

Reg. št. / Ref. No.: 3150-0214/10-0020

Velja od / Valid as of: 1. junij 2023

Zamenjuje izdajo, veljavno od dne / Replaces the Annex valid as of: 23. september 2021

Akreditacija je veljavna do preklica. Veljavnost je mogoče preveriti na spletni strani SA, www.slo-akreditacija.si.

This accreditation shall remain in force until withdrawn. Information on current status is available at the SA website, www.slo-akreditacija.si.

PRILOGA K AKREDITACIJSKI LISTINI ***Annex to Accreditation Certificate***

LP-090

1 AKREDITIRANI ORGAN / Accredited body

INSTITUT "JOŽEF STEFAN"

Jamova cesta 39, 1000 Ljubljana

Odsek za znanosti o okolju

2 ZAHTEVE ZA USPOSOBLJENOST / Competence Requirements

SIST EN ISO/IEC 17025:2017

3 OBSEG AKREDITACIJE / Scope of accreditation

V okviru te akreditacijske listine Slovenska akreditacija priznava akreditiranemu organu usposobljenost za opravljanje naslednjih dejavnosti: / SA hereby recognizes the accredited body as being competent to perform the following activities:

3.1 Skrajšan opis obsega akreditacije / Brief description of the scope

Področja preskušanja glede na vrsto preskušanja / Testing fields with reference to the type of test:

- Kemija / Chemistry
- Radiokemija, sevanje / Radiochemistry, radiation

Področja preskušanja glede na vrsto preskušanca / Testing fields with reference to the type of test item:

- Biološki vzorci (klinični in patohistološki vzorci, vzorci živalskega okolja) / Biological samples (clinical and pathohistological samples, samples from animal environment)



- Kemikalije, kemični proizvodi, kozmetika / *Chemicals, chemical products, cosmetics*
- Gradbeni proizvodi, materiali in konstrukcije (beton, kamnine in zemljine, opeka in ke ramika) / *Construction products, materials and structures (concrete, rock and soil, brick and ceramics)*
- Industrijski materiali in proizvodi (kovine, polimeri) / *Industrial materials and products (metals, polymers)*
- Okolje in vzorci iz okolja (vode, tla, odpadki, okolje, viri emisij snovi, viri ionizirajočega sevanja) / *Environment and samples from the environment (waters, ground, wastes, environmental, sources of emission of substances, sources of ionising radiation)*
- Živila in vzorci prehranske verige / *Foodstuffs and food chain samples*
- Goriva in maziva / *Fuels and lubricants*
- Papir, karton in embalaža / *Paper, paperboard and packaging*
- Plastika in guma / *Plastic and rubber*
- Steklo, keramika / *Glass, ceramics*
- Kmetijski proizvodi / *Agricultural products*
- Les / *Wood*

Kopija priloge za objavo na spletnem mestu. / *Copy of attachment for web publishing.*

