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# *Hydrogeological features of the west Serbian Dinaric Karst*

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**ABSTRACT**

The West Serbian Dinaric karst spreads over the furthest southeastern part of the Dinaric karst area known worldwide. This karst spreads over a significant part of the state's territory and it is marked with approximately 10 large and several smaller mutually isolated masses, made predominantly of karstified limestone from the Middle Triassic period. The limestone has suffered extreme tectonic damages and after that, got transformed in several phases within a karst process. That is the reason why today this karst is characterized by a high level of transmissibility and a high percentage of infiltrated precipitation, as well as by huge groundwater reserves.

**Keywords:** Hydrogeological features, karst, Dinarides, West Serbia.

## Introduction

West Serbia was the subject of regional and basic hydrogeological investigation several times. During the period between 1967 and 1976, Geozavod Belgrade has synthesized a major part of existing data within hydrogeological investigation studies performed in four regions of chosen area. The report itself relies mainly on West Serbian karst investigation data. The investigations were performed by authors of these reports during the period between 2005 and 2007, for the purpose of studies, written in the year 2000 for the Institute for the development of water resources Jaroslav Cerni referring to general water framework directives (Water Framework Directive 2000/60/EC), as well as water supply of West Serbian population and industry. The motive for writing this study is closely linked to the international project Dinaric Arc which lacks data on the furthest southeast part of the Dinaric Arc (West Serbian karst).

## Basic geological features of the area and rock categorization based on the degree of water permeability

The furthest southeast part of the Dinaric karst area belongs to Serbia – typical geological units known worldwide for their extremely complex geomorphological and hydrogeological features (Cvijić J, 1900). The discovered karst area in Western Serbia extends from Loznica and Valjevo on the north, over Prijepolje and Sjenica, to the mountain range on the edge of Metohija valley on the south (Fig. 1). In this area which is 260 km long and 40 to 60 km wide, around ten large and several smaller mutually isolated zones (masses) that consist of Middle Triassic limestone are located (Komatina M, 1975). Morphologically, we can distinguish limestone massifs of Maljen, Povljen, Tara, Zvijezda, Zlatibor, Zlatar, Bučja, Jadovnik, Giljeva, Velika

Ninaja, Mokra Gora, Žljeb, Koprivnik, Paštrik and Koritnik (Cvijić J, 1926). That is why the area of the West Serbian Dinaric karst has distinct mountain features with heights AMSL between 110 and 2,700 m. Atmospheric precipitation height during an average wet year varies between 750 and 1200 mm while its average is 910 mm. The West Serbian Dinaric karst area is distinguished by relatively diverse lithostratigraphic structures and complex structural composition. Among numerous geological formations, the most widely spread are the following:

1. Mio-Pliocene Lacustrine sediments complex.
2. Jurassic Diabase-chert formation.
3. Middle and Upper Triassic Limestones, rarely dolomitic limestones.
4. Early Palaeozoic Schist complex.

