



INSTITUTE OF GEOLOGY & MINERAL EXPLORATION

LEGAL ENTITY OF PRIVATE LAW

SUPERVISED BY THE MINISTRY OF DEVELOPMENT (LAW No. 272/76)

1, Sp. LOUIS St., ENTRANCE C, OLYMPIC VILLAGE GR 13677 ACHARNAE, GREECE ☎ +302102413000, FAX +302102413015

DIVISION OF ANALYTICAL LABORATORIES

QUALITY CONTROL LABORATORY FOR DRINKING WATER

1, Sp. LOUIS St., ENTRANCE C, OLYMPIC VILLAGE GR 13677 ACHARNAE ☎ +302102413137, FAX +302102413446

Information: Ms. H. Gintoni

Athens 24/4/2009

Reg. No (IGME) 1366/23-3-2009

Reg. No (DANL) 139/24-3-2009

Sample No (DANL) 307

TO : PERFECTURE OF PIERIA

40, 28th October Street GR 60100 Katerini

Attn.: Supervisors' Office

Tel. +302351351106

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Sample Description¹

: Water sample from the well of the bottling company "S. MENTEKIDIS SA" in Karitsa, Municipality of Dion Pierias in PET bottles of 1,5 l.

Condition of the sample upon arrival normal.

Sampling

: Perfecture of Pieria

Date of sample receipt

: 20/3/2009

Date of analysis : 26/3-24/4/2009

TEST REPORT (SAMPLE CODE: 275/2009)

Parameter	Unit	Result	Parametric values [*]	Standard Method
pH (22 °C)	pH units	7,2	≥ 6,5 and ≤ 9,5	ELOT 658:1983
Conductivity (25 °C)	µS/cm	650	2500	ELOT EN 27888:1993
Calcium, Ca ⁺²	mg/l	78,6		ELOT 169:1978
Magnesium, Mg ⁺²	mg/l	30,2		ELOT 169:1978 & ELOT 170:1980
Sodium, Na ⁺	mg/l	6,5	200	ISO 9964-1:1993
Potassium, K ⁺	mg/l	0,9	12	ISO 9964-2:1993
Carbonates, CO ₃ ⁻²	mg/l	0,0		ELOT EN ISO 9963-1:1996
Bicarbonates, HCO ₃ ⁻	mg/l	378		ELOT EN ISO 9963-1:1996
Chlorides, Cl ⁻	mg/l	7,1	250	ELOT EN ISO 10304-1:1995
Sulfates, SO ₄ ⁻²	mg/l	9,6	250	ELOT EN ISO 10304-1:1995
Nitrates, NO ₃ ⁻	mg/l	<5	50 (50)	ELOT EN ISO 10304-1:1995
Nitrites, NO ₂ ⁻	mg/l	<0,05	0,5 (0,1)	ELOT EN ISO 10304-1:1995
Ammonium, NH ₄ ⁺	mg/l	<0,26	0,50	ISO 6778:1984
Hardness Total	mg/l CaCO ₃	320		ELOT 170:1980
Hardness Carbonate	mg/l CaCO ₃	310		ELOT EN ISO 9963-1:1996
Hardness Non-carbonate	mg/l CaCO ₃	10		ELOT 170:1980 & ELOT EN ISO 9963-1:1996

*according to the 98/83/EC Directive on the quality of water intended for human consumption (values in brackets are the parametric values according to the 2003/40/EC Directive establishing the list and concentration limits for the constituents of natural mineral waters)

¹ Description and identification of the sample as stated by the customer in the application form.

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Parameter	Unit	Result	Parametric value*	Standard Method
Silica, SiO ₂	mg/l	9,2		
Iron, Fe	µg/l	<100	200	ASTM D1068:2003
Manganese, Mn	µg/l	<5	50 (500)	ASTM D5673:2003
Copper, Cu	µg/l	<5	2000 (1000)	ASTM D5673:2003
Zinc, Zn	µg/l	<5		ASTM D5673:2003
Lead, Pb	µg/l	<5	10 (10)	ASTM D5673:2003
Cadmium, Cd	µg/l	<1	5,0 (3,0)	ASTM D5673:2003
Nickel, Ni	µg/l	<5	20 (20)	ASTM D5673:2003
Chromium, Cr	µg/l	<5	50 (50)	ASTM D5673:2003
Barium, Ba	µg/l	33	(1000)	ASTM D5673:2003
Boron, B	µg/l	85	1000	Internal method based on ASTM D5673:2003
Aluminum, Al	µg/l	<5	200	ASTM D5673:2003
Vanadium, V	µg/l	<5		ASTM D5673:2003
Beryllium, Be	µg/l	<5		ASTM D5673:2003
Silver, Ag	µg/l	<5	10	ASTM D5673:2003
Cobalt, Co	µg/l	<5		ASTM D5673:2003
Arsenic, As	µg/l	<5	10 (10)	ASTM D5673:2003
Antimony, Sb	µg/l	<5	5,0 (5,0)	ASTM D5673:2003
Selenium, Se	µg/l	<5	10 (10)	ASTM D5673:2003
Mercury, Hg	µg/l	<0,5	1,0 (1,0)	Internal method based on ASTM D5673:2003
Oxidizability (KMnO ₄)	mg/l O ₂	0,9	5,0	ELOT 827:1986
Dry Residue (180 °C)	mg/l	390	1500	STANDARD METHODS 148A, 13th ed.
Dry Residue (260 °C)	mg/l	380		STANDARD METHODS 148A, 13th ed.
Phosphorus, P	µg/l P ₂ O ₅	<100	5000	Internal method based on ASTM D5673:2003
Fluorides, F ⁻	µg/l	360	1500 (5000)	ELOT EN ISO 10304-1:1995
Cyanides, CN ⁻	µg/l	<50	50 (70)	
Bromides, Br ⁻	mg/l	<0,5		ASTM-D1246:1995 (1999)
Bromates, BrO ₃ ⁻	µg/l	-	10 (3)	Internal method based on EPA 300.1:1999
Total Organic Carbon (TOC)	µg/l C	713		ISO 8245:1999

*according to the 98/83/EC Directive on the quality of water intended for human consumption (values in brackets are the parametric values according to the 2003/40/EC Directive establishing the list and concentration limits for the constituents of natural mineral waters)

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Parameter	Unit	Result	Parametric value*	Standard Method
Total Viable Count, 22 °C	CFU/ml	-	100	ISO 6222:1999
Total Viable Count, 37 °C	CFU/ml	-	20	ISO 6222:1999
Total coliforms	CFU/250 ml	-	0	ISO 9308-1:2000
<i>Escherichia coli</i>	CFU/250 ml	-	0	ISO 9308-1:2000
<i>Pseudomonas aeruginosa</i>	CFU/250 ml	-	0	ELOT EN 12780:2002
Enterococci	CFU/250 ml	-	0	ISO 7899-2:2000

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Technical Supervisor

Helen Gintoni
Chemical Engineer

The measuring temperature of conductivity was 21,7°C. The measurement was made with a METROHM 712 conductivity meter which has an automatic temperature compensation device.

The chromatographic conditions for the analysis of the anions Cl, NO₃, SO₄, F and NO₂ are:

Instrument DIONEX DX-100, column IonPack AS9-HC 4x250 mm, eluent flow rate 0,85 ml/min, conductivity detector with sensitivity 100/10.

The evaluation of the results is based on peak area.

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