



CERTIFICATE OF ANALYSIS

Work Order	: PR1857809	Issue Date	: 21-Jun-2018
Customer	: VISA - Consultores de Geologia Aplicada e Engenharia	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: M. Bastos	Contact	: Client Service
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Project	: Amostras de Águas	Page	: 1 of 6
Order number	: 2923	Date Samples Received	: 15-Jun-2018
C-O-C number	: ----	Quote number	: PR2014VISAC-PT0241 (PT-300-14-1543)
Site	: ----	Date of test	: 15-Jun-2018 - 21-Jun-2018
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples.

Samples were received on 15.6.2018 in Prague

Sample(s) PR1857809/001, method W-VOCGMS03 - air space in received sampling bottle - results may be affected.

Should a sample contain sediment it is decanted prior to volatile compounds determination.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories

Zdeněk Jiráček

Position

Environmental Business Unit
Manager





Analytical Results

Sub-Matrix: GROUNDWATER

Client sample ID

2923 - Amostra de água

Laboratory sample ID
 Client sampling date / time

PR1857809-001

14-Jun-2018 00:00

Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Electrical Conductivity @ 25°C	W-CON-PCT	0.10	mS/m	39.5	± 10.0%	----	----	----	----
pH Value	W-PH-PCT	1.00	-	8.06	± 1.0%	----	----	----	----
Nonmetallic Inorganic Parameters									
Carbonates (CO3 2-)	W-CO2F-CC2	0.00	mg/L	0.00	----	----	----	----	----
Chloride	W-CL-IC	1.00	mg/L	9.90	± 15.0%	----	----	----	----
Nitrates	W-NO3-SPC	0.27	mg/L	8.32	----	----	----	----	----
Sulphate as SO4 2-	W-SO4-IC	5.00	mg/L	<5.00	----	----	----	----	----
Total Cyanide	W-CNT-PHO	0.005	mg/L	<0.005	----	----	----	----	----
Base neutralizing capacity (acidity) pH 8.3	W-ACID-PCT	0.150	mmol/L	<0.150	----	----	----	----	----
Hydrogen carbonates (HCO3-)	W-CO2F-CC2	0.00	mg/L	214	± 12.0%	----	----	----	----
Nitrate as N	W-NO3-SPC	0.060	mg/L	1.88	----	----	----	----	----
Total Carbon Dioxide as CO2	W-CO2F-CC2	0.00	mg/L	157	± 12.0%	----	----	----	----
Base neutralizing capacity (acidity) pH 4.5	W-ACID-PCT	0.150	mmol/L	<0.150	----	----	----	----	----
Free Carbon Dioxide as CO2	W-CO2F-CC2	0.00	mg/L	3.08	± 12.0%	----	----	----	----
Aggressive CO2	W-CO2F-CC2	0.00	mg/L	0.00	----	----	----	----	----
Acid neutralizing capacity (alkalinity) pH 4.5	W-ALK-PCT	0.150	mmol/L	3.50	± 12.0%	----	----	----	----
Acid neutralizing capacity (alkalinity) pH 8.3	W-ALK-PCT	0.150	mmol/L	<0.150	----	----	----	----	----
Dissolved Metals / Major Cations									
Aluminium	W-METAXFL1	0.010	mg/L	0.013	± 10.0%	----	----	----	----
Antimony	W-METAXFL1	0.010	mg/L	<0.010	----	----	----	----	----
Arsenic	W-METMSFL1	1.0	µg/L	<1.0	----	----	----	----	----
Barium	W-METAXFL1	0.00050	mg/L	0.00626	± 10.0%	----	----	----	----
Beryllium	W-METAXFL1	0.00020	mg/L	<0.00020	----	----	----	----	----
Boron	W-METAXFL1	0.010	mg/L	<0.010	----	----	----	----	----
Cadmium	W-METMSFL1	0.50	µg/L	<0.50	----	----	----	----	----
Calcium	W-METAXFL1	0.0050	mg/L	73.1	± 10.0%	----	----	----	----
Chromium	W-METAXFL1	0.0010	mg/L	0.0012	± 10.0%	----	----	----	----
Cobalt	W-METMSFL2	0.50	µg/L	<0.50	----	----	----	----	----
Copper	W-METMSFL2	1.0	µg/L	<1.0	----	----	----	----	----
Iron	W-METAXFL1	0.0020	mg/L	<0.0020	----	----	----	----	----
Lead	W-METMSFL1	1.0	µg/L	<1.0	----	----	----	----	----
Lithium	W-METAXFL1	0.0010	mg/L	<0.0010	----	----	----	----	----
Magnesium	W-METAXFL1	0.0030	mg/L	4.33	± 10.0%	----	----	----	----
Manganese	W-METAXFL1	0.00050	mg/L	<0.00050	----	----	----	----	----
Mercury	W-HG-AFSFL	0.010	µg/L	<0.010	----	----	----	----	----
Molybdenum	W-METMSFL1	1.0	µg/L	<1.0	----	----	----	----	----
Nickel	W-METAXFL1	0.0020	mg/L	<0.0020	----	----	----	----	----
Phosphorus	W-METAXFL1	0.050	mg/L	<0.050	----	----	----	----	----
Potassium	W-METAXFL1	0.015	mg/L	0.518	± 10.0%	----	----	----	----
Selenium	W-METAXFL1	0.010	mg/L	<0.010	----	----	----	----	----
Silver	W-METAXFL1	0.0010	mg/L	<0.0010	----	----	----	----	----
Sodium	W-METAXFL1	0.030	mg/L	6.32	± 10.0%	----	----	----	----
Thallium	W-METAXFL1	0.010	mg/L	<0.010	----	----	----	----	----
Tin	W-METMSFL2	5.0	µg/L	<5.0	----	----	----	----	----
Vanadium	W-METAXFL1	0.0010	mg/L	<0.0010	----	----	----	----	----
Zinc	W-METMSFL2	5.0	µg/L	6.4	± 10.0%	----	----	----	----
BTEX									
Benzene	W-VOCGMS03	0.20	µg/L	<0.20	----	----	----	----	----
Toluene	W-VOCGMS03	0.50	µg/L	<0.50	----	----	----	----	----
Ethylbenzene	W-VOCGMS03	0.10	µg/L	<0.10	----	----	----	----	----
meta- & para-Xylene	W-VOCGMS03	0.20	µg/L	<0.20	----	----	----	----	----