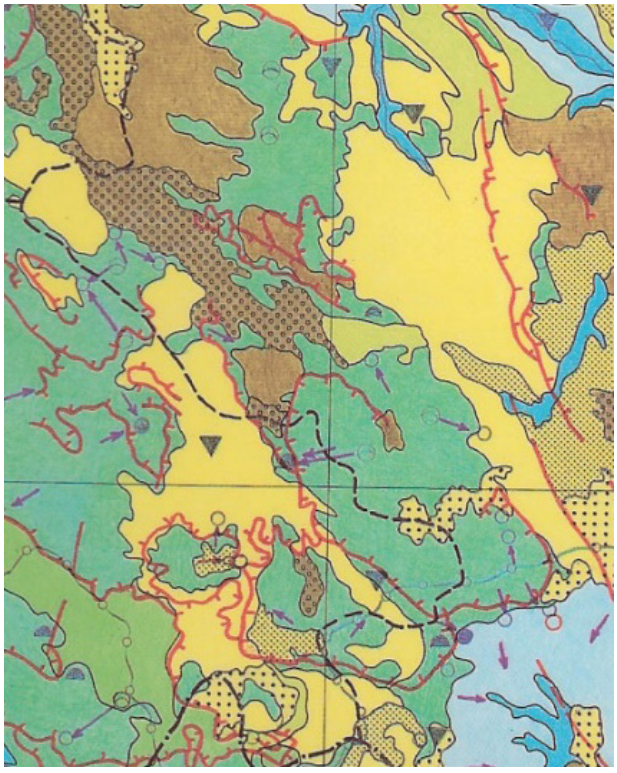

Figure 1: Karst terrains of W. Serbia with adjacent regions (Komatina M., 2016).

Schists forms terrains north of Valjevo and Loznica, the area between the Povlen massif and the line Perućac-Užice. They also form the spacious Dinaric region border zone east of Ivanjica and Novi Pazar. According to rock categorization based on the degree of water permeability, they range from impermeable to low permeable environment. A thin Werfenian-flysh complex lies over the layer of Schists, and after that, a thick series of Middle Triassic limestones (rarely dolomitic limestones), which create the main geological formation of the West Serbian Dinarides. Because of their chemical and mineralogical purity, a high level of suffered tectonic damages and lengthy terrestrial phase, limestone is intensively karstified near surface and in the depths. That is why it is an extremely permeable environment and could contain large reserves of accumulated groundwater.

Here and there, the top layer for limestone is formed by extremely heterogeneous formations like Diabase-chert formation or Peridotite (serpentinite) and Neogene Basin formation. Diabase-chert formation is widely spread in the river basins of Veliki Rzav and Mali Rzav, then in the vicinity of Nova Varoš, Prijepolje and Sjenica. The Zlatibor massif stands out from other Peridotite masses because of its dimensions, and the Metohija basin stands out from other Neogene Basins. The mentioned geological formations, compared to limestone, represent an impermeable environment and an impermeable top layer for precipitation infiltration, as well as a barrier for further movement of groundwater.

As it was already said, this terrain has extremely complex structural composition. Among various larger and smaller folded formations, there are numerous neotectonic structural fractures (fracture zones). Because of that, positional relations between the mentioned geological formations are disturbed, and karst contact springs often occur along the fractures (Katzer F, 1909).

# Basic hydrogeological features of the area

From the hydrogeological point of view – first of all – it is important for every karst mass of this area as the reservoir for groundwater to become acquainted with the positional relations between the older geological formations from substratum (Schist, Werfen), and with the younger formations (Diabase-chert formation, serpentinite, Neogene) (Komatina M, 1970). All the important features of limestone aquifer, i.e. the water body accumulated in it, are the result of structural and positional relations within these three packages of rocks with different permeability (groundwater accretion and circulation direction, possibility of accumulation and discharge, pollution saturation, etc.). For aquifers of the Zapadna Morava upper drainage basin, for example, the most convenient circumstance for groundwater accumulation forming is if limestone is

laterally enclosed by an impermeable layer (barrier). But this phenomenon does not occur so often in this area, so groundwater usually flows out directly into the river. On the other hand, the position of karst aquifer and supplementation of corresponding water body can become extremely complex if the top layer is formed out of impermeable rocks, which is characteristic for the West Serbian karst. This feature is particularly expressed in two most important limestone areas: (1) Zlatibor, Zlatar and the drainage basins of Veliki and Mali Rzav, and (2) Pešter plateau and surroundings, where impermeable formations cover between one third and one half of the karst aquifer area. The existence of such top layer certainly makes groundwater balance more difficult but also contributes to the fact that there are no qualitative (chemical) pressures on groundwater accumulation forming process (Komatina M 1964/65).