3.2 Podroben opis obsega akreditacije / Detailed scope of accreditation

3.2.1 Odsek za znanosti o okolju: Laboratorij za radiokemijo, Brinje 40, 1262 Dol pri Ljubljani

Tabela / Table 1

Tip obsega: fixni / Type of scope: fixed Mesto izvajanja: v laboratoriju / Site: in the laboratory Področja preskušanja glede na vrsto preskušanja: radiokemija, sevanje / Testing fields with reference to the type of test: radiochemistry, radiation Področja preskušanja glede na vrsto preskušanca: biološki vzorci (klinični in patohistološki vzorci, vzorci živalskega okolja); gradbeni proizvodi, materiali in konstrukcije (kamnine in zemljine); okolje in vzorci iz okolja (vode, tla, odpadki, okolje, viri emisij snovi, viri ionizirajočega sevanja); živila in vzorci prehranske verige; kmetijski proizvodi / Testing fields with reference to the type of test item: biological samples (clinical and pathohistological samples, samples from animal environment); construction products, materials and structures (rock and soil); environment and samples from the environment (waters, ground, wastes, environmental, sources of emission of substances, sources of ionising radiation); foodstuffs and food chain samples; agricultural products					
Št. No.	Oznaka dokumenta, ki opisuje metodo preskušanja <i>Identification of the document, describing the testing method</i>	Preskušana lastnost oziroma parameter <i>Characteristic or parameter tested</i>	Opredelevitev preskusa (vrsta, princip oziroma tehnika preskusa) <i>Description of test (type of test, test principle or technique)</i>	Območje preskušanja <i>Range of testing</i>	Preskušanci (materiali, proizvodi) <i>Items tested (materials, products)</i>
1.	SDN-O2-STC(01) interna metoda, 11. izdaja <i>in-house method, version 11</i>	Koncentracija aktivnosti stroncija, Bq/kg <i>Strontium activity concentration, Bq/kg</i>	Meritev s proporcionalnim beta števcem <i>Measurement with a proportional beta counter</i>	^{89/90} Sr minimalna aktivnost <i>minimum detectable activity (MDA): 0,007 Bq</i> - tla, sedimenti (glede na suho snov) <i>ground, sediment (on dry matter basis)</i> območje (range): (0,121 - 180) Bq/kg - voda, mleko <i>water, milk</i> območje (range): (0,007 - 10,8) Bq/kg - hrana, mleko, krma, sušina (glede na suho snov) <i>foodstuffs, milk, feedstuffs, residue (on dry matter basis)</i> območje (range): (0,015 - 155) Bq/kg - zračni filtri (filter in zračni delci) <i>aerosol filters (filter and air particles)</i> območje (range): (0,073 - 2700) Bq/kg Negotovost rezultata za vse vzorce, odvisna od koncentracije aktivnosti in vrste vzorca. <i>Uncertainty of result for all samples, depending of activity concentrations and matrix.</i> Relativna kombinirana standardna negotovost (u _c) <i>Relative combined standard uncertainty (u_c): od/from:</i> 4,5% do/to: 30% ⁹⁰ Sr minimalna aktivnost <i>minimum detectable activity (MDA): 0,018 Bq</i> - tla, sedimenti (glede na suho snov) <i>ground, sediment (on dry matter basis)</i> območje (range): (0,299 - 350) Bq/kg - voda, mleko	tekoči in trdni materiali <i>liquid and solid materials</i>



Tip obsega: **fikсни** / Type of scope: **fixed**

Mesto izvajanja: **v laboratoriju** / Site: **in the laboratory**

Področja preskušanja glede na vrsto preskušanja: **radiokemija, sevanje** / Testing fields with reference to the type of test: **radiochemistry, radiation**

Področja preskušanja glede na vrsto preskušanca: **biološki vzorci (klinični in patohistološki vzorci, vzorci živalskega okolja); gradbeni proizvodi, materiali in konstrukcije (kamnine in zemljine); okolje in vzorci iz okolja (vode, tla, odpadki, okolje, viri emisij snovi, viri ionizirajočega sevanja); živila in vzorci prehranske verige; kmetijski proizvodi** / Testing fields with reference to the type of test item: **biological samples (clinical and pathohistological samples, samples from animal environment); construction products, materials and structures (rock and soil); environment and samples from the environment (waters, ground, wastes, environmental, sources of emission of substances, sources of ionising radiation); foodstuffs and food chain samples; agricultural products**

Št. No.	Oznaka dokumenta, ki opisuje metodo preskušanja <i>Identification of the document, describing the testing method</i>	Preskušana lastnost oziroma parameter <i>Characteristic or parameter tested</i>	Opredelitev preskusa (vrsta, princip oziroma tehnika preskusa) <i>Description of test (type of test, test principle or technique)</i>	Območje preskušanja <i>Range of testing</i>	Preskušanci (materiali, proizvodi) <i>Items tested (materials, products)</i>
				<p>water, milk območje (range): (0,018 - 21) Bq/kg</p> <p>- hrana, mleko, krma, sušina (glede na suho snov) foodstuffs, milk, feedstuffs, residue (on dry matter basis), območje (range): (0,036 - 210) Bq/kg</p> <p>- zračni filtri (filter in zračni delci) aerosol filters (filter and air particles) območje (range): (0,179 - 5200) Bq/kg</p> <p>Negotovost rezultata za vse vzorce, odvisna od koncentracije aktivnosti in vrste vzorca. Uncertainty of result for all samples, depending of activity concentrations and matrix. Relativna kombinirana standardna negotovost (u_c) Relative combined standard uncertainty (u_c): od/from: 3,5% do/to: 30%</p> <p>⁸⁹Sr minimalna aktivnost minimum detectable activity (MDA): 0,014 Bq</p> <p>- tla, sedimenti (glede na suho snov) ground, sediment (on dry matter basis) območje (range): (0,240 - 280) Bq/kg</p> <p>- voda, mleko water, milk območje (range): (0,014 - 17) Bq/kg</p> <p>- hrana, mleko, krma, sušina (glede na suho snov) foodstuffs, milk, feedstuffs, residue (on dry matter basis), območje (range): (0,029 - 170) Bq/kg</p> <p>- zračni filtri (filter in zračni delci) aerosol filters (filter and air particles) območje (range): (0,144 - 4200) Bq/kg</p> <p>Negotovost rezultata za vse vzorce, odvisna od koncentracije aktivnosti in vrste vzorca. Uncertainty of result for all samples, depending of activity concentrations and matrix. Relativna kombinirana standardna negotovost (u_c)</p>	