Sub-Matrix: GROUNDWATER				Client sample ID		2923 - Amostra de água		----	
				Laboratory sample ID		PR1857809-001		----	
				Client sampling date / time		14-Jun-2018 00:00		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
BTEX - Continued									
ortho-Xylene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
Sum of xylenes	W-VOCGMS03	0.30	µg/L	<0.30	---	----	----	----	----
Sum of BTEX	W-VOCGMS03	1.10	µg/L	<1.10	---	----	----	----	----
Halogenated Volatile Organic Compounds									
Vinyl chloride	W-VOCGMS03	1.00	µg/L	<1.00	---	----	----	----	----
trans-1,2-Dichloroethene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
Dichloromethane	W-VOCGMS03	6.0	µg/L	<6.0	---	----	----	----	----
cis-1,2-Dichloroethene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,1-Dichloroethane	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
Chloroform	W-VOCGMS03	0.30	µg/L	<0.30	---	----	----	----	----
1,2-Dichloroethane	W-VOCGMS03	1.0	µg/L	<1.0	---	----	----	----	----
1,1,1-Trichloroethane	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
Tetrachloromethane	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
Trichloroethene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,2-Dichloropropane	W-VOCGMS03	1.0	µg/L	<1.0	---	----	----	----	----
1,1,2-Trichloroethane	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Tetrachloroethene	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Chlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,2-Dichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,4-Dichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,3-Dichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,2,4-Trichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,2,3-Trichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,3,5-Trichlorobenzene	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Sum of 3 Dichlorobenzenes	W-VOCGMS03	0.30	µg/L	<0.30	---	----	----	----	----
Sum of 3 Trichlorobenzenes	W-VOCGMS03	0.40	µg/L	<0.40	---	----	----	----	----
Non-Halogenated Volatile Organic Compounds									
Styrene	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Methyl tert-Butyl Ether (MTBE)	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Polycyclic Aromatics Hydrocarbons (PAHs)									
Naphthalene	W-PAHGMS01	0.100	µg/L	<0.100	---	----	----	----	----
Acenaphthylene	W-PAHGMS01	0.010	µg/L	<0.010	---	----	----	----	----
Acenaphthene	W-PAHGMS01	0.010	µg/L	<0.010	---	----	----	----	----
Fluorene	W-PAHGMS01	0.020	µg/L	<0.020	---	----	----	----	----
Phenanthrene	W-PAHGMS01	0.030	µg/L	<0.030	---	----	----	----	----
Anthracene	W-PAHGMS01	0.020	µg/L	<0.020	---	----	----	----	----
Fluoranthene	W-PAHGMS01	0.030	µg/L	<0.030	---	----	----	----	----
Pyrene	W-PAHGMS01	0.060	µg/L	<0.060	---	----	----	----	----
Benz(a)anthracene	W-PAHGMS01	0.010	µg/L	<0.010	---	----	----	----	----
Chrysene	W-PAHGMS01	0.010	µg/L	<0.010	---	----	----	----	----
Benzo(b)fluoranthene	W-PAHGMS01	0.010	µg/L	<0.010	---	----	----	----	----
Benzo(k)fluoranthene	W-PAHGMS01	0.010	µg/L	<0.010	---	----	----	----	----
Benzo(a)pyrene	W-PAHGMS01	0.020	µg/L	<0.020	---	----	----	----	----
Indeno(1,2,3.cd)pyrene	W-PAHGMS01	0.010	µg/L	<0.010	---	----	----	----	----
Benzo(g,h,i)perylene	W-PAHGMS01	0.010	µg/L	<0.010	---	----	----	----	----
Dibenz(a,h)anthracene	W-PAHGMS01	0.010	µg/L	<0.010	---	----	----	----	----
Sum of 16 PAH	W-PAHGMS01	0.370	µg/L	<0.370	---	----	----	----	----
PCBs									
PCB 28	W-PCBECD01	0.00110	µg/L	<0.00110	---	----	----	----	----
PCB 52	W-PCBECD01	0.00110	µg/L	<0.00110	---	----	----	----	----
PCB 101	W-PCBECD01	0.000750	µg/L	<0.000750	---	----	----	----	----
PCB 118	W-PCBECD01	0.00110	µg/L	<0.00110	---	----	----	----	----
PCB 138	W-PCBECD01	0.00120	µg/L	<0.00120	---	----	----	----	----
PCB 153	W-PCBECD01	0.00110	µg/L	<0.00110	---	----	----	----	----
PCB 180	W-PCBECD01	0.000950	µg/L	<0.000950	---	----	----	----	----
Sum of 7 PCBs	W-PCBECD01	0.00730	µg/L	<0.00730	---	----	----	----	----
Organochlorine Pesticides									



Sub-Matrix: GROUNDWATER				Client sample ID		2923 - Amostra de água		----	
				Laboratory sample ID		PR1857809-001		----	
				Client sampling date / time		14-Jun-2018 00:00		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Organochlorine Pesticides - Continued									
Hexachloroethane	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
1.2.3.5- & 1.2.4.5-Tetrachlorobenzene	W-OCPECD01	0.020	µg/L	<0.020	---	----	----	----	----
1.2.3.4-Tetrachlorobenzene	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Pentachlorobenzene	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Hexachlorocyclohexane Alpha	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Hexachlorobenzene (HCB)	W-OCPECD01	0.0050	µg/L	<0.0050	---	----	----	----	----
Hexachlorocyclohexane Beta	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Hexachlorocyclohexane Gamma	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Hexachlorocyclohexane Delta	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Heptachlor	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Aldrin	W-OCPECD01	0.0050	µg/L	<0.0050	---	----	----	----	----
Telodrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Isodrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Heptachloroepoxide-cis	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Heptachloroepoxide-trans	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
2.4-DDE	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
alpha-Endosulfan	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
4.4'-DDE	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Dieldrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
2.4-DDD	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Endrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
4.4'-DDD	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
2.4-DDT	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
4.4'-DDT	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Sum of 3 tetrachlorobenzenes	W-OCPECD01	0.030	µg/L	<0.030	---	----	----	----	----
Chlorophenols									
2-Chlorophenol	W-CLPGMS01	0.100	µg/L	<0.100	---	----	----	----	----
3-Chlorophenol	W-CLPGMS01	0.100	µg/L	<0.100	---	----	----	----	----
4-Chlorophenol	W-CLPGMS01	0.100	µg/L	<0.100	---	----	----	----	----
2.6-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.4@2.5-Dichlorophenol	W-CLPGMS01	0.20	µg/L	<0.20	---	----	----	----	----
3.5-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.3-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
3.4-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.4.6-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.3.6-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.3.5-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.4.5-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.3.4-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
3.4.5-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.3.5.6-Tetrachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.3.4.5-Tetrachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2.3.4.6-Tetrachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
Pentachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
Petroleum Hydrocarbons									
Aliphates C5-C8	W-VOCGMS03	10	µg/L	<10	---	----	----	----	----
Aliphates C8-C10	W-VOCGMS03	10	µg/L	<10	---	----	----	----	----
C10 - C12 Fraction	W-TPHFID01	5.0	µg/L	<5.0	---	----	----	----	----
C12 - C16 Fraction	W-TPHFID01	5.0	µg/L	<5.0	---	----	----	----	----
C16 - C35 Fraction	W-TPHFID01	30.0	µg/L	<30.0	---	----	----	----	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty



The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
<i>Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00</i>	
W-ACID-PCT	CZ_SOP_D06_02_073 (CSN 75 73 72) Determination of base neutralizing capacity (acidity) by potentiometric titration.
W-ALK-PCT	CZ_SOP_D06_02_072 (CSN EN ISO 9963-1, CSN EN ISO 9963-2, CSN 75 7373, SM2320) Determination of acid neutralizing capacity (alkalinity) by potentiometric titration and determination of the carbonate hardness and determination of CO ₂ forms by calculation from measured values including the calculation of total mineralization.
W-CL-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1, CSN EN 16192) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and determination of nitrite nitrogen and nitrate nitrogen and sulfate sulfur by calculation from measured values including the calculation of total mineralization.
W-CLPGMS01	CZ_SOP_D06_03_158 except chap. 9.3 a 9.4 (US EPA 8041, US EPA 3500, CSN EN 12673) Determination of phenols, chlorinated phenols and cresols by gas chromatography method with detection MS and ECD and calculation of phenols, chlorinated phenols and cresols sums from measured values
W-CNT-PHO	CZ_SOP_D06_02_089.A (CSN 75 7415, CSN EN ISO 14403-2)/ CZ_SOP_D06_07_010 (CSN 75 7415) Determination of total cyanide by spectrophotometry and determination of complex-forming cyanides by calculation from measure values.
W-CO2F-CC2	CZ_SOP_D06_02_072 (CSN EN ISO 9963-1, CSN 75 7373) Determination of acid neutralizing capacity (alkalinity) by potentiometric titration and determination of the carbonate hardness and determination of CO ₂ forms by calculation from measured values including the calculation of total mineralization.
W-CON-PCT	CZ_SOP_D06_02_075 Determination of electrical conductivity (based on CSN EN 27 888, SM 2520 B, CSN EN 16192).
W-HG-AFSFL	CZ_SOP_D06_02_096 (US EPA 245.7, CSN EN ISO 178 52, CSN EN 16192, samples prepared as per CZ_SOP_D06_02_J02 chap. 10.1 and 10.2.). Determination of Mercury by Fluorescence Spectrometry. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-METAXFL1	CZ_SOP_D06_02_001 (US EPA 200.7, ISO 11885, CSN EN 16192, US EPA 6010, SM 3120, CSN 75 7358 samples prepared as per CZ_SOP_D06_02_J02 chap. 10.1 and 10.2) Determination of elements by atomic emission spectrometry with inductively coupled plasma and stoichiometric calculations of compounds concentration from measured values including the calculation of total mineralization and calculating the sum of Ca+Mg. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-METMSFL1	CZ_SOP_D06_02_002 (US EPA 200.8, CSN EN ISO 17294-2, US EPA 6020A, CSN EN 16192, CSN 75 7358 samples prepared as per CZ_SOP_D06_02_J02 chap. 10.1 and 10.2) Determination of elements by mass spectrometry with inductively coupled plasma and stoichiometric calculations of compounds concentration from measured values including the calculation of total mineralization and calculating the sum of Ca+Mg. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-METMSFL2	CZ_SOP_D06_02_002 (US EPA 200.8, CSN EN ISO 17294-2, US EPA 6020A, CSN EN 16192, CSN 75 7358 samples prepared as per CZ_SOP_D06_02_J02 chap. 10.1 and 10.2) Determination of elements by mass spectrometry with inductively coupled plasma and stoichiometric calculations of compounds concentration from measured values including the calculation of total mineralization and calculating the sum of Ca+Mg. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-NO3-SPC	CZ_SOP_D06_02_019 (CSN EN ISO 11732, CSN EN ISO 13395, CSN EN 16192, SM 4500-NO ₂ (-), SM 4500-NO ₃ (-)) Determination of sum of ammonium and ammonium ions, nitrite and the sum of nitrite and nitrate ions by discrete spectrophotometry and determination of nitrite, nitrate, ammonia, inorganic, organic, total nitrogen, free ammonia and dissociated ammonium ions by calculation from measured values including the calculation of total mineralization.
W-OCPECD01	CZ_SOP_D06_03_169 (CSN EN ISO 6468, US EPA 8081, DIN 38407-2, samples prepared as per CZ_SOP_D06_03_P01 chap. 9.1, CZ_SOP_D06_03_P02 chap. 9.1) Determination of organochlorine pesticides and other halogen compounds by gas chromatography method with ECD detection and calculation of organochlorine pesticides and other halogen compounds sums from measured values. The method has been modified within a flexible scope of accreditation, see Certificate of Accreditation No. 610/2017 dated 16th October 2017. It refers to parameter dicofol.
W-PAHGMS01	CZ_SOP_D06_03_161 (US EPA 8270, CSN EN ISO 6468, US EPA 8000D, samples preparation according to CZ_SOP_D06_03_P01 chap. 9.1, 9.4.1) Determination of semi volatile organic compounds by gas chromatography method with MS or MS/MS detection and calculation of semi volatile organic compounds sums from measured values
W-PCBECD01	CZ_SOP_D06_03_166 (DIN 38407, part 2, US EPA 8082, samples prepared as per CZ_SOP_D06_03_P01 chap. 9.1, CZ_SOP_D06_03_P02 chap. 9.1) Determination of polychlorinated biphenyls - congener analyses by gas chromatography method with ECD detection and calculation of polychlorinated biphenyls sums from measured values of polychlorinated biphenyls sums from measured values
W-PH-PCT	CZ_SOP_D06_02_105 Determination of pH by potentiometry (based on CSN ISO 10523, US EPA 150.1, CSN EN 16192, SM 4500-H(+)-B).
W-SO4-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1, CSN EN 16192) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and determination of nitrite nitrogen and nitrate nitrogen and sulfate sulfur by calculation from measured values including the calculation of total mineralization.
W-TPHFID01	CZ_SOP_D06_03_151 (CSN EN ISO 9377-2, Z1, US EPA 8015, US EPA 3510, TNRCC Method 1006) Determination of extractable compounds in the range of hydrocarbons C ₁₀ - C ₄₀ , their fractions calculated from the measured values by gas chromatography method with FID detection



<i>Analytical Methods</i>	<i>Method Descriptions</i>
W-VOCGMS03	CZ_SOP_D06_03_155 except chap. 10.5, 10.6 (US EPA 624, US EPA 8260, US EPA 8015, EN ISO 10301, MADEP 2004, rev. 1.1, ISO 11423, ISO 15680) Determination of volatile organic compounds by gas chromatography method with FID and MS detection and calculation of volatile organic compounds sums from measured values

A `` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



CERTIFICATE OF ANALYSIS

Work Order	: PR2046776	Issue Date	: 29-May-2020
Customer	: VISA - Consultores de Geologia Aplicada e Engenharia	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Mr. Joao Meira	Contact	: Client Service
Address	: Rua A Gazeta de Oeiras, n.º 18-A 2780-171 Oeiras	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: jmeira@visaconsultores.com	E-mail	: customer.support@alsglobal.com
Telephone	: +351 2144 61420	Telephone	: +420 226 226 228
Project	: SIC	Page	: 1 of 5
Order number	: ----	Date Samples Received	: 21-May-2020
Site	: ----	Quote number	: PR2015VISAC-PT0242 (PT-300-15-0407)
Sampled by	: client	Date of test	: 21-May-2020 - 29-May-2020
		QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Should a sample contain sediment it is decanted prior to volatile compounds determination.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Zdeněk Jiráček