West Serbian karst water resources belong to the two hydrographic entities – the Black Sea drainage basin and the Adriatic Sea drainage basin, considering only Beli Drim drainage basin within the Adriatic Sea drainage basin (Metohija valley with surrounding mountains). Drainage basins of Drina, Zapadna Morava and Kolubara belong to the Black Sea drainage basin. The following karst areas belong to Drina and its headwater Lim drainage basin: Povlen, Tara – Zvijezda, karst of the Prijepolje surroundings and most of the Pešter plateau karst; Zapadna Morava and its headwater Ibar drainage basin: Zlatibor karst, drainage basins of Veliki and Mali Rzav, Đetina, mountain Ninaja and upper Ibar karst; Kolubara drainage basin: Maljen karst (Lelić karst) (Fig.2).

Groundwater discharge regime depends on the hydrogeological terrain structure and, more or less, has a lower uniformity coefficient. Karst springs, formed on the contact surface between limestone and some kind of barrier, are less uneven, especially if limestone has better retention features. The size of the outflow module subsurface ranges between 5.5 and 17.0 l/s/km2. The groundwater type is calcite hydro-carbonate and it has low mineralization. The quality is very good (mostly I and II drinking water class).

Relatively widely spread occurrences of the thermo-mineral waters suggest a presence of deep-ground circulation through the karst collectors. The following eight thermo-mineral water springs are of great practical significance and have great capacity: Ovčar banja, Vrujci, Petnica, Lađevac, Vrutačko vrelo, Pribojska banja, Crno vrelo and Čedovo near Sjenica.

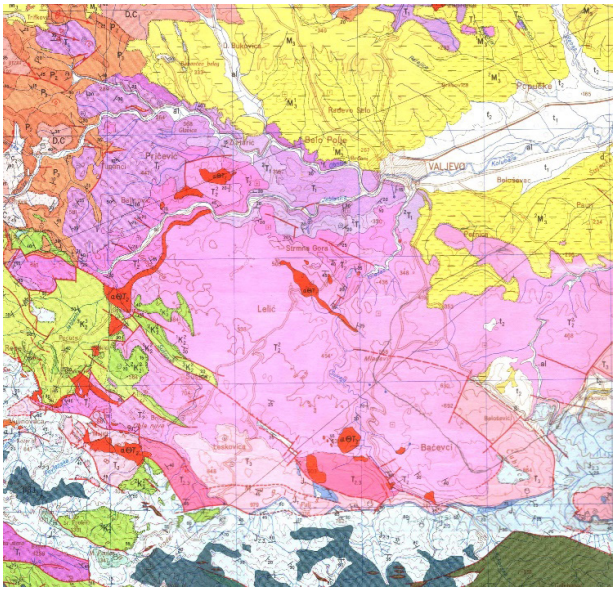


Figure 2: Karst terrains of central and western part of the Lelić area
1. Pink area – karst terrain,
2. Yellow – Neogene,
3. Blue – diabase – chert formation (Komatina M., 2016).

# A survey of karst aquifers

**1. Mountain Maljen aquifer (Lelić karst)**

The mountain region of Maljen is located south of the city of Valjevo and covers an area of almost 280 km2. It is made of Middle Triassic limestone (rarely of dolomite), monoclinally positioned toward the north. Tectonically damaged limestone is much karstified, and that is why this area is marked with numerous lapies, sinkholes, ponors, fissures and shorter dry riverbeds. In literature, this area is known as Lelić karst (J.Cvijić, 1912). The major part of precipitation becomes, concentrated of diffuse, infiltrated into permeable limestone and directed toward the north through the schist substratum.

This groundwater comes across an impermeable barrier made of the Valjevsko-mionički basin sediment and, along the tectonic contact surface between limestone and Neogene, emerges on the surface in the form of several strong contact springs: Paklje (Qmin 150 l/s), Gradačka vrela (Qmin 410 l/s), Petnica (Qmin 45 l/s), Ključka vrela (Qmin 60 l/s), seepage spring Vrujci (Qmin 200 l/s). The only spring among them which has been tapped in order to satisfy the city of Valjevo's needs is exsurgence Paklje and partly Gradačka vrela.