Tip obsega: fiksn / Type of scope: fixed Mesto izvajanja: v laboratoriju / Site: in the laboratory Področja preskušanja glede na vrsto preskušanja: radiokemija, sevanje / Testing fields with reference to the type of test: radiochemistry, radiation Področja preskušanja glede na vrsto preskušanca: biološki vzorci (klinični in patohistološki vzorci, vzorci živalskega okolja); gradbeni proizvodi, materiali in konstrukcije (kamnine in zemljine); okolje in vzorci iz okolja (vode, tla, odpadki, okolje, viri emisij snovi, viri ionizirajočega sevanja); živila in vzorci prehranske verige; kmetijski proizvodi / Testing fields with reference to the type of test item: biological samples (clinical and pathohistological samples, samples from animal environment); construction products, materials and structures (rock and soil); environment and samples from the environment (waters, ground, wastes, environmental, sources of emission of substances, sources of ionising radiation); foodstuffs and food chain samples; agricultural products					
Št. No.	Oznaka dokumenta, ki opisuje metodo preskušanja <i>Identification of the document, describing the testing method</i>	Preskušana lastnost oziroma parameter <i>Characteristic or parameter tested</i>	Opredelevitev preskusa (vrsta, princip oziroma tehnika preskusa) <i>Description of test (type of test, test principle or technique)</i>	Območje preskušanja <i>Range of testing</i>	Preskušanci (materiali, proizvodi) <i>Items tested (materials, products)</i>
				Relative combined standard uncertainty (u_c): od/from: 3,5% do/to: 48%	
2.	SDN-O2-STC(02) interna metoda, 11. izdaja <i>in-house method, version 11</i>	Koncentracija aktivnosti tritija, Bq/kg <i>Tritium activity concentration, Bq/kg</i>	Meritev s tekočinsko scintilacijskim števcem <i>Measurement with a liquid scintillation counter</i>	minimalna aktivnost <i>minimum detectable activity (MDA): 0,015 Bq</i> direktna metoda <i>direct method</i> območje (range): (1,51 - 4,4E+06) Bq/kg Relativna kombinirana standardna negotovost (u_c) <i>Relative combined standard uncertainty (u_c): od/from: 1,0% do/to: 32%</i> elektroliza <i>electrolytical enrichment</i> območje (range): (0,147 - 320) Bq/kg Relativna kombinirana standardna negotovost (u_c) <i>Relative combined standard uncertainty (u_c): od/from: 2,0% do/to: 32%</i>	voda, urin <i>water, urine</i> voda <i>water</i>
3.	SDN-O2-STC(03) interna metoda, 11. izdaja <i>in-house method, version 11</i>	Koncentracija aktivnosti ^{14}C v bazični raztopini, Bq/kg <i>Activity concentration of ^{14}C in alkaline solution, Bq/kg</i>	Meritev s tekočinsko scintilacijskim števcem <i>Measurement with a liquid scintillation counter</i>	minimalna aktivnost <i>minimum detectable activity (MDA): 0,019 Bq</i> območje (range): (1,00 - 8000) Bq/kg Relativna kombinirana standardna negotovost (u_c) <i>Relative combined standard uncertainty (u_c): od/from: 4,0% do/to: 46%</i>	bazična raztopina <i>alkaline solution</i>

