



WASTE ASSESSMENT

CLIENT:

JP VOKA SNAGA d.o.o.

EWG NUMBER:

19 12 12

Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

LF-B

Title: WASTE ASSESMENT for company JP VOKA SNAGA d.o.o., EWC number 19 12 12 - Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 - LF-B

Contractor: NATIONAL LABORATORY OF HEALTH, ENVIRONMENT AND FOOD
ENVIRONMENT AND HEALTH CENTRE
DEPARTMENT OF GROUND AND SURFACE WATER, WASTE AND SOIL
WASTE AND SOIL UNIT
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2000 MARIBOR

Declaration: *During the assessment of the waste, all the available data were used and considered, particularly those relating to the source of the waste (for the waste that resulted from a repeated and determinable production process, the deviations of the parameter values were also evaluated for the waste that resulted from normal changes in the waste creation process). In the process of waste investigation there were no available data from which it could be inferred that other substances had been mixed in with the waste and in doing so had affected the properties of the waste. This assessment is valid for the inspected and sampled volume of the waste.*

Contracting authority: JP VOKA SNAGA d.o.o.
VODOVODNA CESTA 90
1000 LJUBLJANA

Purchase order no.: Contract no. VKS-58/22

Date of contract: 14.07.2022

Report number: 2830-22/104377-23/55130-23/162

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1 Introduction

Based on the order of JP VOKA SNAGA d.o.o., we carried out a confirmation of the waste classification number with an analysis pursuant to the Regulation of wastes (Official Gazette RS, No. 77/22). For the purpose of confirming the waste number, we checked hazardous properties of the waste from HP1 to HP15.

2 Sampling method

The waste was sampled in accordance with SIST EN 14899:2006 at first inspection. Description of sampling is in Annex

3 Data on the waste holder, type and source of the waste

3.1 Waste holder: JP VOKA SNAGA d.o.o.

Address: Vodovodna cesta 90

Post code: 1000 Ljubljana

Activity code: E36.000 – Collection, purification and distribution of water

Registration no.: 5046688000

3.2 Waste classification number: **19 12 12**

Waste name: Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

3.3 Description of waste:

The waste is variously coloured with a weak smell of communal waste and dampness. It is solid, heterogeneous and moist, with particle size under 250 mm. Net calorific value of the waste ranges between 15 -20 MJ/kg of dry matter. Dry matter content is 70-80 %, with the rest of the volatiles being water – other volatile substances are not expected to occur in this type of the waste. Basic mass fractions of waste are represented as follows: paper 15-35 %, plastic particles 15-40 %, textile 20-45 %, wood 0-10 % and other impurities 5-20 %. Photograph of waste and description of sampling (in Slovenian) are presented in Annex 3 of this assessment.

3.4 Source facility or location of the waste:

Waste holder: JP VOKA SNAGA d.o.o. - RCERO Barje

Address: Cesta dveh cesarjev 101

Post code: 1000 Ljubljana

3.5 Wastegeneration description:

Waste entering the process:

- MMW – mixed municipal waste → EWC 20 03 01
- Residual waste from service activities → EWC 20 03 01
- Magnetic metal → EWC 19 12 02
- Non-magnetic metal → EWC 19 12 03
- LFB – light fraction B → EWC 19 12 12
- LFA – light fraction A → EWC 19 12 12

Light fraction with EWC code 19 12 12 in RCERO Ljubljana is produced during the process of mechanical biological treatment of mixed municipal waste (MMW) and bulky waste. About 50% of collected waste with EWC numbers 20 03 01, 20 03 07 and 20 01 38, collected in the contribution area of RCERO Ljubljana, enters the process. In this process, two categories of EWC 19 12 12 waste are produced, namely Light fraction A (LF-A) and Light fraction B (LF-B), which have different caloric value and particle size.

Mixed municipal waste is processed at the RCERO Ljubljana plant according to procedures D8 and D9. Waste collection trucks deliver MMW to a deep bunker with approx. 5,000 m³ volume. Two bridge cranes dose MMW into two hoppers for mechanical pre-treatment of MKO. The filling hoppers have a movable bottom and dose MKO into the primary crushers.