Test drilling in the Valjevsko-mionički basin and in the area north of the basin (Mačva, Posavo-tamnava, Srem) showed that Triassic limestone is widely spread in the north, but also emphasized its practical importance regarding aquifer with large thermal water reserves, and a potential spring located in Mačva. Let us also mention the spring that is formed in Nepričava near Lajkovac – in covered karst aquifer – in order to supply the population of Lajkovac. Its capacity is 120 l/s (Komatina M., 2016).

**2. Mountain Povlen aquifers**

The mountain Povlen massif extends south from city of Valjevo. Apart from Middle Triassic limestone, the mountain consists of Diabase-chert formation and other impermeable rocks. The two most important geomorphologic formations are: (1) karst area Vinčina voda – Zapolje with long rock area along the southern edge, and (2) wide Palaeozoic shale region, steeply leaned toward the river Drina. This karst area is marked with numerous lapies, sinkholes, ponors and long dry karst valley Široki do – Prekobrdo with a large number of periodically active ponors. Around 60% of precipitation gets infiltrated into limestone. Groundwater gets directed toward the contact area between limestone and the Palaeozoic shale and gets discharged through the Bakića vrelo and Taorsko vrelo. Apart from these two separate water bodies, there is also the limestone massif of Trešnjica whose water gets discharged directly into the Trešnjica river bed. The groundwater discharge regime varies during one budget year, so extreme spring-flow values for Bakića vrelo are 90 and 320 l/s, and for Taorsko vrelo 40 and 160 l/s. Taorsko vrelo has been partially tapped in order to satisfy the city of Kosjerić's needs (Komatina M., 2016).

**3. Aquifers of Tara and Zvijezda massifs**

Tectonic blocks of mountains - Tara and Zvijezda, west of Užice, are distinctly mutually separated by the regional fault zone of Konjska reka (Fig.3). They are built predominantly out of strongly karstified limestone and partly out of Triassic dolomite limestone. The highest peaks of these mountains are 1675 m (Zvijezda) and 1544 m (Tara), while the river Tara, which partially separates them, runs on the level of about 290 m AMSL.

The mountain Tara has large features of the Quaternary area, it expands through 183 km2 and has an average height of 1200 m. Triassic limestone is predominant in this area, and the edges, as well as central parts, consist of heterogeneous (mostly impermeable) rocks. Mitrovački fault divides the massif in two parts, and the east wing is elevated. The plateau is rich with surface karst formations such as karst uvalas and valleys with sinking rivers and numerous sinkholes. The closed depressions Dobro polje, Ljuto polje and Bogdanovac stand out (Komatina M., 2016).

A major part of Tara groundwater tends toward the drainage base in the north. The leading privileged collector is presented by Mitrovački fault and the biggest natural sink of the karst aquifer is exsurgence Perućac. This groundwater outcrop emerges at the contact area between limestone and Werfenian sediments, and has relatively good retention features (1340:2300:6500 l/s). A very small part of this exsurgence is tapped in order to satisfy the needs of the fish pond. Untapped exsurgences of the rivers Rača (85:250:680 l/s) and Solotuša (75:190:460 l/s), as well as the thermal spring Ladjevac (Qav 50 l/s, water temperature 17,5-20,00C) are located further East, in the same contact area.

Favourable conditions for groundwater accumulation do not exist in the area of mountain Zvijezda, so groundwater discharges directly in the river Drina.

