteration in the obligations undertaken by the Contractor, or by any forbearance on the part of the Contractor, whether as to payment, time, performance, or otherwise, and any notice to the Guarantor of any such arrangement, alteration, or forbearance is hereby expressly waived.

This Guarantee shall be valid until a date 28 days from the date the issue of the Taking-Over Certificate, at the latest until 22.01.2013.

Given under our hand on the date first mentioned above.

Signed by:

Damir Erceg
Trade Finance Specialist

Helena Belingar
General Manager

TRIGLAV OSIGURUVANJE AD
STOCK COMPANY FOR INSURANCE TRIGLAV
BUL. OKTOMVRISKA REVOLUCIJA BB
1000 SKOPJE, MACEDONIA
PHONE: + 389 2 / 5102 222, 5102 242
WWW.TRIGLAV.EU
WWW.TRIGLAV.MK

triglav

Policy No.:990000016113

For Buildings under construction and Third party liability including employers liability

Insurer:	TRIGLAV Osiguruvanje AD Bul.O.Revolucija bb 1000 Skopje, R.Macedonia
Insurer: (Contractor)	ISKRA Sistemi DD Ul.Stegne br.21 1000 Ljubljana, R.Slovenia
Sub Contractor:	GTD Beton – Stip A.D.Stip
Investor:	Municipality Probistip
Class of insurance:	Insurance of Construction and Erection works
Location of erection site:	Area of city of Probistip, R.Macedonia
Covered Risks:	According Triglav Osiguruvanje AD terms and conditions Section 1 : Material Damage Section 2 : Third party Liability including Employers Liability
Period of Insurance:	10.08.2012 – 31.12.2012 + 14 months extended maintenance

Sum Insured:

Section 1 :

1.400.000 Eur – Erection work and material
540.000 Eur – Construction work and material
60.000 Eur – Existing Property
75.000 Eur – Removal of debris per accident
350.000 Eur – Flood and Windstorm - Limit of cover/aggregate
15.000 Eur – Construction/Erection equipment- Limit of cover/aggregat

Section 2 :

370.000 Eur – per occurence and in the aggregate

Deductible:

Section 1 :

2.500 Eur – per occurence for construction and erection works
10.000 Eur – per occurence, during the checking/ experimental & guaranty period.

Section 2 :

1.000 Eur – per occurence

Premium: 7.358 Eur

Date:17.08.2012

Insurer:
TRIGLAV Osiguruvanje AD

TRIGLAV OSIGURUVANJE AD 1 SKOPJE

Insured:
ISKRA Sistemi DD

Iskra Sistemi, d. d. 10

ТРИГЛАВ ОСИГУРУВАЊЕ АД
БУЛ. ОКТОМВРИСКА РЕВОЛУЦИЈА ББ, 1000 СКОПЈЕ
МАТИЧЕН БРОЈ: 4691130
ДАНОЧЕН БРОЈ: 4030993129071

triglav

ПОЛИСА БР.990000016113

За Објекти во изградба и Одговорност за штети причинети на трети лица вклучувајќи и одговорност на вработени

Осигурувач:	**ТРИГЛАВ Осигурување АД** **Бул.О.Револуција бб** **1000 Скопје, Р.Македонија**
Осигуреник:	**ИСКРА Системи ДД** **Ул.Стегне бр.21** **1000 Љубљана, Р.Словенија**
Подизведувач:	**ГТД Бетон-Штип А.Д.Штип**
Инвеститор:	**Општина Пробиштип**
Вид на осигурување:	**Осигурување на објекти во изградба**
Локација на Ископот:	**Пробиштипски регион Р.Македонија**
Период на осигурување:	**10.08.2012 – 31.12.2012** **+ 14 месеци гарантен рок**
Покриени ризици:	**Според условите на ТРИГЛАВ Осигурување АД** **Секција 1 : Материјални штети** **Секција 2 : Одговорност за штети причинети на трети лица вклучувајќи и одговорност на вработени**

Суми на осигурување:

Секција 1 :

1.400.000 Еур – Ископи и материјал

540.000 Еур – Градежни работи и материјал

60.000 Еур – Постоечки имот

75.000 Еур – Отсранување на остатоци по несреќа

350.000 Еур – Поплава и Олуја – Лимит на покритие/агрегат

15.000 Еур – Градежна опрема и опрема за ископ

Лимит на покритие/агрегат

Секција 2 :

370.000 Еур – По штетен настан и во агрегат

Франшиза:

Секција 1 :

2.500 Еур – По штетен настан за градежни работи и за ископ

10.000 Еур – По штетен настан, за време на проверка / експериментален / гарантен период

Секција 2 :

1.000 Еур – П о штетен настан

Премија: **7.358 Еур**

Дата:17.08.2012

Осигурувач:

ТРИГЛАВ Осигурување АД

Осигуреник:

ИСКРА Системи Д.Д.

ТРИГЛАВ ОСИГУРУВАЊЕ АД Скопје

Iskra Iskra Sistemi, d. d.