The crushed MMW is then transported to a drum sieve, which separates crushed MMW into 3 fractions:

- fine fraction (<80 mm)

A size fraction of approx. 40 mm to 80 mm is transported through a magnetic metal separator to a star sieve. Here it is separated into two sizes – the fraction up to 40 mm in size which is further processed anaerobically, the fraction size 40 to 80 mm is further used as a structural material in stabilization or is directly stored in LF-B1 (LF-B) storage.

- medium fraction (80mm do 250 mm)

Ferrous and non-ferrous metals which are collected on different belts and then transported to containers, are first separated from the medium-sized fraction. The remaining material is transported back to the deep bunker, and from the deep bunker via the hopper to the sorting line.

- large fraction (>250 mm)

The fraction over 250 mm in size is transported to the bulky waste storage tank, where it is then crushed in the bulky waste crusher, and then added to the sorting line through the hopper. The sorting line includes automatic and manual sorting. It starts with a ballistic separator that separates three-dimensional (3D) material, two-dimensional material and (2D) and particles smaller than 40 mm. Particles smaller than 40 mm are transported directly to the LF-B warehouse.

The 2D material travels in the direction of the air separator.

In the air separator, the very light fraction is then separated on a belt into a fine crusher with a screen, from which we obtain the fine light fraction LF-A, while the rest of the material travels through the coarse crusher and on to the storage of the light fraction called LF-B.

The LF-A fine fraction from the fine crusher travels on conveyor belts and with a reversible belt in the light fraction store it can be directed either to the LF-A light fraction store or it can continue its way on conveyor belts through the belt dryer and then back to the light fraction LF-A storage.

The 3D fraction is transported through infrared (NIR) separators, which separate tetra pack and PET (optional paper) from this fraction. The rest of the 3D material is then transported through

a fine crusher with a screen to the LF-A warehouse.

The storage spaces of LF-A and LF-B are emptied with the help of wheel loaders, which load each fraction directly onto transporting trucks for removal or further processing.

LF-A and LF-B in bulk condition can be compressed into round bales with a diameter of 1.3m for storage or easier transport, which are wrapped with plastic film using a baling machine.

The subject of the application is waste 19 12 12 – Light fraction (LF-B, particle size 0-250 mm) generated during the D9 treatment process.

3.5.1 Annual quantity of waste: 60.000 tons

3.5.2 Quantity of waste inspected: ≈120 m³

3.5.3 Sample Lab no.: 23/55130

4 Waste properties

4.1 State of waste at room temperature:

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> Liquid | <input type="checkbox"/> Homogenous | <input type="checkbox"/> Powder-like | <input type="checkbox"/> Dry |
| <input type="checkbox"/> Dense liquid/paste-like | <input checked="" type="checkbox"/> Non-homogenous | <input checked="" type="checkbox"/> Grained/bulky | <input checked="" type="checkbox"/> Moist |
| <input type="checkbox"/> Sludge-like | <input type="checkbox"/> Dispersion | <input type="checkbox"/> In a lump | <input type="checkbox"/> Hygroscopic |
| <input checked="" type="checkbox"/> Solid | <input type="checkbox"/> Emulsion | <input type="checkbox"/> Wrapped | |

4.2 Hazardous properties (HP1–HP15)*:

☐ YES ☒ NO

* Properties that make the waste classified as hazardous waste (in accordance with the waste regulation).

- | | | | |
|------------------------------|------------------------------|-------------------------------|-------------------------------|
| <input type="checkbox"/> HP1 | <input type="checkbox"/> HP5 | <input type="checkbox"/> HP9 | <input type="checkbox"/> HP13 |
| <input type="checkbox"/> HP2 | <input type="checkbox"/> HP6 | <input type="checkbox"/> HP10 | <input type="checkbox"/> HP14 |
| <input type="checkbox"/> HP3 | <input type="checkbox"/> HP7 | <input type="checkbox"/> HP11 | <input type="checkbox"/> HP15 |
| <input type="checkbox"/> HP4 | <input type="checkbox"/> HP8 | <input type="checkbox"/> HP12 | |

4.3 Colour: Various

4.4 Smell: ☐ Strong ☒ Faint ☐ none ☐ odour: waste and dampness

4.5 Reactivity:

- | | | |
|---|---|--|
| <input type="checkbox"/> Inert | <input type="checkbox"/> Reacts with acid/lye | <input type="checkbox"/> Incombustible |
| <input type="checkbox"/> Reacts with oxygen | <input type="checkbox"/> Accelerates combustion | <input type="checkbox"/> Biodegradable |
| <input type="checkbox"/> Reacts with water | <input type="checkbox"/> Gas forming | |

4.6 Solubility:☐ YES ☒ NO

Justification: The waste is poorly soluble in water. Solubility of the waste in other solvents is not expected, as poorly soluble minerals are predominantly present.