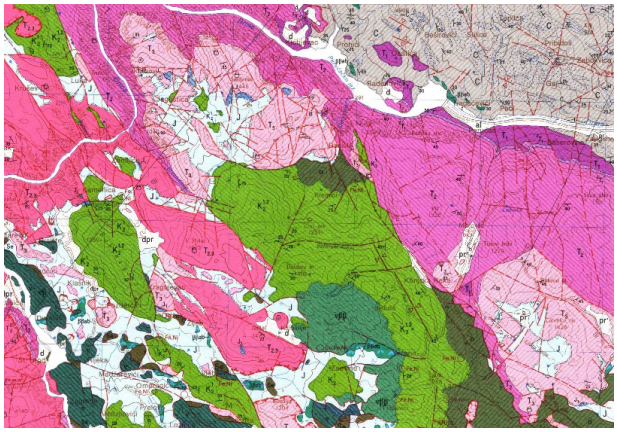

Figure 3: The karst of Tara and Zvijezda mountains
1. Pink – Karst terrains,
2. Others – impermeable rocks (Komatina M., 2016)

**4. Aquifers of the mountains Zlatibor and Zlatar and the drainage area of the river Rzav**

They are placed within the large karst area between Užice in the north and Sjenica in the south. If we also consider the limestone covered with an impermeable top layer, this area measures around 1520 km2. Here, limestone forms some sort of a discontinuous ring around the peridotite Zlatibor massif. In the limestone substratum, Werfenian formations and Paleozoic shale are located while diabase-chert

rocks form a partly impermeable cover (bedrock). The surface discharge from peridotite and diabase-chert rocks runs to the limestone contact area where groundwater percolates into numerous ponors, and emerges again in the mountain foothill through several exsurgences. There are several exsurgences in the area of mountain Zlatibor (Komatina M., 2016):

1. A group of water bodies from northeastern slopes of the mountain Zlatibor and drainage area of the river Djetina. Groundwater flow accretion comes from percolation of the shorter surface rivers formed on peridotite and direct infiltration of precipitation into limestone. The groundwater moves towards north and northeast and discharges through numerous karst springs in the area of drainage bases – rivers Djetina and West Morava. The biggest are: Sušičko vrelo (Qmin 420 l/s), Vrutačko vrelo - thermal and cold (Qmin 135 l/s) and occurrences in Jelisavčići (Qmin 135 l/s) and Stapari (Qmin 35 l/s). The mentioned occurrences are not tapped.
2. The water body of river Ljubišnica spring. Discovered karst formation near Ljubiš discharges though the river Ljubišnica spring, tapped in order to satisfy the fish pond needs. The spring-flow varies between 70 and 350 l/s. It was already emphasized that a major part of groundwater from this area drains into the rivers Veliki Rzav and Mali Rzav. Today, Veliki Rzav is the regional water supply source.

South of Zlatibor, massifs of mountains Zlatar, Kozomora and Kitonja distinctively stand out within the landforms. They consist, to a great extent, of Middle Triassic limestone. Aquifer is partially covered with diabase-chert formations, especially in the case of mountain Zlatar. Lacustrine formations, from Neogene, partly form the top layer above limestone. Groundwater circulates through distinctly discontinuous karst toward the river Bistrica valley (Lim tributary) as its drainage base. Here emerge numerous outcrops, a.o. Radovića vrelo (Qav around 300 l/s), Crno vrelo (Qav around 200 l/s), Česme (Qav around 70 l/s), Pećine (Qmin 45 l/s) and Vrelo (Qmin 40 l/s). Some of the mentioned occurrences are tapped in order to satisfy the city of Nova Varoš's needs.

In the mountain area north of the Neogene basin of Sjenica, groundwater gets directed toward south and southeast and it emerges in the contact area of limestone and Neogene. Out of the main groundwater outcrop – exsurgences of Zarudina – during the drought period, flow around 250 l/s. Another important exsurgence is Šarsko vrelo (Qav oko 120 l/s). Exsurgence of Zarudina is tapped in order to satisfy the needs of cities of Sjenica and Štavlje.

**5. Karst aquifers in the vicinity of the city of Prijepolje**

Several karst masses which have large capacity resurgences exist in one part of the drainage area of the river Bistrica, in the vicinity of the city of Prijepolje. Aquifers of Bučja and Jadovnik massifs, as well as those of Brodarevo area, stand out.