Position

Environmental Business Unit
Manager





Analytical Results

Sub-Matrix: GROUNDWATER

Client sample ID
Laboratory sample ID
Client sampling date / time

Parameter	Method	LOR	Unit	SIC		---		---	
				Result	MU	Result	MU	Result	MU
				PR2046776-001					
				19-May-2020 15:00					
Physical Parameters									
Electrical Conductivity @ 25°C	W-CON-PCT	0.10	mS/m	42.0	± 10.0%	---	---	---	---
pH Value	W-PH-PCT	1.00	-	7.62	± 1.0%	---	---	---	---
Nonmetallic Inorganic Parameters									
Carbonates (CO3 2-)	W-CO2F-CC2	0.00	mg/L	0.00	---	---	---	---	---
Chloride	W-CL-IC	1.00	mg/L	10.0	± 15.0%	---	---	---	---
Nitrates	W-NO3-SPC	0.27	mg/L	9.24	---	---	---	---	---
Sulphate as SO4 2-	W-SO4-IC	5.00	mg/L	<5.00	---	---	---	---	---
Total Cyanide	W-CNT-PHO	0.005	mg/L	<0.005	---	---	---	---	---
Base neutralizing capacity (acidity) pH 8.3	W-ACID-PCT	0.150	mmol/L	0.212	± 15.0%	---	---	---	---
Hydrogen carbonates (HCO3-)	W-CO2F-CC2	0.00	mg/L	234	± 12.0%	---	---	---	---
Nitrate as N	W-NO3-SPC	0.060	mg/L	2.09	---	---	---	---	---
Total Carbon Dioxide as CO2	W-CO2F-CC2	0.00	mg/L	178	± 12.0%	---	---	---	---
Base neutralizing capacity (acidity) pH 4.5	W-ACID-PCT	0.150	mmol/L	<0.150	---	---	---	---	---
Free Carbon Dioxide as CO2	W-CO2F-CC2	0.00	mg/L	9.34	± 12.0%	---	---	---	---
Aggressive CO2	W-CO2F-CC2	0.00	mg/L	0.00	---	---	---	---	---
Acid neutralizing capacity (alkalinity) pH 4.5	W-ALK-PCT	0.150	mmol/L	3.83	± 12.0%	---	---	---	---
Acid neutralizing capacity (alkalinity) pH 8.3	W-ALK-PCT	0.150	mmol/L	<0.150	---	---	---	---	---
Dissolved Metals / Major Cations									
Aluminium	W-METAXFL1	0.010	mg/L	<0.010	---	---	---	---	---
Arsenic	W-METMSFL1	1.0	µg/L	<1.0	---	---	---	---	---
Barium	W-METMSFL2	0.5	µg/L	5.0	± 10.0%	---	---	---	---
Cadmium	W-METMSFL1	0.50	µg/L	<0.50	---	---	---	---	---
Calcium	W-METAXFL1	0.0050	mg/L	80.1	± 10.0%	---	---	---	---
Chromium	W-METMSFL1	3.0	µg/L	<3.0	---	---	---	---	---
Cobalt	W-METMSFL2	0.50	µg/L	<0.50	---	---	---	---	---
Copper	W-METMSFL2	1.0	µg/L	<1.0	---	---	---	---	---
Iron	W-METAXFL1	0.0020	mg/L	<0.0020	---	---	---	---	---
Lead	W-METMSFL1	1.0	µg/L	<1.0	---	---	---	---	---
Magnesium	W-METAXFL1	0.0030	mg/L	3.97	± 10.0%	---	---	---	---
Manganese	W-METAXFL1	0.00050	mg/L	<0.00050	---	---	---	---	---
Mercury	W-HG-AFSFL	0.010	µg/L	<0.010	---	---	---	---	---
Molybdenum	W-METMSFL1	1.0	µg/L	<1.0	---	---	---	---	---
Nickel	W-METMSFL1	1.0	µg/L	<1.0	---	---	---	---	---
Potassium	W-METAXFL1	0.015	mg/L	0.372	± 10.0%	---	---	---	---
Sodium	W-METAXFL1	0.030	mg/L	6.04	± 10.0%	---	---	---	---
Tin	W-METMSFL2	5.0	µg/L	<5.0	---	---	---	---	---
Vanadium	W-METMSFL2	5.0	µg/L	<5.0	---	---	---	---	---
Zinc	W-METMSFL2	5.0	µg/L	5.0	± 10.0%	---	---	---	---
BTEX									
Benzene	W-VOCGMS03	0.20	µg/L	<0.20	---	---	---	---	---
Toluene	W-VOCGMS03	0.50	µg/L	<0.50	---	---	---	---	---
Ethylbenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---
meta- & para-Xylene	W-VOCGMS03	0.20	µg/L	<0.20	---	---	---	---	---
ortho-Xylene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---
Sum of xylenes	W-VOCGMS03	0.30	µg/L	<0.30	---	---	---	---	---
Sum of BTEX	W-VOCGMS03	1.10	µg/L	<1.10	---	---	---	---	---
Halogenated Volatile Organic Compounds									
Vinyl chloride	W-VOCGMS03	1.00	µg/L	<1.00	---	---	---	---	---
trans-1,2-Dichloroethene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---
Dichloromethane	W-VOCGMS03	6.0	µg/L	<6.0	---	---	---	---	---
cis-1,2-Dichloroethene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---
1,1-Dichloroethane	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---



Sub-Matrix: GROUNDWATER				Client sample ID	SIC		---		---	
				Laboratory sample ID	PR2046776-001		---		---	
				Client sampling date / time	19-May-2020 15:00		---		---	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	
Halogenated Volatile Organic Compounds - Continued										
Chloroform	W-VOCGMS03	0.30	µg/L	<0.30	---	---	---	---	---	
1.2-Dichloroethane	W-VOCGMS03	1.0	µg/L	<1.0	---	---	---	---	---	
1.1.1-Trichloroethane	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---	
Tetrachloromethane	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---	
Trichloroethene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---	
1.2-Dichloropropane	W-VOCGMS03	1.0	µg/L	<1.0	---	---	---	---	---	
1.1.2-Trichloroethane	W-VOCGMS03	0.20	µg/L	<0.20	---	---	---	---	---	
Tetrachloroethene	W-VOCGMS03	0.20	µg/L	<0.20	---	---	---	---	---	
Chlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---	
1.2-Dichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---	
1.4-Dichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---	
1.3-Dichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---	
1.2.4-Trichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---	
1.2.3-Trichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	---	---	---	---	
1.3.5-Trichlorobenzene	W-VOCGMS03	0.20	µg/L	<0.20	---	---	---	---	---	
Sum of 3 Dichlorobenzenes	W-VOCGMS03	0.30	µg/L	<0.30	---	---	---	---	---	
Sum of 3 Trichlorobenzenes	W-VOCGMS03	0.40	µg/L	<0.40	---	---	---	---	---	
Non-Halogenated Volatile Organic Compounds										
Styrene	W-VOCGMS03	0.20	µg/L	<0.20	---	---	---	---	---	
Methyl tert-Butyl Ether (MTBE)	W-VOCGMS03	0.20	µg/L	<0.20	---	---	---	---	---	
Polycyclic Aromatics Hydrocarbons (PAHs)										
Naphthalene	W-PAHGMS05	0.100	µg/L	<0.100	---	---	---	---	---	
Acenaphthylene	W-PAHGMS05	0.010	µg/L	<0.010	---	---	---	---	---	
Acenaphthene	W-PAHGMS05	0.010	µg/L	<0.010	---	---	---	---	---	
Fluorene	W-PAHGMS05	0.020	µg/L	<0.020	---	---	---	---	---	
Phenanthrene	W-PAHGMS05	0.030	µg/L	<0.030	---	---	---	---	---	
Anthracene	W-PAHGMS05	0.020	µg/L	<0.020	---	---	---	---	---	
Fluoranthene	W-PAHGMS05	0.030	µg/L	<0.030	---	---	---	---	---	
Pyrene	W-PAHGMS05	0.060	µg/L	<0.060	---	---	---	---	---	
Benz(a)anthracene	W-PAHGMS05	0.010	µg/L	<0.010	---	---	---	---	---	
Chrysene	W-PAHGMS05	0.010	µg/L	<0.010	---	---	---	---	---	
Benzo(b)fluoranthene	W-PAHGMS05	0.010	µg/L	<0.010	---	---	---	---	---	
Benzo(k)fluoranthene	W-PAHGMS05	0.010	µg/L	<0.010	---	---	---	---	---	
Benzo(a)pyrene	W-PAHGMS05	0.020	µg/L	<0.020	---	---	---	---	---	
Indeno(1.2.3.cd)pyrene	W-PAHGMS05	0.010	µg/L	<0.010	---	---	---	---	---	
Benzo(g,h,i)perylene	W-PAHGMS05	0.010	µg/L	<0.010	---	---	---	---	---	
Dibenz(a,h)anthracene	W-PAHGMS05	0.010	µg/L	<0.010	---	---	---	---	---	
Sum of 16 PAH	W-PAHGMS05	0.37	µg/L	<0.37	---	---	---	---	---	
PCBs										
Sum of 7 PCBs	W-PCBGMS05	0.00730	µg/L	<0.00730	---	---	---	---	---	
PCB 52	W-PCBGMS05	0.00110	µg/L	<0.00110	---	---	---	---	---	
PCB 28	W-PCBGMS05	0.00110	µg/L	<0.00110	---	---	---	---	---	
PCB 180	W-PCBGMS05	0.000950	µg/L	<0.000950	---	---	---	---	---	
PCB 153	W-PCBGMS05	0.00110	µg/L	<0.00110	---	---	---	---	---	
PCB 138	W-PCBGMS05	0.00120	µg/L	<0.00120	---	---	---	---	---	
PCB 118	W-PCBGMS05	0.00110	µg/L	<0.00110	---	---	---	---	---	
PCB 101	W-PCBGMS05	0.000750	µg/L	<0.000750	---	---	---	---	---	
Organochlorine Pesticides										
Hexachloroethane	W-OCPECD01	0.010	µg/L	<0.010	---	---	---	---	---	
1.2.3.5- & 1.2.4.5-Tetrachlorobenzene	W-OCPECD01	0.020	µg/L	<0.020	---	---	---	---	---	
1.2.3.4-Tetrachlorobenzene	W-OCPECD01	0.010	µg/L	<0.010	---	---	---	---	---	
Pentachlorobenzene	W-OCPECD01	0.010	µg/L	<0.010	---	---	---	---	---	
Hexachlorocyclohexane Alpha	W-OCPECD01	0.010	µg/L	<0.010	---	---	---	---	---	
Hexachlorobenzene (HCB)	W-OCPECD01	0.0050	µg/L	<0.0050	---	---	---	---	---	
Hexachlorocyclohexane Beta	W-OCPECD01	0.010	µg/L	<0.010	---	---	---	---	---	
Hexachlorocyclohexane Gamma	W-OCPECD01	0.010	µg/L	<0.010	---	---	---	---	---	
Hexachlorocyclohexane Delta	W-OCPECD01	0.010	µg/L	<0.010	---	---	---	---	---	