Tabela / Table 2

Tip obsega: fixni / Type of scope: fixed Mesto izvajanja: v laboratoriju / Site: in the laboratory Področja preskušanja glede na vrsto preskušanja: kemija / Testing fields with reference to the type of test: chemistry Področja preskušanja glede na vrsto preskušanca: biološki vzorci (klinični in patohistološki vzorci, vzorci živalskega okolja); kemikalije, kemični proizvodi, kozmetika; gradbeni proizvodi, materiali in konstrukcije (beton, kamnine in zemljine, opeka in keramika); industrijski materiali in proizvodi (kovine, polimeri); okolje in vzorci iz okolja (vode, tla, odpadki, okolje); živila in vzorci prehranske verige; goriva in maziva; papir, karton in embalaža; plastika in guma; steklo, keramika; kmetijski proizvodi; les / Testing fields with reference to the type of test item: biological samples (clinical and pathohistological samples, samples from animal environment); chemicals, chemical products, cosmetics; construction products, materials and structures (concrete, rock and soil, brick and ceramics); industrial materials and products (metals, polymers); environment and samples from the environment (waters, ground, wastes, environmental); foodstuffs and food chain samples; fuels and lubricants; paper, paperboard and packaging; plastic and rubber; glass, ceramics; agricultural products; wood																																																																																																																																																																																																																																	
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4.	SDN-O2-K0(01) interna metoda, 14. izdaja <i>in-house method, version 14</i>	Elementna sestava vzorca, mg/kg <i>Elemental composition of the sample, mg/kg</i>	Instrumentalna nevtronska aktivacijska analiza in spektrometrija gama (k_0 -INAA) <i>Instrumental neutron activation analysis and gamma spectrometry (k_0-INAA)</i>	Relativna kombinirana standardna negotovost (u_c), % <i>Relative combined standard uncertainty (u_c), %</i> <table border="1"> <thead> <tr> <th></th> <th>Od/From mg/kg</th> <th>Do/To mg/kg</th> <th>Od/From u_c (%)</th> <th>Do/To u_c (%)</th> </tr> </thead> <tbody> <tr><td>Ag</td><td>0,1</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td></td><td>1E+04</td><td>3,5</td><td>4,0</td></tr> <tr><td>As</td><td>0,03</td><td>5,0</td><td>3,5</td><td>10</td></tr> <tr><td>> 5,0</td><td></td><td>5E+05</td><td>3,5</td><td>4,0</td></tr> <tr><td>Au</td><td>0,0004</td><td>0,050</td><td>3,5</td><td>20</td></tr> <tr><td>> 0,050</td><td></td><td>1E+04</td><td>3,5</td><td>4,0</td></tr> <tr><td>Br</td><td>0,1</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td></td><td>1E+04</td><td>3,5</td><td>4,0</td></tr> <tr><td>Ca</td><td>200</td><td>1E+04</td><td>3,5</td><td>20</td></tr> <tr><td>> 1E+04</td><td></td><td>4E+05</td><td>3,5</td><td>5,0</td></tr> <tr><td>Ce</td><td>0,2</td><td>10,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 10,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Co</td><td>0,02</td><td>10,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 10,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Cr</td><td>0,5</td><td>20,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 20,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Cs</td><td>0,03</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Eu</td><td>0,01</td><td>2,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 