The mountain terrain Bučja, west of Prijepolje, is a predominantly open aquifer that consists of Middle Triassic limestone. Through that discontinuously permeable medium, groundwater circulates toward north (toward exsurgence Bučja) and toward east (toward exsurgence Seljišnica), up to the impermeable barrier of diabase-chert rocks and schist. Typical spring-flows are: Seljašnica – Qmin 400 l/s, Qav 1200 l/s; Bučje – Qmin 300 l/s, Qav 1100 l/s. The exsurgence of Seljašnica is tapped in order to satisfy the city of Prijepolje's needs.

The aquifer of Jadovnik i Brodarevo spreads over mountain massifs of Jadovnik and Komoran, southeast from Prijepolje. Almost a quarter of intensively karstified limestone from the Middle Triassic area is covered with impermeable top layer made of diabase-chert rocks. Groundwater circulates towards the main drainage base – river Lim valley, where it discharges through the untapped exsurgence of Sopotnica, with minimal water-yielding capacity that measures almost 300 l/s (Komatina M., 2016).

**6. Aquifer of Pešter plateau and its surroundings**

Among the Dinaric karst of West Serbia, the karst of Pešter plateau and its surroundings stand out because of its size (Fig.4). That distinct karst area covers around 1900 km2. Among surface karst formations the most important are: Pešter field (40 km2) marked with numerous ponors and a sinking river Borovštica. Borovštica runs from Đerekarsko vrelo, and there are around 140 different registered places where the river percolates along its course.

Besides numerous percolation shafts in the field, long cave exsurgence which is located downstream from the village Đolovići stands out among speleology formations. The area itself has a mountainous character, with Triassic limestone that forms more mountain massifs, surrounded with an impermeable layer like schist, diabase-chert rocks and Neogene

sediments. Additionally, on more than one third of the area, above limestone lie diabase-chert formation rocks and Neogene. That top layer is thickest in the area southeast of Sjenica and southwest of Tutin.

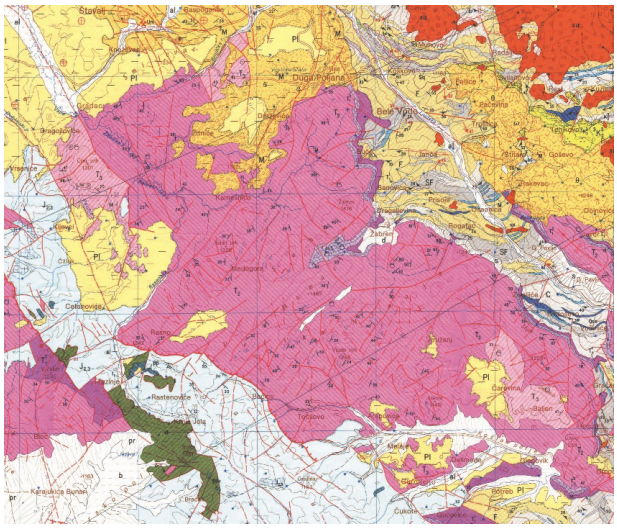

Figure 4: The karst of the northern part of Pester polje (near Sjenica)
1. Pink – Karst terrains,
2. Others – impermeable rocks (Komatina M., 2016)

Within the structure of Pešter aquifer, several water bodies are noticeable – the water body of Sjeničko vrelo, water bodies of Vape and Raška exsurgences, a group of upper Ibar exsurgences by Ribarić and the water body of Bistrica exsurgence.

The water body of Sjeničko vrelo (Grabovica exsurgences) spreads over a relatively small area. It is interesting for the ways of groundwater accretion: in the west part of the drainage area, the river Trijebinska percolates into aquifer – direct precipitation infiltration into aquifer. Inside, the limestone water circulates towards north and discharges through Sjeničko vrelo. Sjeničko vrelo is the exsurgence that emerges on the contact area between Triassic limestone and diabase-chert formation and has very variable water-yielding capacity during one year – from 250 to 2500 l/s. It is tapped in order to satisfy the city of Sjenica's needs (Komatina M., 2016).