4.7 Physical properties:

Density or bulk density at room temperature: / kg/m³

Range of particle size: 0 mm – 250 mm

4.8 Description of the preliminary processing of waste or the justification for the omission of preliminary waste processing:

Justification: The processing procedure is described in chapter 3.5.

4.9 Safety precautions:**4.9.1 Handling in temporary storage:**

Technical safety precautions: **Store indoors in closed containers.**

Personal protective equipment: **Personal means of protection (clothing, gloves, footwear).**

Fire and explosion safety: **Waste is flammable but will not self-ignite.**

Water pollution protection: **Prevent contact with water and mechanically remove material in case of scattering.**

4.9.2 Accident and fire prevention:

Measures in case of scattering: **Mechanically collect to containers using appropriate tools.**

Appropriate extinguishing agent: **All extinguishing agents are suitable.**

Non-appropriate extinguishing agent: /

Appropriate binding agents: /

4.9.3 Additional safety precaution considering management of waste:

No additional safety precautions are required

5 Waste number classification determination

The waste is classified into groups according to the classification list of waste as defined in Article 4 of the Regulation on waste Official Gazette RS No. 77/22.

Individual waste, given the nature of the occurrence be classified in the group and sub-group of waste with the waste classification list, as provided in Article 4 of the Regulation on waste Official Gazette No. RS 77/22, so that the waste is assigned with classification number of waste. If the waste under Article 5 of the Regulation on waste Official Gazette RS No. 77/22 classified as hazardous or non-hazardous waste, it should be classified as hazardous waste unless the data on the composition of the waste and the concentration of hazardous substances or on the basis of its analysis shown to have none of the hazardous properties. Waste not showing dangerous properties as the composition does not contain any hazardous substances. The study of the hazardous properties can be found in Annex 1 of this assessment.

According to the source and composition, the waste in question has been classified based on the classification list contained in the Regulation of wastes, Official Gazette RS No. 77/22 into waste group:

- 19 Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use
- 19 12 Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, palletising) not otherwise specified
- 19 12 12 Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

6 Suitability for combustion as solid recovered fuel

Due to hierarchy of waste removal procedures, this waste is suitable for removal by combustion, rather than depositing. Other removal processes may have higher priority, but are unsuitable for this type of waste.

7 Annex

1. Report on the study of hazardous waste properties
2. Test report: 23/55130
3. Summarized analysis data LF-B (2017-2023)

8 List of references

1. Regulation on waste Official Gazette RS No. 77/22

END OF REPORT

ANNEX 1: Report on the study of hazardous waste properties (according to the criteria from Annex 3 of the Waste Regulation (Official gazette RS 77/22)).

Note: Hazard class and hazard category symbols and symbols for hazard statements for waste components for the classification of waste used in Annex III of Directive 2008/98/EC are summarized according to Regulation (EC) no. 1272/2008 of the European Parliament and the Council of 16 December 2008 on the classification, labelling and packaging of substances and mixtures, on the amendment and repeal of Directives 67/548/EEC and 1999/45/EC and the amendment of Regulation (EC) no. 1907/2006 (OJ L No. 353, 31/12/2008, p. 1), last amended by Commission Delegated Regulation (EU) 2021/1962 of 12 August 2021 amending Annex VI to Regulation (EC) No. 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (OJ L No. 400, 12 November 2021, p. 16), (hereinafter: Regulation (EC) No. 1272/2008).

Property: **HP1 »Explosive«** **Has HP 1** ☐ Yes ☒ No

Description: Waste which is capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic waste, explosive organic peroxide waste and explosive self-reactive waste is included..

Determination: When a waste contains one or more substances classified by one of the hazard class and category codes and hazard statement codes shown in Table 1, the waste shall be assessed for HP 1, where appropriate and proportionate, according to test methods. If the presence of a substance, a mixture or an article indicates that the waste is explosive, it shall be classified as hazardous by HP 1.