2,0</td><td></td><td>1E+02</td><td>3,5</td><td>4,0</td></tr> <tr><td>Fe</td><td>2,0</td><td>1E+03</td><td>3,5</td><td>20</td></tr> <tr><td>> 1E+03</td><td></td><td>7E+05</td><td>3,5</td><td>4,0</td></tr> <tr><td>Hf</td><td>0,03</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Hg</td><td>0,15</td><td>10,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 10,0</td><td></td><td>1,5E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>K</td><td>8,0</td><td>5E+03</td><td>3,5</td><td>20</td></tr> <tr><td>> 5E+03</td><td></td><td>2,8E+05</td><td>3,5</td><td>6,0</td></tr> <tr><td>La</td><td>0,02</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Mo</td><td>0,5</td><td>10,0</td><td>5,0</td><td>30</td></tr> <tr><td>> 10,0</td><td></td><td>3,3E+05</td><td>4,0</td><td>5,0</td></tr> <tr><td>Na</td><td>1,0</td><td>1E+03</td><td>3,5</td><td>10</td></tr> <tr><td>> 1E+03</td><td></td><td>1E+05</td><td>3,5</td><td>4,0</td></tr> <tr><td>Nd</td><td>0,5</td><td>10,0</td><td>4,0</td><td>20</td></tr> <tr><td>> 10,0</td><td></td><td>1E+03</td><td>4,0</td><td>6,0</td></tr> <tr><td>Rb</td><td>0,6</td><td>20,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 20,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Sb</td><td>0,01</td><td>5,0</td><td>3,5</td><td>10</td></tr> <tr><td>> 5,0</td><td></td><td>5E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Sc</td><td>0,005</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Se</td><td>0,3</td><td>10,0</td><td>3,5</td><td>20</td></tr> </tbody> </table>		Od/From mg/kg	Do/To mg/kg	Od/From u_c (%)	Do/To u_c (%)	Ag	0,1	5,0	3,5	20	> 5,0		1E+04	3,5	4,0	As	0,03	5,0	3,5	10	> 5,0		5E+05	3,5	4,0	Au	0,0004	0,050	3,5	20	> 0,050		1E+04	3,5	4,0	Br	0,1	5,0	3,5	20	> 5,0		1E+04	3,5	4,0	Ca	200	1E+04	3,5	20	> 1E+04		4E+05	3,5	5,0	Ce	0,2	10,0	3,5	20	> 10,0		1E+03	3,5	4,0	Co	0,02	10,0	3,5	20	> 10,0		1E+03	3,5	4,0	Cr	0,5	20,0	3,5	20	> 20,0		1E+03	3,5	4,0	Cs	0,03	5,0	3,5	20	> 5,0		1E+03	3,5	4,0	Eu	0,01	2,0	3,5	20	> 2,0		1E+02	3,5	4,0	Fe	2,0	1E+03	3,5	20	> 1E+03		7E+05	3,5	4,0	Hf	0,03	5,0	3,5	20	> 5,0		1E+03	3,5	4,0	Hg	0,15	10,0	3,5	20	> 10,0		1,5E+03	3,5	4,0	K	8,0	5E+03	3,5	20	> 5E+03		2,8E+05	3,5	6,0	La	0,02	5,0	3,5	20	> 5,0		1E+03	3,5	4,0	Mo	0,5	10,0	5,0	30	> 10,0		3,3E+05	4,0	5,0	Na	1,0	1E+03	3,5	10	> 1E+03		1E+05	3,5	4,0	Nd	0,5	10,0	4,0	20	> 10,0		1E+03	4,0	6,0	Rb	0,6	20,0	3,5	20	> 20,0		1E+03	3,5	4,0	Sb	0,01	5,0	3,5	10	> 5,0		5E+03	3,5	4,0	Sc	0,005	5,0	3,5	20	> 5,0		1E+03	3,5	4,0	Se	0,3	10,0	3,5	20	tekoči in trdni materiali: tla, sedimenti, minerali, blata čistilnih naprav, <i>liquid and solid materials: soil, sediments, ores, sewage sludge</i>
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Hg	0,15	10,0	3,5	20																																																																																																																																																																																																																													
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Rb	0,6	20,0	3,5	20																																																																																																																																																																																																																													
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Tip obsega: **fiksn** / Type of scope: **fixed**