The water body of the river Vape exsurgence is located southeast of Sjenica. Similar to the above mentioned water body, groundwater origins partly from the direct precipitation infiltration into limestone, and partly from percolation of the west part drainage area surface water into diabase-chert formation. It should be emphasized that the limestone located in the southwest part of the drainage area is covered with the relatively thick layer of diabase-chert formation. While circulating toward northwest through the limestone, groundwater comes across the barrier made of Neogene sediments and it discharges, almost completely, through one spring - river Vape exsurgence. The water - yielding capacity of this untapped exsurgence varies – from 550 to 9000 l/s.

The water body of the river Raška exsurgence spreads west from the city of Novi Pazar, across the area of about 190 km2. The field is made of Triassic limestone, and it is covered, to a very small extent (along the southwest border of the water body), with the diabase-chert formation rocks. The main massif groundwater – of the mountain Ninaja – circulates toward east. Dynamic reserves of this water body discharge through the exsurgence with the same name, located in the contact area between the limestone and schist, in the vicinity of the monastery Sopoćani. This exsurgence is of siphonic (sinkhole) type and has a water - yielding capacity that varies from 950 to 7600 l/s. One third of the minimal flow is tapped in order to satisfy the needs of the city of Novi Pazar, while the bigger part is used for hydroelectric power plant Ras and for the fish pond.

The water body of upper Ibar is formed within the limestone massifs in the vicinity of Ribarići, and this area measures around 110 km2. Karstified Triassic limestone is open aquifer, excluding around 15% of the area that has a top layer made of diabase-chert formation. Groundwater discharge is concentrated through three following exsurgences: Crno vrelo (Qav around 7500 l/s, Qmax around 4500 l/s), Miljina glava (Qav around 480 l/s) and Vrelo (Qav around 180 l/s, Qmin around 30 l/s). The water body of the Bistrica exsurgence is partly located at the territory of the Republic of Montenegro. It spreads over almost 450 km2. This tectonic damaged and intensively karstified limestone lies with its bigger part exposed to the surface. Exceptionally, on the surface of around 30 km2, an impermeable top layer is made of the diabase-chert formation rocks, while the limestone in the Pešter field is covered with quaternary detritus which is 20 m thick. Hydrogeological relations in this area are very complex. Generally, groundwater flows toward southwest, precisely toward exsurgences of Bijelopoljska Bistrica. Upstream, there is an exsurgence that emerges from the mentioned cave near Đalovići, and its water - yielding capacity varies between 580 and 9000 l/s. This water is partly used in order to satisfy the needs of the city of Bijelo Polje. Downstream, the exsurgence Juriško has similar capacity but is not tapped.

**7. Karst aquifers of Metohija's mountain edge**

The mountain massifs of the Metohija valley northern area are mostly made of massif Middle and Upper Triassic limestone.

The results of the dye test performed on the ponor Savina voda showed that a major part of the Mokra gora limestone mass groundwater is pointed toward the ravine as its drainage base. Discharging of this water is performed at the contact area between limestone and a barrier made of diabase-chert formation through the exsurgence Istok (Qmin 800 l/s, Qmax around 6600 l/s) and exsurgence Vrelo (Qmin around 150 l/s, Qmax around 2600 l/s). Just a very small part of the exsurgence Istok is tapped, in order to satisfy the needs of the village with the same name.