Sub-Matrix: GROUNDWATER				Client sample ID	SIC	----	----		
				Laboratory sample ID	PR2046776-001	----	----		
				Client sampling date / time	19-May-2020 15:00	----	----		
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Organochlorine Pesticides - Continued									
Heptachlor	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Aldrin	W-OCPECD01	0.0050	µg/L	<0.0050	---	----	----	----	----
Telodrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Isodrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Heptachloroepoxide-cis	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Heptachloroepoxide-trans	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
2,4-DDE	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
alpha-Endosulfan	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
4,4'-DDE	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Dieldrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
2,4-DDD	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Endrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
4,4'-DDD	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
2,4-DDT	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
4,4'-DDT	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Sum of 3 tetrachlorobenzenes	W-OCPECD01	0.030	µg/L	<0.030	---	----	----	----	----
Chlorophenols									
2-Chlorophenol	W-CLPGMS01	0.100	µg/L	<0.100	---	----	----	----	----
3-Chlorophenol	W-CLPGMS01	0.100	µg/L	<0.100	---	----	----	----	----
4-Chlorophenol	W-CLPGMS01	0.100	µg/L	<0.100	---	----	----	----	----
2,6-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,4@2,5-Dichlorophenol	W-CLPGMS01	0.20	µg/L	<0.20	---	----	----	----	----
3,5-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,3-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
3,4-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,4,6-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,3,6-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,3,5-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,4,5-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,3,4-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
3,4,5-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,3,5,6-Tetrachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,3,4,5-Tetrachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
2,3,4,6-Tetrachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
Pentachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----
Petroleum Hydrocarbons									
Aliphates C5-C8	W-VOCGMS03	10	µg/L	<10	---	----	----	----	----
Aliphates C8-C10	W-VOCGMS03	10	µg/L	<10	---	----	----	----	----
C10 - C12 Fraction	W-TPHFID01	5.0	µg/L	<5.0	---	----	----	----	----
C12 - C16 Fraction	W-TPHFID01	5.0	µg/L	<5.0	---	----	----	----	----
C16 - C35 Fraction	W-TPHFID01	30.0	µg/L	<30.0	---	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
W-ACID-PCT	CZ_SOP_D06_02_073 (CSN 75 73 72) Determination of base neutralizing capacity (acidity) by potentiometric titration.
W-ALK-PCT	CZ_SOP_D06_02_072 (CSN EN ISO 9963-1, CSN EN ISO 9963-2, CSN 75 7373, SM2320) Determination of acid neutralizing capacity (alkalinity) by potentiometric titration and determination of the carbonate hardness and determination of CO2 from by calculation from measured values including the calculation of total mineralization.



