



TEST REPORT

Testing laboratory accredited by NAT under **NAT 1-1274/2011**

Name of the testing laboratory:	TECHNO-VÍZ Laboratóriumi és Mérnökszolgálati KFT 5000 Szolnok, Vízmű út 1 Phone/fax: (56) 525-065, 525-161	
Sampler:	TECHNO-VÍZ KFT.	
Sampling method:	Accredited sampling	
Date of sampling:	24.10.2012	
Sample ID number:	11635/2012	
Test methods:	MSZ 448-10:1977 (withdrawn standard) Chapter 3	Sodium
	ISO 448-10:1977 (withdrawn standard) Chapter 4	Potassium
	MSZ ISO 7150-1:1992	Ammonium
	MSZ 448-3:1985 Chapter 2	Calcium
	ISO 448-3: 1985 Chapter 3	Magnesium
	MSZ 1484-3:2006.& Chapter 2	Iron, manganese
	MSZ 1484-13:2009, clause 6.2	Nitrite
	ISO 1484-13:2009, clause 5.2	Nitrate
	MSZ 1484-15:2009	Chloride
	MSZ 448-11:1986, clause 6.2	Carbonate, bicarbonate. Hydroxyl
	MSZ 448-2:1967 Chapter 1	Temperature
	MSZ 1484-22:2009	pH/L/
	MSZ EN 27888:1998	Specific conductance/L
	MSZ 448-19:1986 Chapter 4	Evaporation Mar./180Co Evaporation Mar./2&oc*
	MSZ 448-20:1990 Chapter 4	Permanganate oxygen demand
	MSZ EN ISO 11969:1998	Arsenic
	MSZ 448-18:2009 clause 8.1	Orto-phosphate
	EI-1:1997-Not accredited by NAT	Humic acid
	MSZ 448-11:1986 clause 5.1	P. Alkalinity, m-alkalinity
	MSZ 448-21:1986 Chapter 3	Total hardness
	MSZ 448-21:1986 Chapter 4	Carbonate hardness
	MSZ 448-21:1986 Chapter 5	Non-carbonate chem.
	MSZ 448-23:1983 Clause 2.6	Free carbon dioxide
	MSZ ISO 5813:1992	Dissolved oxygen
	MSZ 448-23:1983 Chapter 3	Bound carbon dioxide
	MSZ 448-26:1991 5.1.,5.2. sa kasz	Silica dioxide
	MSZ 448-14:1991 Chapter 3	Sulphide
	MSZ EN ISO 10304-1:2009	Sulphate, fluoride, bromide
	MSZ EN ISO 10304-3:1999	Iodide
	MSZ 11399:1995 7.2.1.	Total minerals
	MSZ 1484-1:2009 Chapter 4	Phenol index
	MSZ 260-30:1992 Chapter 4, clause 4.6	Total cyanide
	MSZ 448-49:1981	Anion active detergent
	MSZ 12750-23:1976 (Reference standard)Chapter 4	Extractable components (oil)
	MSZ 1484-3:2006 Chapter 9	Mercury
	MSZ 1484-3:2006 Chapter 7	Selenium
	MSZ EN ISO 15586:2004	Antimony
	MSZ EN ISO 7887:1998 Chapter 2	Colour
	MSZ EN 1622:2007	Odour
	MSZ EN ISO 11885:2009	Boron, Copper, Zinc, Cadmium, Lead, Nickel, Chromium (all), Barium, Lithium

Note: This test report is only valid with the appendices and no copies of extracts may be made without the approval of the testing laboratory!
Please submit any comments (objections) to this report within one month. The test report comprises 3 numbered page.

Date of issue: Szolnok, 09.11.2012

TECHNO-SZOLNOK
LABORATÓRIUMI ÉS MÉRŐKÖZVETŐI KFT
5000 Szolnok, Vízöntő u. 3.

SZELL Jenő
Executive Director

TECHNO-VÍZ KFT.
5000 SZOLNOK, VÍZMŰ U. 1.
Phone: 56/525-065; Fax: 56/525-161

On-site report no.:	4103112-VKUT
Chemical test no.:	11635112-KTA
Sample laboratory no.:	11635

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MINERAL WATER CHEMISTRY TEST