Limestone of the mountains Maja Rusolija and Žljeb belongs to the drainage area of the richest exsurgence in Serbia – exsurgence of the river Beli Drim. Water discharges at the contact area between limestone and the diabase-chert formation rocks, in the vicinity of the village Radavac (northeast from the city of Peć). Water - yielding capacity varies between 900 and 15500 l/s. This exsurgence is partially tapped in order to satisfy the needs of the city of Peć (Komatina M., 2016). Mountain Paštrik and Koritnik karst water bodies, along the edge of the southern part of Metohija valley, discharge through the several occurrences in the village of Vrbnica, through the exsurgence in the village of Poslište and other groundwater springs in the vicinity of Prizren. The main spring in Vrbnica is located in the contact area between limestone and Paleozoic shale and has water - yielding capacity that ranges between 490 and 3300 l/s. The exsurgence in Poslište is also a contact occurrence and its water - yielding capacity varies between 210 and 1900 l/s.

# Conclusion

Geological factors important for karst process development are: chemical purity and limestone texture, the level of the suffered tectonic damage and existence of the fracture structures of a larger scale, hypsometric relations between limestone and the impermeable geological formations, duration of the terrestrial phase, as well as the climate and other conditions during that phase. Modelling of the privileged underground karst formations is primarily directed by position and dimensions of a fracture structure. In the case of the West Serbian karst, however, the impermeable footwall position (most frequently – the Palaeozoic shale within a monocline structure) and hanging footwall (most frequently Neogene lacustrine formations, and diabase-chert formation, locally also peridotite) are very important for the groundwater distribution within a karst aquifer. For the discharge of formed water bodies, however, in the foreground lies the position of the impermeable barrier. That is why karst exsurgences primarily emerge on the contact area between limestone and the side barrier. Karst exsurgences with the largest water – yield capacity are: Perućac, exsurgences of the rivers Vapa, Raška and Beli Drim, exsurgence Istok and Vrbničko vrelo.

The most significant feature of the West Serbian karst is surely the impermeable block made of younger geological formations that significantly cover karst. This is the explanation of the phenomenon that more karst resurgence, practically, don't have sufficient catchment area if the close mass of the open karst which corresponds to the exsurgence capacity is considered. The existence of the impermeable block, as well as very low population density, are the main reasons for absence of qualitative (chemical) pressures on the water bodies, so the major part of the springs has drinking water of excellent quality. An existing trend excludes the possibility of risk increasing during the decades to come.

The following occurrences could deviate from this rule: Ključko vrelo (increased concentration of nitrates), Perućac (momentarily, very brief occurrences of biological pollution arrived through the Mitrovački fault), Sjeničko vrelo (occasional unclearness and bacteriological improperness). In the case of exsurgences of Bijelopoljska Bistrica, potential dangerous points of chemical and microbiological status worsening in the future could be the intermittent river of the Pešter field. Anyway, it is considered that – within the process of setting the sanitary protection zones in the karst – special attention should be payed to the percolation zones and the privileged collectors between ponors and matching groundwater springs. A major part of the West Serbian settlements is using the water of the nearby springs. However, the level of the exploitable karst groundwater reserves usage is generally minimal. The conclusion is that the quantitative status of isolated water bodies is satisfactory, and that could also be forecasted for the future. The general conclusion is that the quantitative and the qualitative influence of groundwater on terrestrial and water ecosystems remains, in the practical sense, unchanged, which means that the previous ecosystem status has not been changed.

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# *Hidrogeološke karakteristike Dinarskog karsta Zapadne Srbije*

**SAŽETAK**

Dinarski karst Zapadne Srbije prostire se preko jugoistočnog dela svetski poznate oblasti Dinarskog karsta. Teren karsta pokriva značajan deo državne teritorije i čini ga deset velikih i nekoliko manjih izolovanih celina, pretežno izgrađenih od karstifikovanog krečnjaka iz perioda srednjeg trijasa. Krečnjak je podvrgnut izrazitim tektonskim oštećenjima i posle toga izmenjen u toku nekoliko faza u okviru procesa karstifikacije. To je razlog što se ovaj karstni teren danas odlikuje visokim nivoom propusnosti i visokim procentom infiltriranih padavina, kao i velikim rezervama podzemnih voda.

**Ključne riječi:** Hidrogeološke karakteristike, karst, Dinaridi, Zapadna Srbija.