Analytical Methods	Method Descriptions
W-CL-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1, CSN EN 16192) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and determination of nitrite nitrogen and nitrate nitrogen and sulfate sulfur by calculation from measured values including the calculation of total mineralization.
W-CLPGMS01	CZ_SOP_D06_03_158 except chap. 9.3 a 9.4 (US EPA 8041, US EPA 3500, CSN EN 12673) Determination of phenols, chlorinated phenols and cresols by gas chromatography method with detection MS and calculation of phenols, chlorinated phenols and cresols sums from measured values
W-CNT-PHO	CZ_SOP_D06_02_089.A (CSN 75 7415, CSN EN ISO 14403-2) / CZ_SOP_D06_07_010 (CSN 75 7415) Determination of total cyanide by spectrophotometry and determination of complex-forming cyanides by calculation from measure values.
W-CO2F-CC2	CZ_SOP_D06_02_072 (CSN EN ISO 9963-1, CSN 75 7373) Determination of acid neutralizing capacity (alkalinity) by potentiometric titration and determination of the carbonate hardness and determination of CO2 forms by calculation from measured values including the calculation of total mineralization.
W-CON-PCT	CZ_SOP_D06_02_075 (ČSN EN 27 888, SM 2520 B, ČSN EN 16192) Determination of electrical conductivity by conductometer and calculation of salinity.
W-HG-AFSFL	CZ_SOP_D06_02_096 (US EPA 245.7, CSN EN ISO 17852, CSN EN 16192, samples prepared as per CZ_SOP_D06_02_J02 chap. 10.1 and 10.2.) - Determination of Mercury by Fluorescence Spectrometry. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-METAXFL1	CZ_SOP_D06_02_001 (US EPA 200.7, CSN EN ISO 11885, CSN EN 16192, US EPA 6010, SM 3120, CSN 75 7358, samples prepared as per CZ_SOP_D06_02_J02 chap. 10.1 and 10.2) - Determination of elements by atomic emission spectrometry with inductively coupled plasma and stoichiometric calculations of compounds concentration from measured values including the calculation of total mineralization and calculating the sum of Ca+Mg. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-METMSFL1	CZ_SOP_D06_02_002 (US EPA 200.8, CSN EN ISO 17294-2, US EPA 6020A, CSN EN 16192, CSN 75 7358, samples prepared as per CZ_SOP_D06_02_J02 chap. 10.1, 10.2) - Determination of elements by mass spectrometry with inductively coupled plasma and stoichiometric calculations of compounds concentration from measured values including the calculation of total mineralization and calculating the sum of Ca+Mg. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-METMSFL2	CZ_SOP_D06_02_002 (US EPA 200.8, CSN EN ISO 17294-2, US EPA 6020A, CSN EN 16192, CSN 75 7358, samples prepared as per CZ_SOP_D06_02_J02 chap. 10.1, 10.2) - Determination of elements by mass spectrometry with inductively coupled plasma and stoichiometric calculations of compounds concentration from measured values including the calculation of total mineralization and calculating the sum of Ca+Mg. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-NO3-SPC	CZ_SOP_D06_02_019 (ČSN EN ISO 11732, ČSN EN ISO 13395, ČSN EN 16192, SM 4500-NO2-, SM 4500-NO3-) Determination of sum of ammonium and ammonium ions, nitrite and the sum of nitrite and nitrate ions by discrete spectrophotometry and determination of nitrite, nitrate, ammonia, inorganic, organic, total nitrogen, free ammonia and dissociated ammonium ions by calculation from measured values including the calculation of total mineralization.
W-OCPECD01	CZ_SOP_D06_03_169 (CSN EN ISO 6468, US EPA 8081, DIN 38407-3, samples prepared as per CZ_SOP_D06_03_P01 chap. 9.1, CZ_SOP_D06_03_P02 chap. 9.1) Determination of organochlorine pesticides and other halogen compounds(2) by gas chromatography method with ECD detection and calculation of organochlorine pesticides and other halogen compounds sums from measured values.
W-PAHGMS05	CZ_SOP_D06_03_161 (US EPA 8270D, US EPA 8082A, CSN EN ISO 6468, US EPA 8000D, samples preparation as per CZ_SOP_D06_03_P01 chap. 9.1, 9.4.1). Determination of semi volatile organic compounds by gas chromatography method with MS or MS/MS detection and calculation of semi volatile organic compounds sums from measured values
W-PCBGMS05	CZ_SOP_D06_03_161 (US EPA 8270D, US EPA 8082A, CSN EN ISO 6468, US EPA 8000D, samples preparation as per CZ_SOP_D06_03_P01 chap. 9.1, 9.4.1). Determination of semi volatile organic compounds by gas chromatography method with MS or MS/MS detection and calculation of semi volatile organic compounds sums from measured values
W-PH-PCT	CZ_SOP_D06_02_105 (ČSN ISO 10523, US EPA 150.1, ČSN EN 16192, SM 4500-H+ B) Determination of pH by potentiometry
W-SO4-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1, CSN EN 16192) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and determination of nitrite nitrogen and nitrate nitrogen and sulfate sulfur by calculation from measured values including the calculation of total mineralization.
W-TPHFID01	CZ_SOP_D06_03_151 (CSN EN ISO 9377-2, US EPA 8015, US EPA 3510, TNRCC Method 1006) Determination of extractable compounds in the range of hydrocarbons C10- C40, their fractions calculated from the measured values by gas chromatography method with FID detection
W-VOCGMS03	CZ_SOP_D06_03_155 except chap. 10.5, 10.6 (US EPA 624, US EPA 8260, US EPA 8015, CSN EN ISO 10301, MADEP 2004, rev. 1.1, CSN ISO 11423, CSN EN ISO 15680) Determination of volatile organic compounds by gas chromatography method with FID and MS detection and calculation of volatile organic compounds sums from measured values

A `` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



CERTIFICATE OF ANALYSIS

Work Order	: PR23D4095	Issue Date	: 30-Nov-2023
Customer	: VISA - Consultores de Geologia Aplicada e Engenharia	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Mr. Joao Meira	Contact	: Client Service
Address	: Rua A Gazeta de Oeiras, n.º 18-A 2780-171 Oeiras	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: jmeira@visaconsultores.com	E-mail	: customer.support@alsglobal.com
Telephone	: +351 2144 61420	Telephone	: +420 226 226 228
Project	: 3479	Page	: 1 of 5
Order number	: ----	Date Samples Received	: 22-Nov-2023
Site	: ----	Quote number	: PR2023VISAC-PT0001 (PT-300-23-0144)
Sampled by	: customer	Date of test	: 22-Nov-2023 - 30-Nov-2023
		QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory. The laboratory is not responsible for information provided by the customer.

The laboratory declares that the test results relate only to the listed samples. If "ALS" is not included in the test report in the "Sampled by" section, then the results refer to the sample as received.

Should a sample contain sediment it is decanted prior to volatile compounds determination.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný

Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: GROUNDWATER

Client sample ID
Laboratory sample ID
Client sampling date / time

Parameter	Method	LOR	Unit	Furo		----		----	
				Result	MU	Result	MU	Result	MU
				PR23D4095001		----		----	
				20-Nov-2023 11:20		----		----	
Physical Parameters									
Electrical Conductivity @ 25°C	W-CON-PCT	0.10	mS/m	39.2	± 10.0%	----	----	----	----
pH Value	W-PH-PCT	1.00	-	7.82	± 1.0%	----	----	----	----
Nonmetallic Inorganic Parameters									
Carbonates (CO3 2-)	W-CO2F-CC2	0.0	mg/L	0.0	---	----	----	----	----
Chloride	W-CL-IC	1.00	mg/L	9.54	± 15.0%	----	----	----	----
Nitrates	W-NO3-SPC	0.27	mg/L	8.28	---	----	----	----	----
Sulphate as SO4 2-	W-SO4-IC	5.00	mg/L	<5.00	---	----	----	----	----
Total Cyanide	W-CNT-PHO	0.005	mg/L	<0.005	---	----	----	----	----
Base neutralizing capacity (acidity) pH 8.3	W-ACID-PCT	0.150	mmol/L	<0.150	---	----	----	----	----
Hydrogen carbonates (HCO3-)	W-CO2F-CC2	0.0	mg/L	222	± 12.0%	----	----	----	----
Nitrate as N	W-NO3-SPC	0.060	mg/L	1.87	---	----	----	----	----
Total Carbon Dioxide as CO2	W-CO2F-CC2	0.0	mg/L	165	± 12.0%	----	----	----	----
Base neutralizing capacity (acidity) pH 4.5	W-ACID-PCT	0.150	mmol/L	<0.150	---	----	----	----	----
Free Carbon Dioxide as CO2	W-CO2F-CC2	0.0	mg/L	4.84	± 12.0%	----	----	----	----
Aggressive CO2	W-CO2F-CC2	0.0	mg/L	0.0	---	----	----	----	----
Acid neutralizing capacity (alkalinity) pH 4.5	W-ALK-PCT	0.150	mmol/L	3.64	± 12.0%	----	----	----	----
Acid neutralizing capacity (alkalinity) pH 8.3	W-ALK-PCT	0.150	mmol/L	<0.150	---	----	----	----	----
Dissolved Metals / Major Cations									
Aluminium	W-METAXFL1	0.010	mg/L	<0.010	---	----	----	----	----
Arsenic	W-METMSFL1	1.0	µg/L	<1.0	---	----	----	----	----
Barium	W-METMSFL2	0.5	µg/L	4.7	± 10.0%	----	----	----	----
Cadmium	W-METMSFL1	0.50	µg/L	<0.50	---	----	----	----	----
Calcium	W-METAXFL1	0.0050	mg/L	73.1	± 10.0%	----	----	----	----
Chromium	W-METMSFL1	3.0	µg/L	<3.0	---	----	----	----	----
Cobalt	W-METMSFL2	0.50	µg/L	<0.50	---	----	----	----	----
Copper	W-METMSFL2	1.0	µg/L	<1.0	---	----	----	----	----
Iron	W-METAXFL1	0.0020	mg/L	<0.0020	---	----	----	----	----
Lead	W-METMSFL1	1.0	µg/L	<1.0	---	----	----	----	----
Magnesium	W-METAXFL1	0.0030	mg/L	3.80	± 10.0%	----	----	----	----
Manganese	W-METAXFL1	0.00050	mg/L	<0.00050	---	----	----	----	----
Mercury	W-HG-AFSFL	0.0100	µg/L	<0.0100	---	----	----	----	----
Molybdenum	W-METMSFL1	1.0	µg/L	<1.0	---	----	----	----	----
Nickel	W-METMSFL1	1.0	µg/L	<1.0	---	----	----	----	----
Potassium	W-METAXFL1	0.015	mg/L	0.376	± 10.0%	----	----	----	----
Sodium	W-METAXFL1	0.030	mg/L	6.33	± 10.0%	----	----	----	----
Tin	W-METMSFL2	5.0	µg/L	<5.0	---	----	----	----	----
Vanadium	W-METMSFL2	5.0	µg/L	<5.0	---	----	----	----	----
Zinc	W-METMSFL2	5.0	µg/L	10.6	± 10.0%	----	----	----	----
BTEX									
Benzene	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Toluene	W-VOCGMS03	0.50	µg/L	<0.50	---	----	----	----	----
Ethylbenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
meta- & para-Xylene	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
ortho-Xylene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
Sum of xylenes	W-VOCGMS03	0.30	µg/L	<0.30	---	----	----	----	----
Sum of BTEX	W-VOCGMS03	1.10	µg/L	<1.10	---	----	----	----	----
Halogenated Volatile Organic Compounds									
Vinyl chloride	W-VOCGMS03	1.00	µg/L	<1.00	---	----	----	----	----
trans-1,2-Dichloroethene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
Dichloromethane	W-VOCGMS03	6.0	µg/L	<6.0	---	----	----	----	----
cis-1,2-Dichloroethene	W-VOCGMS03	0.10	µg/L	0.20	± 40.0%	----	----	----	----
1,1-Dichloroethane	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----