Table 1: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents for the classification of wastes as hazardous by HP 1:

Hazard Class and Category Code(s)	Hazard statements Code(s)
Unst. Expl.	H 200
Ekspl. 1.1	H 201
Ekspl. 1.2	H 202
Ekspl. 1.3	H 203
Ekspl. 1.4	H 204
Self-react. A	H 240
Org. Perox. A	
Self-react. B	H 241
Org. Perox. B	

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 1.

Property: HP2 »Oxidizing«**Has HP 2**☐ Yes ☒ No

Description: Waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials.

Determination: When a waste contains one or more substances classified by one of the hazard class and category codes and hazard statement codes shown in Table 2, the waste shall be assessed for HP 2, where appropriate and proportionate, according to test methods. If the presence of a substance indicates that the waste is oxidising, it shall be classified as hazardous by HP 2.

Table 2: Hazard Class and Category Code(s) and Hazard statement Code(s) for the classification of wastes as hazardous by HP 2:

Hazard Class and Category Code(s)	Hazard statements Code(s)
Ox. Gas 1	H 270
Ox. Liq. 1	H 271
Ox. Sol. 1	
Ox. Liq. 2, Ox. Liq. 3	H 272
Ox. Sol. 2 Ox. Sol 3	

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 2.

Property: HP3 »Flammable«**Has HP 3**☐ Yes ☒ No**Description:**

- Flammable liquid waste – liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and ≤ 75 °C;
- Flammable pyrophoric liquid and solid waste – solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air;
- Flammable solid waste – solid waste which is readily combustible or may cause or contribute to fire through friction;
- Flammable gaseous waste – gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa;
- Water reactive waste – waste which, in contact with water, emits flammable gases in dangerous quantities;
- Other flammable waste – flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.

Determination: When a waste contains one or more substances classified by one of the following hazard class and category codes and hazard statement codes shown in Table 3, the waste shall be assessed, where appropriate and proportionate, according to test methods. If the presence of a substance indicates that the waste is flammable, it shall be classified as hazardous by HP 3.

Table 3: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents for the classification of wastes as hazardous by HP 3

Hazard Class and Category Code(s)	Hazard statements Code(s)
Flam. Gas 1	H220
Flam. Gas 2	H221
Aerosol 1	H222
Aerosol 2	H223
Flam. Liq. 1	H224
Flam. Liq. 2	H225
Flam. Liq. 3	H226
Flam. Sol.1	H228
Flam. Sol.2	
Self-react CD	H242
Self-react EF	
Org. Perox. 1 CD	
Org. Perox. 1 EF	
Pyr. Liq. 1	H250
Pyr. Sol. 1	
Self-heat. 1	H251
Self-heat. 2	H252
Water-react. 1	H 260
Water-react. 2	H 261
Water-react. 3	

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 3.

Property: HP4 »Irritant – skin irritation and eye damage«

Has HP 4 ☐ Yes ☒ No

Description: Waste which on application can cause skin irritation or damage to the eye.

Determination: When a waste contains one or more substances in concentrations above the cut-off value, that are classified by one of the following hazard class and category codes and hazard statement codes and one or more of the following concentration limits is exceeded or equalled, the waste shall be classified as hazardous by HP 4.

The cut-off value for consideration in an assessment for Skin corr. 1A (H314), Skin irrit. 2 (H315), Eye dam. 1 (H318) and Eye irrit. 2 (H319) is 1 %

If the sum of the concentrations of all substances classified as Skin corr. 1A (H314) exceeds or equals 1 %, the waste shall be classified as hazardous according to HP 4.

If the sum of the concentrations of all substances classified as H318 exceeds or equals 10 %, the waste shall be classified as hazardous according to HP 4.

If the sum of the concentrations of all substances classified H315 and H319 exceeds or equals 20 %, the waste shall be classified as hazardous according to HP 4.

Note that wastes containing substances classified as H314 (Skin corr.1A, 1B or 1C) in amounts greater than or equal to 5 % will be classified as hazardous by HP 8. HP 4 will not apply if the waste is classified as HP 8.