Cations				Anions			
Cations	Conc. mgn	mg Sing.w.	Than%	Anions	Conc. mgn	mg Sing.w.	Than%
Sodium	IS	0.65	6.22	Nitrite	<0.02	0.00	0.00
Potassium	4.2	0.10	1.02	Nitrate	<1.0	0.00	0.00
Ammonium	0.11	0.00	0.05	Chloride	8	0.22	2.32
Calcium	112.0	5.58	53.29	Sulphate	205	4.26	44.02
Magnesium	50.2	4.12	39.36	Carbonate	<3	0.00	0.00
• Iron	85	0.00	0.02	Bicarbonate	317	5.20	53.64
• Manganese	<10	0.00	0.00	Hydroxyl	<2	0.00	0.00
Total	181.59	10.48	100%	Total	530.30	9.69	100%
Cations - anions total: 711.89 mg/L							
• Iron and • manganese conc.= J.tg/1							
Parameter	Measurement unit	M-value	Parameter	Measurement unit	Measurement value		
Temperature	OC	20.0	No carbonate chem.	CaOmg/1	122		
pH/U		7.53	Free carbon dioxide	mg/1	31.4		
Specific	j.JS/cm	820	Dissolved oxygen	mg/1	<0.3		
Conductance/U	mg/1	608	Bonded carbon dioxide	mg/1	114.4		
Evaporation mar./180 C°	mg/1	608	Silicon dioxide	mg/1	25.9		
Evaporation mar./260 C°	mg/1	0.4	Sutfid	mg/1	<0.05		
Permanganate	j.JQ/1	1	Fluoride	mg/1	1.06		
Oxygen demand	mg/1	<0.05	Bromide	mg/1	0.07		
Arsenic	mg/1	0.5	Iodide	mg/1	<0.1		
Orto-phosphate	mmol/1		Boron	mg/1	0.04		
Humic acid	mmol/1	5.20	Minerals total	mg/1	766		

p-alkalinity	CaOmg/l	268	Phenol index	j.Jg/1	7
m-alkalinity	CaOmg/l	145	Cyanide total	j.Jg/1	<5

Parameter	Measurement	M-value	Parameter	Measurement unit	Measurement value
Anionic detergent	IJQ/1	7	Chromium (all)	IJQ/1	1.0
Extractables (oil)	IJQ/1	<10	Mercury	IJQ/1	<0.3
Copper	IJQ/1	<10	Selenium	IJQ/1	<2
Zinc	IJQ/1	8	Antimony	IJQ/1	<1
Cadmium	IJQ/1	<02	Barium	IJQ/1	24
Lead	IJQ/1	1	Lithium	IJQ/1	26
Nickel	IJQ/1	<1			

Colour:
colourless

Odour: mild thermal

TECHNO-SZÉK
LABORATÓRIUMI ÉS MÉRŐSZERZŐKÉSZÍTŐ
5000 Szónok, Veszprém U. 1

HYDROSYS LABOR Ltd.

The testing laboratory complies with the criteria of MSZ EN ISO/IEC 17025:2005 standard, and it is accredited by Hungarian Accreditation Board, registration No.: NAT-1-1714/2012

Arrival of sample: 02.05.2016.

ISOTOPE ANALYTICAL REPORT

Lab. ID	Sample name	date	$\delta^{13}\text{C}_{\text{PDB}}$ (‰)	^{14}C	
				pmC \pm s	age in year*
790/RC109/6	Zsámbék, natural mineral water	02.05.2016	-7.79	4.67 \pm 0.46	17 400 \pm 800

*Radiocarbon age is calculated with $\delta^{13}\text{C}$ correction.

Analytical methods

Radiocarbon (^{14}C)

The laboratory method are based on ASTM D6866-06 standard.

The CO_2 gas is freed by acid from the BaCO_3 , then it is converted to lithium carbide by absorption onto molten lithium (on 500-600°C). On cooling, the addition of water causes the production of acetylene. The acetylene is then cyclotrimerised to benzene using a vanadium based catalyst. The radiocarbon activity of benzene are counted by super low level liquid scintillation analyser (PerkinElmer Tri-Carb 3170TR/SL).

Stable isotope ($\delta^{13}\text{C}$)

The $\delta^{13}\text{C}$ are analyzed by Thermo Finnigan DELTA^{plus}XP (CF-IRMS). Accuracy is ± 0.1 ‰.

The radiocarbon sample was analyzed by HYDROSYS LABOR Ltd., the stable isotope determinations was carried out in laboratory of MTA ATOMKI.

Budapest, 30.05.2016.

14  Laboratóriumi Szolgáltató Kft.
2014 Csobánka, Borony u. 28.
Adószám: 22927123-2-13
Bankszám: 11711096-20000978



Miklós Süveges
Head of Laboratory

Nr. **04/0136/18**

Seen by the

CHAMBER OF COMMERCE AND
INDUSTRY BUDAPEST

We hereby certify that we have
registered the document presented to us.

Budapest, **08.02.2018**



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[Signature]
dr. Rónaszéki Áron
Desk officer for legal affairs

Item No.	Quantity	Unit	Description	Value
1	1	kg
2	1	kg

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