Bad Moos

Community: Sesto
Location: Sesto
Water catchment area: Fiscalina River, Sesto River, Drava
Altitude: 1370 m a.s.l.

Description of the area

The water spring lies in a clearing on the edge of a conifer forest, on the orographic right side at the entrance to the Fiscalina Valley, behind the hotel of the same name. It is safeguarded by a spring water protection zone with a suitable barrier.

Description of the spring

Water retaining structure: Completely closed
Impoundment: All the water is impounded and drained
Substrate Stones, sand
Delivery: Mean of 5 l/s
Geology of spring type: Gravity spring from groundwater seepage
Lithology and groundwater body: The spring crop-out lies in the strata of the Bellerophon Formation and is constrained by the way the strata are cut by the morphology of the slope. The aquifer consists of marly-calcareous and argillaceous sediments of the Werfen Formation and the calcareous, gypsiferous strata of the Bellerophon Formation, from which the water absorbs its mineral content on its underground passage. Sulphate and sulphide are created by the solution of the gypsiferous strata of the Bellerophon Formation.

The water is impounded in a concrete basin, in a closed timber construction. It is used for applications in the nearby hotel.
The spring water has been approved as mineral water by Decision No. 3919, dated 16.10.2000 of the State Government.

Chemical investigation

Chemical properties of the water **Sampling date:07.02.1995**

pH value			7.51		Aluminium	Al	µg/l	Not ready
Conductivity	20°C	µS/cm	1970		Arsenic	As	µg/l	
Alkalinity	CO_3	mg/l	0		Barium	Ba	µg/l	Not ready
Alkalinity	HCO_3	mg/l	219		Boron	B	µg/l	Not ready
Total hardness		°F	164.0		Bromide	Br	µg/l	Not ready
Residue at 180°C		mg/l	2330		Cadmium	Cd	µg/l	
Ammonium	NH_4	mg/l	None		Chromium	Cr	µg/l	
Nitrite	NO_2	mg/l	None		Iron	Fe	mg/l	
Nitrate	NO_3	mg/l	< 1		Iodine	I	µg/l	Not ready
Chloride	Cl	mg/l	1		Lithium	Li	µg/l	Not ready
Fluoride	F	mg/l	1.10		Manganese	Mn	mg/l	
Sulphate	SO_4	mg/l	1430		Mercury	Hg	µg/l	
Sulphide	S	mg/l	Not ready		Nickel	Ni	µg/l	Not ready
Calcium	Ca	mg/l	560		Lead	Pb	µg/l	
Magnesium	Mg	mg/l	59.0		Copper	Cu	µg/l	
Potassium	K	mg/l	0.70		Selenium	Se	µg/l	Not ready
Sodium	Na	mg/l	2.5		Zinc	Zn	µg/l	Not ready
Strontium	Sr	mg/l	5.90		Radon	Rn	Bq/l	Not ready
Silicic acid	SiO_2	mg/l	Not ready					

Commentary on the results
The water from the spring is classified as mineral-rich water containing fluoride, sulphate, calcium and magnesium. It presents an unusually high degree of hardness and moderate iron content.

Biological investigation

Date: 11.09.2000

Sampling locations: Intake basin

Water temperature: 7°C

For sampling purposes the stones at the bottom of the basin were loosened and the concrete walls scraped clean; then the water in the basin was filtered.

Fauna discovered

Oligochaeta

Enchytraeus sp.	1
Haber CF. turquini	2

Acari (mites)

Oribatida gen sp**.**	5

Diptera (flies)

Psychodidae (moth flies**)**	**1**

Commentary on the results

The fauna is poor in species and in individuals; the evidence of the troglobite ***Haber turquini*** is particularly significant. The two specimens, which had been collected in September 2004, could not be identified with absolute certainty, and so on 24th June 2005 a second sampling was undertaken. This time, an adult specimen in sound condition was collected and provided evidence for the presence of ***H. t*urquini** in this spring. This species had previously been known only in groundwater habitats in France and its presence here could be confirmed for the first time in Italy. This provides evidence that the area of distribution of this taxon is expanding eastwards.

A further element worthy of note, which was discovered in the spring biotope, is the millipede ***Polyxenus lagurus***. This is a terrestrial species, which is represented by numerous specimens, 24 adults and ten pre-adult specimens (parthenogenetic females). This confirms that the hermaphroditic form of ***P. lagurus*** does not occur in Northern Italy. The presence of this species had also been demonstrated for the first time in the springs of the Alps. The discovery was also made during sampling in June 2005, which shows that a stable population lives in the area of the spring.

The fauna of the Bad Moos spring is indeed poor in species and in individuals, but this is nevertheless of considerable significance, for it is considered that the high content in mineral salts of the water may place constraints on the fauna. The coenosis groundwater species (***H. turquini***) join terrestrial elements such as ***P. lagurus*** and oribatid mites, which show that the spring biotope functions as an ecotone for the contiguous habitat.

Data source: “Südtiroler Quellfauna”, 2006, Autonomous Province of Bolzano
http://www.provinz.bz.it/umweltagentur/projekte/quellfauna.asp