 Mesto izvajanja: v **laboratoriju** / Site: **in the laboratory**

 Področja preskušanja glede na vrsto preskušanja: **kemija** / Testing fields with reference to the type of test: **chemistry**

 Področja preskušanja glede na vrsto preskušanca: **biološki vzorci (klinični in patohistološki vzorci, vzorci živalskega okolja); kemikalije, kemični proizvodi, kozmetika; gradbeni proizvodi, materiali in konstrukcije (beton, kamnine in zemljine, opeka in keramika); industrijski materiali in proizvodi (kovine, polimeri); okolje in vzorci iz okolja (vode, tla, odpadki, okolje); živila in vzorci prehranske verige; goriva in maziva; papir, karton in embalaža; plastika in guma; steklo, keramika; kmetijski proizvodi; les** / Testing fields with reference to the type of test item: **biological samples (clinical and pathohistological samples, samples from animal environment); chemicals, chemical products, cosmetics; construction products, materials and structures (concrete, rock and soil, brick and ceramics); industrial materials and products (metals, polymers); environment and samples from the environment (waters, ground, wastes, environmental); foodstuffs and food chain samples; fuels and lubricants; paper, paperboard and packaging; plastic and rubber; glass, ceramics; agricultural products; wood**

Št. No.	Oznaka dokumenta, ki opisuje metodo preskušanja <i>Identification of the document, describing the testing method</i>	Preskušana lastnost oziroma parameter <i>Characteristic or parameter tested</i>	Opredelevitev preskusa (vrsta, princip oziroma tehnika preskusa) <i>Description of test (type of test, test principle or technique)</i>	Območje preskušanja <i>Range of testing</i>	Preskušanci (materiali, proizvodi) <i>Items tested (materials, products)</i>																																																																																																																																																																															
				<table border="1"> <tr><td>> 10,0</td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Sm</td><td>0,005</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Sr</td><td>30</td><td>1E+02</td><td>5,0</td><td>20</td></tr> <tr><td>> 1E+02</td><td>6,2E+03</td><td>4,0</td><td>10</td></tr> <tr><td>Ta</td><td>0,01</td><td>1,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 1,0</td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Tb</td><td>0,01</td><td>1,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 1,0</td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Th</td><td>0,02</td><td>10,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 10,0</td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>U</td><td>0,02</td><td>10,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 10,0</td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Yb</td><td>0,01</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Zn</td><td>0,8</td><td>1E+02</td><td>3,5</td><td>20</td></tr> <tr><td>> 1E+02</td><td>1E+05</td><td>3,5</td><td>4,0</td></tr> <tr><td>Zr</td><td>10,0</td><td>1E+02</td><td>3,5</td><td>20</td></tr> <tr><td>> 1E+02</td><td>1E+04</td><td>3,5</td><td>7,0</td></tr> </table> <p>Opomba/Note: Negotovost rezultata za vse vzorce, odvisna od koncentracije in vrste vzorca. <i>Uncertainty of result for all samples, depending of concentrations and matrix.</i></p> <p>-----</p> <p>Območje preskušanja Relativna kombinirana standardna negotovost (u_c), % <i>Range of testing Relative combined standard uncertainty (u_c), %</i></p> <table border="1"> <thead> <tr> <th></th> <th>Od/From mg/kg</th> <th>Do/To mg/kg</th> <th>Od/From u_c (%)</th> <th>Do/To u_c (%)</th> </tr> </thead> <tbody> <tr><td>Ag</td><td>0,04</td><td>2,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 2,0</td><td></td><td>2E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>As</td><td>0,02</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td></td><td>4E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Au</td><td>0,001</td><td>0,050</td><td>3,5</td><td>20</td></tr> <tr><td>> 0,050</td><td></td><td>1E+02</td><td>3,5</td><td>4,0</td></tr> <tr><td>Br</td><td>0,05</td><td>2,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 2,0</td><td></td><td>3E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Ca</td><td>100</td><td>5E+03</td><td>4,0</td><td>20</td></tr> <tr><td>> 5E+03</td><td></td><td>1,3E+05</td><td>4,0</td><td>10</td></tr> <tr><td>Ce</td><td>0,05</td><td>2,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 2,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Co</td><td>0,01</td><td>2,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 2,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Cr</td><td>0,08</td><td>5,0</td><td>3,5</td><td>20</td></tr> <tr><td>> 5,0</td><td></td><td>1E+03</td><td>3,5</td><td>4,0</td></tr> <tr><td>Cs</td><td>0,006</td><td>1,0</td><td>3,5</td><td>20</td></tr> </tbody> </table>	> 10,0	1E+03	3,5	4,0	Sm	0,005	5,0	3,5	20	> 5,0	1E+03	3,5	4,0	Sr	30	1E+02	5,0	20	> 1E+02	6,2E+03	4,0	10	Ta	0,01	1,0	3,5	20	> 1,0	1E+03	3,5	4,0	Tb	0,01	1,0	3,5	20	> 1,0	1E+03	3,5	4,0	Th	0,02	10,0	3,5	20	> 10,0	1E+03	3,5	4,0	U	0,02	10,0	3,5	20	> 10,0	1E+03	3,5	4,0	Yb	0,01	5,0	3,5	20	> 5,0	1E+03	3,5	4,0	Zn	0,8	1E+02	3,5	20	> 1E+02	1E+05	3,5	4,0	Zr	10,0	1E+02	3,5	20	> 1E+02	1E+04	3,5	7,0		Od/From mg/kg	Do/To mg/kg	Od/From u _c (%)	Do/To u _c (%)	Ag	0,04	2,0	3,5	20	> 2,0		2E+03	3,5	4,0	As	0,02	5,0	3,5	20	> 5,0		4E+03	3,5	4,0	Au	0,001	0,050	3,5	20	> 0,050		1E+02	3,5	4,0	Br	0,05	2,0	3,5	20	> 2,0		3E+03	3,5	4,0	Ca	100	5E+03	4,0	20	> 5E+03		1,3E+05	4,0	10	Ce	0,05	2,0	3,5	20	> 2,0		1E+03	3,5	4,0	Co	0,01	2,0	3,5	20	> 2,0		1E+03	3,5	4,0	Cr	0,08	5,0	3,5	20	> 5,0		1E+03	3,5	4,0	Cs	0,006	1,0	3,5	20	<p>-----</p> <p>tekoči in trdni materiali: biološki vzorci, hrana, goriva, polimeri, <i>liquid and solid materials: biological samples, foodstuffs, fuels, polymers</i></p>
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Cs	0,006	1,0	3,5	20																																																																																																																																																																																