Sub-Matrix: GROUNDWATER				Client sample ID		Furo			
				Laboratory sample ID		PR23D4095001			
				Client sampling date / time		20-Nov-2023 11:20			
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Halogenated Volatile Organic Compounds - Continued									
Chloroform	W-VOCGMS03	0.30	µg/L	<0.30	---	----	----	----	----
1,2-Dichloroethane	W-VOCGMS03	1.0	µg/L	<1.0	---	----	----	----	----
1,1,1-Trichloroethane	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
Tetrachloromethane	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
Trichloroethene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,2-Dichloropropane	W-VOCGMS03	1.0	µg/L	<1.0	---	----	----	----	----
1,1,2-Trichloroethane	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Tetrachloroethene	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Chlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,2-Dichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,4-Dichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,3-Dichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,2,4-Trichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,2,3-Trichlorobenzene	W-VOCGMS03	0.10	µg/L	<0.10	---	----	----	----	----
1,3,5-Trichlorobenzene	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Sum of 3 Dichlorobenzenes	W-VOCGMS03	0.30	µg/L	<0.30	---	----	----	----	----
Sum of 3 Trichlorobenzenes	W-VOCGMS03	0.40	µg/L	<0.40	---	----	----	----	----
Non-Halogenated Volatile Organic Compounds									
Styrene	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Methyl tert-Butyl Ether (MTBE)	W-VOCGMS03	0.20	µg/L	<0.20	---	----	----	----	----
Polycyclic Aromatics Hydrocarbons (PAHs)									
Naphthalene	W-PAHGMS05	0.100	µg/L	<0.100	---	----	----	----	----
Acenaphthylene	W-PAHGMS05	0.010	µg/L	<0.010	---	----	----	----	----
Acenaphthene	W-PAHGMS05	0.010	µg/L	<0.010	---	----	----	----	----
Fluorene	W-PAHGMS05	0.020	µg/L	<0.020	---	----	----	----	----
Phenanthrene	W-PAHGMS05	0.030	µg/L	<0.030	---	----	----	----	----
Anthracene	W-PAHGMS05	0.020	µg/L	<0.020	---	----	----	----	----
Fluoranthene	W-PAHGMS05	0.030	µg/L	<0.030	---	----	----	----	----
Pyrene	W-PAHGMS05	0.060	µg/L	<0.060	---	----	----	----	----
Benz(a)anthracene	W-PAHGMS05	0.010	µg/L	<0.010	---	----	----	----	----
Chrysene	W-PAHGMS05	0.010	µg/L	<0.010	---	----	----	----	----
Benzo(b)fluoranthene	W-PAHGMS05	0.010	µg/L	<0.010	---	----	----	----	----
Benzo(k)fluoranthene	W-PAHGMS05	0.010	µg/L	<0.010	---	----	----	----	----
Benzo(a)pyrene	W-PAHGMS05	0.0200	µg/L	<0.0200	---	----	----	----	----
Indeno(1,2,3.cd)pyrene	W-PAHGMS05	0.010	µg/L	<0.010	---	----	----	----	----
Benzo(g,h,i)perylene	W-PAHGMS05	0.010	µg/L	<0.010	---	----	----	----	----
Dibenz(a,h)anthracene	W-PAHGMS05	0.010	µg/L	<0.010	---	----	----	----	----
Sum of 16 PAH	W-PAHGMS05	0.370	µg/L	<0.370	---	----	----	----	----
PCBs									
Sum of 7 PCBs	W-PCBGMS05	0.00730	µg/L	<0.00730	---	----	----	----	----
PCB 52	W-PCBGMS05	0.00110	µg/L	<0.00110	---	----	----	----	----
PCB 28	W-PCBGMS05	0.00110	µg/L	<0.00110	---	----	----	----	----
PCB 180	W-PCBGMS05	0.000950	µg/L	<0.000950	---	----	----	----	----
PCB 153	W-PCBGMS05	0.00110	µg/L	<0.00110	---	----	----	----	----
PCB 138	W-PCBGMS05	0.00120	µg/L	<0.00120	---	----	----	----	----
PCB 118	W-PCBGMS05	0.00110	µg/L	<0.00110	---	----	----	----	----
PCB 101	W-PCBGMS05	0.000750	µg/L	<0.000750	---	----	----	----	----
Organochlorine Pesticides									
Hexachloroethane	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
1,2,3,5- & 1,2,4,5-Tetrachlorobenzene	W-OCPECD01	0.020	µg/L	<0.020	---	----	----	----	----
1,2,3,4-Tetrachlorobenzene	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Pentachlorobenzene	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Hexachlorocyclohexane Alpha	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Hexachlorobenzene (HCB)	W-OCPECD01	0.0050	µg/L	<0.0050	---	----	----	----	----
Hexachlorocyclohexane Beta	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Hexachlorocyclohexane Gamma	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----
Hexachlorocyclohexane Delta	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----



Sub-Matrix: GROUNDWATER				Client sample ID	Furo		----		----	
				Laboratory sample ID	PR23D4095001		----		----	
				Client sampling date / time	20-Nov-2023 11:20		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	
Organochlorine Pesticides - Continued										
Heptachlor	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
Aldrin	W-OCPECD01	0.0050	µg/L	<0.0050	---	----	----	----	----	
Telodrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
Isodrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
Heptachloroepoxide-cis	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
Heptachloroepoxide-trans	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
2,4-DDE	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
alpha-Endosulfan	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
4,4'-DDE	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
Dieldrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
2,4-DDD	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
Endrin	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
4,4'-DDD	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
2,4-DDT	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
4,4'-DDT	W-OCPECD01	0.010	µg/L	<0.010	---	----	----	----	----	
Sum of 3 tetrachlorobenzenes	W-OCPECD01	0.030	µg/L	<0.030	---	----	----	----	----	
Chlorophenols										
2-Chlorophenol	W-CLPGMS01	0.100	µg/L	<0.100	---	----	----	----	----	
3-Chlorophenol	W-CLPGMS01	0.100	µg/L	<0.100	---	----	----	----	----	
4-Chlorophenol	W-CLPGMS01	0.100	µg/L	<0.100	---	----	----	----	----	
2,6-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,4@2,5-Dichlorophenol	W-CLPGMS01	0.20	µg/L	<0.20	---	----	----	----	----	
3,5-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,3-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
3,4-Dichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,4,6-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,3,6-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,3,5-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,4,5-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,3,4-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
3,4,5-Trichlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,3,5,6-Tetrachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,3,4,5-Tetrachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
2,3,4,6-Tetrachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
Pentachlorophenol	W-CLPGMS01	0.10	µg/L	<0.10	---	----	----	----	----	
Petroleum Hydrocarbons										
Aliphates C5-C8	W-VOCGMS03	10	µg/L	<10	---	----	----	----	----	
Aliphates C8-C10	W-VOCGMS03	10	µg/L	<10	---	----	----	----	----	
C10 - C12 Fraction	W-TPHFID01	5.0	µg/L	<5.0	---	----	----	----	----	
C12 - C16 Fraction	W-TPHFID01	5.0	µg/L	<5.0	---	----	----	----	----	
C16 - C35 Fraction	W-TPHFID01	30.0	µg/L	<30.0	---	----	----	----	----	

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
W-ACID-PCT	CZ_SOP_D06_02_073 (CSN 75 73 72) Determination of base neutralizing capacity (acidity) by potentiometric titration.
W-ALK-PCT	CZ_SOP_D06_02_072 (CSN EN ISO 9963-1, CSN EN ISO 9963-2, CSN 75 7373, SM2320) Determination of acid neutralizing capacity (alkalinity) by potentiometric titration and calculation of the carbonate hardness and CO2 forms from measured values including the calculation of total mineralization



Analytical Methods	Method Descriptions
W-CL-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and calculation of nitrite nitrogen and nitrate nitrogen and sulphate sulphur from measured values including the calculation of total mineralization.
W-CLPGMS01	CZ_SOP_D06_03_158 (US EPA Method 8041; US EPA Method 3500, ČSN EN 12673) Determination of phenol, chlorinated phenols by gas chromatography method with detection MS and calculation of phenol and chlorinated phenols sums from measured values.
W-CNT-PHO	CZ_SOP_D06_02_089.A (CSN 75 7415, CSN EN ISO 14403-2) Determination of total cyanide by spectrophotometry and calculation of complex-forming cyanides from measure values.
W-CO2F-CC2	CZ_SOP_D06_02_072 (CSN EN ISO 9963-1, CSN 75 7373) Determination of acid neutralizing capacity (alkalinity) by potentiometric titration and calculation of the carbonate hardness and CO2forms from measured values including the calculation of total mineralization
W-CON-PCT	CZ_SOP_D06_02_075 (ČSN EN 27 888, SM 2520 B) Determination of electrical conductivity by conductometer and calculation of salinity.
W-HG-AFSFL	CZ_SOP_D06_02_096 (US EPA Method 245.7, CSN EN ISO 17852) - Determination of Mercury by Fluorescence Spectrometry. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-METAXFL1	CZ_SOP_D06_02_001 (US EPA Method 200.7, CSN EN ISO 11885, US EPA Method 6010, SM 3120, CSN 75 7358) - Determination of elements by atomic emission spectrometry with inductively coupled plasma and stoichiometric calculations of compounds concentration from measured values including the calculation of total mineralization and calculating the sum of Ca+Mg. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-METMSFL1	CZ_SOP_D06_02_002 (US EPA Method 200.8, CSN EN ISO 17294-2, US EPA Method 6020A, CSN 75 7358) - Determination of elements by mass spectrometry with inductively coupled plasma and stoichiometric calculations of compounds concentration from measured values including the calculation of total mineralization and calculating the sum of Ca +Mg. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-METMSFL2	CZ_SOP_D06_02_002 (US EPA Method 200.8, CSN EN ISO 17294-2, US EPA Method 6020A, CSN 75 7358) - Determination of elements by mass spectrometry with inductively coupled plasma and stoichiometric calculations of compounds concentration from measured values including the calculation of total mineralization and calculating the sum of Ca +Mg. Sample was filtered by microfilter with porosity 0.45 µm followed by nitric acid addition prior to analysis.
W-NO3-SPC	CZ_SOP_D06_02_019 (CSN EN ISO 11732, CSN EN ISO 13395, SM 4500-NO2-, SM 4500-NO3-) Determination of nitrite sum and sum of nitrite and nitrate nitrogen by discrete spectrophotometry and calculation of nitrites and nitrates from measured values
W-OCPECD01	CZ_SOP_D06_03_169 (ČSN EN ISO 6468; US EPA Method 8081; DIN 38407-3) Determination of organochlorine pesticides and other halogen compounds by gas chromatography method with ECD detection and calculation of organochlorine pesticides and other halogen compounds sums from measured values
W-PAHGMS05	CZ_SOP_D06_03_161 (US EPA Method 8270D; US EPA Method 8082A; ČSN EN ISO 6468; US EPA Method 8000D) Determination of semi volatile organic compounds by gas chromatography method with MS or MS/MS detection and calculation of semi volatile organic compounds sums from measured values
W-PCBGMS05	CZ_SOP_D06_03_161 (US EPA Method 8270D; US EPA Method 8082A; ČSN EN ISO 6468; US EPA Method 8000D) Determination of semi volatile organic compounds by gas chromatography method with MS or MS/MS detection and calculation of semi volatile organic compounds sums from measured values
W-PH-PCT	CZ_SOP_D06_02_105 (CSN ISO 10523, US EPA Method 150.1, SM 4500-H+ B) Determination of pH by potentiometry
W-SO4-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and calculation of nitrite nitrogen and nitrate nitrogen and sulphate sulphur from measured values including the calculation of total mineralization.
W-TPHFID01	CZ_SOP_D06_03_151 (ČSN EN ISO 9377-2; US EPA Method 8015; US EPA Method 3510) Determination of extractable substances in the range of hydrocarbons C10 – C40, their fractions by calculation from measured values using the gas chromatography method with FID detection
W-VOCGMS03	CZ_SOP_D06_03_155 (US EPA Method 624, US EPA Method 5021A, US EPA Method 8260, US EPA Method 8015, CSN EN ISO 10301, MADEP 2004, rev. 1.1, CSN ISO 11423, CSN EN ISO 15680) Determination of volatile organic compounds by gas chromatography method with FID and MS detection and calculation of volatile organic compounds sums from measured values

The symbol "*" for the method indicates a test outside the scope of accreditation of the laboratory or subcontractor. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. If the lab used for matrix outside the scope of accreditation or non-standard sample matrix procedure specified in the accredited method and issues non-accredited results, this fact is stated on the title page of this protocol in the section "Notes". If the test report shows the results of subcontracting, the place of performance of the test is outside the laboratories of ALS Czech Republic, s.r.o.

The method for calculating of the summation parameters is available on request in the customer service.

The end of the certificate of analysis