Tip obsega: **fiksni** / Type of scope: **fixed**

Mesto izvajanja: v **laboratoriju** / Site: **in the laboratory**

Področja preskušanja glede na vrsto preskušanja: **kemija** / Testing fields with reference to the type of test: **chemistry**

Področja preskušanja glede na vrsto preskušanca: **biološki vzorci (klinični in patohistološki vzorci, vzorci živalskega okolja); kemikalije, kemični proizvodi, kozmetika; gradbeni proizvodi, materiali in konstrukcije (beton, kamnine in zemljine, opeka in keramika); industrijski materiali in proizvodi (kovine, polimeri); okolje in vzorci iz okolja (vode, tla, odpadki, okolje); živila in vzorci prehranske verige; goriva in maziva; papir, karton in embalaža; plastika in guma; steklo, keramika; kmetijski proizvodi; les** / Testing fields with reference to the type of test item: **biological samples (clinical and pathohistological samples, samples from animal environment); chemicals, chemical products, cosmetics; construction products, materials and structures (concrete, rock and soil, brick and ceramics); industrial materials and products (metals, polymers); environment and samples from the environment (waters, ground, wastes, environmental); foodstuffs and food chain samples; fuels and lubricants; paper, paperboard and packaging; plastic and rubber; glass, ceramics; agricultural products; wood**

Št. No.	Oznaka dokumenta, ki opisuje metodo preskušanja <i>Identification of the document, describing the testing method</i>	Preskušana lastnost oziroma parameter <i>Characteristic or parameter tested</i>	Opredelevitev preskusa (vrsta, princip oziroma tehnika preskusa) <i>Description of test (type of test, test principle or technique)</i>	Območje preskušanja <i>Range of testing</i>	Preskušanci (materiali, proizvodi) <i>Items tested (materials, products)</i>	
				> 1,0 1E+02 3,5 4,0		
			Eu	0,001 1,0 3,5 20		
			Fe	> 1,0 1E+02 3,5 4,0 4 5E+02 3,5 20		
			Hf	> 5E+02 5E+04 3,5 4,0 0,01 1,0 3,5 20		
			Hg	> 1,0 1E+02 3,5 4,0 0,04 1,0 3,5 20		
			K	> 1,0 1E+02 3,5 4,0 4,0 1E+03 3,5 20		
			La	> 1E+03 1E+05 3,5 5,0 0,003 1,0 3,5 20		
			Mo	> 1,0 1E+02 3,5 4,0 0,1 5,0 3,5 20		
			Na	> 5,0 1E+02 3,5 4,0 0,06 50,0 3,5 20		
			Nd	> 50,0 1E+05 3,5 4,0 0,2 10,0 3,5 20		
			Rb	> 10,0 1E+02 3,5 4,0 0,2 10,0 3,5 20		
			Sb	> 10,0 5E+02 3,5 4,0 0,002 1,0 3,5 20		
			Sc	> 1,0 8E+02 3,5 4,0 0,0002 1,0 3,5 20		
			Se	> 1,0 1E+02 3,5 4,0 0,05 5,0 3,5 20		
			Sm	> 5,0 1E+02 3,5 4,0 0,001 1,0 3,5 20		
			Sr	> 1,0 1E+02 3,5 4,0 0,5 1E+02 5,0 20		
			Ta	> 1E+02 1E+03 5,0 10 0,004 1,0 3,5 20		
			Tb	> 1,0 1E+02 3,5 4,0 0,004 1,0 3,5 20		
			Th	> 1,0 1E+02 3,5 4,0 0,01 1,0 3,5 20		
			U	> 1,0 1E+02 3,5 4,0 0,01 1,0 3,5 20		
			Yb	> 1,0 1E+02 3,5 4,0 0,005 1,0 3,5 20		
			Zn	> 1,0 1E+02 3,5 4,0 0,02 1E+02 3,5 20		
			Zr	> 1E+02 1,5E+04 3,5 4,0 2,0 50,0 3,5 20		
				> 50,0 1E+03 3,5 7,0		
			Opomba/Note: Negotovost rezultata za vse vzorce, odvisna od koncentracije in vrste vzorca. <i>Uncertainty of result for all samples, depending of concentrations and matrix.</i>			

3.2.2 Odsek za znanosti o okolju: Skupina za organsko biogeokemijo, Brinje 40, 1262 Dol pri Ljubljani

Tabela / Table 3

Tip obsega: fiksni / Type of scope: fixed Mesto izvajanja: v laboratoriju / Site: in the laboratory Področja preskušanja glede na vrsto preskušanja: kemija / Testing fields with reference to the type of test: chemistry Področja preskušanja glede na vrsto preskušanca: živila in vzorci prehranske verige / Testing fields with reference to the type of test item: foodstuffs and food chain samples					
Št. No.	Oznaka dokumenta, ki opisuje metodo preskušanja <i>Identification of the document, describing the testing method</i>	Preskušana lastnost oziroma parameter <i>Characteristic or parameter tested</i>	Opredelitev preskusa (vrsta, princip oziroma tehnika preskusa) <i>Description of test (type of test, test principle or technique)</i>	Območje preskušanja <i>Range of testing</i>	Preskušanci (materiali, proizvodi) <i>Items tested (materials, products)</i>
5.	SDN-O2-ORG(01) interna metoda, 5. izdaja <i>in-house method, version 5</i>	Razmerje stabilnih izotopov ogljika ($^{13}\text{C}/^{12}\text{C}$) izraženo z δ -vrednostjo <i>Carbon stable isotope ratio ($^{13}\text{C}/^{12}\text{C}$) expressed in δ-notation</i>	Masna spektrometrija za določanje razmerja stabilnih izotopov lahkih elementov (IRMS) za hlapne organske spojine <i>Isotope Ratio Mass Spectrometry (IRMS) for volatile organic compounds</i>	Absolutna razširjena negotovost <i>Absolute expanded uncertainty</i> U = 0,4 ‰ (k=2)	živila; <i>foodstuffs</i>
6.	SDN-O2-ORG(02) interna metoda, 5. izdaja <i>in-house method, version 5</i>	Razmerje stabilnih izotopov kisika ($^{18}\text{O}/^{16}\text{O}$) izraženo z δ -vrednostjo <i>Oxygen stable isotope ratio ($^{18}\text{O}/^{16}\text{O}$) expressed in δ-notation</i>	Masna spektrometrija za določanje razmerja stabilnih izotopov lahkih elementov (IRMS) <i>Isotope Ratio Mass Spectrometry (IRMS)</i>	Absolutna razširjena negotovost U = (0,5 – 0,6) ‰ (vino in mošt), (k=2) U = (0,5 – 0,6) ‰ (ostala živila), (k=2) <i>Absolute expanded uncertainty</i> U = (0,5 – 0,6) ‰ (wine and must), (k=2) U = (0,5 – 0,6) ‰ (other foodstuff), (k=2)	voda v živilih; <i>water in foodstuffs</i>

Opombe / Notes:

- V vseh točkah podrobnega obsega akreditacije, pri katerih v rubriki "**Območje preskušanja**" ni navedenih podatkov, veljajo določila posameznih standardov oziroma drugih javno dostopnih dokumentov, ki opisujejo metodo.
*In all columns of the scope of accreditation where the cells under "**Range of testing**" are empty, the provisions of the relevant standards or other publicly available documents describing testing methods should apply.*

Datum / Date: 1. junij 2023

 Direktor / Director
 Dr. Boštjan Godec

 Kopija priloge k akreditacijski listini za objavo na spletnem mestu.
 Podpisani original priloge na vpogled na sedežu SA.

 Copy of Annex to the accreditation certificate for web publishing.
 Signed original of Annex available for consultation at the SA head office.