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class and category symbols and symbols for hazard sentences, or would exceed the limit value.

Property: HP5 »Specific Target Organ Toxicity (STOT) / Aspiration Toxicity«

Has HP 5 ☐ Yes ☒ No

Description: Waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration.

Determination: When a waste contains one or more substances classified by one or more of the following hazard class and category codes and hazard statement codes shown in Table 4, and one or more of the concentration limits in Table 4 is exceeded or equalled, the waste shall be classified as hazardous according to HP 5. When substances classified as STOT are present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 5.

When a waste contains one or more substances classified as Asp. Tox. 1 and the sum of those substances exceeds or equals the concentration limit, the waste shall be classified as hazardous by HP 5 only where the overall kinematic viscosity (at 40 °C) does not exceed 20.5 mm²/s.

Table 4: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 5

Hazard Class and Category Code(s)	Hazard statements Code(s)	Concentration limit
STOT SE 1	H370	1 %
STOT SE 2	H371	10 %
STOT SE 3	H335	20 %
STOT RE 1	H372	1 %
STOT RE 2	H373	10 %
Asp. Tox. 1	H304	10 %

Observations:

Based on the review of the waste generation technology, the review of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 4 and at the same time exceed the given limit value.

Property: HP6 »Acute Toxicity«

Has HP 6 ☐ Yes ☒ No

Description: Waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure.

Determination: If the sum of the concentrations of all substances contained in a waste, classified with an acute toxic hazard class and category code and hazard statement code given in Table 5, exceeds or equals the threshold given in that table, the waste shall be classified as hazardous by HP 6. When more than one substance classified as acute toxic is present in a waste, the sum of the concentrations is required only for substances within the same hazard category.

The following cut-off values shall apply for consideration in an assessment:

- For Acute Tox. 1, 2 or 3 (H300, H310, H330, H301, H311, H331): 0.1 %;
- For Acute Tox. 4 (H302, H312, H332): 1 %.

Table 5: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 6.

Hazard Class and Category Code(s)	Hazard statements Code(s)	Concentration limit
Acute Tox.1 (Oral)	H300	0,1 %
Acute Tox. 2 (Oral)		0,25 %
Acute Tox. 3 (Oral)	H301	5 %
Acute Tox 4 (Oral)	H302	25 %
Acute Tox.1 (Dermal)	H310	0,25 %
Acute Tox.2 (Dermal)		2,5 %
Acute Tox. 3 (Dermal)	H311	15 %
Acute Tox 4 (Dermal)	H312	55 %
Acute Tox 1 (Inhal.)	H330	0,1 %
Acute Tox.2 (Inhal.)	H330	0,5 %
Acute Tox. 3 (Inhal.)	H331	3,5 %
Acute Tox. 4 (Inhal.)	H332	22,5 %

Observations:

Based on the review of the waste generation technology, the review of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 5 and at the same time exceed the given limit value.

Property: HP7 – Carcinogenic

Has HP 7

☐ Yes ☒ No

Description: Waste which induces cancer or increases its incidence.

Determination: When a waste contains a substance classified by one of the following hazard class and category codes and hazard statement codes and exceeds or equals one of the following concentration limits shown in Table 6, the waste shall be classified as hazardous by HP 7. When more than one substance classified as carcinogenic is present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 7.

Table 6: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 7:

Hazard Class and Category Code(s)	Hazard statements Code(s)	Concentration limit
Carc. 1A	H350	0,1 %
Carc. 1B		
Carc. 2	H351	1,0 %

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the hazard class labels and hazard statement labels shown in Table 6 and at the same time exceed the given limit value.

Property: HP8 »Corrosive«**Has HP 8**☐ Yes ☒ No**Description:** Waste which on application can cause skin corrosion.

Determination: When a waste contains one or more substances classified as Skin corr.1A, 1B or 1C (H314) and the sum of their concentrations exceeds or equals 5 %, the waste shall be classified as hazardous by HP 8.

The cut-off value for consideration in an assessment for Skin corr. 1A, 1B, 1C (H314) is 1.0 %.

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the above-mentioned hazard class labels and labels for hazard statements and at the same time exceed the given limit value.

Property: HP9 »Infectious«**Has HP 9**☐ Yes ☒ No

Description: Waste containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in man or other living organisms

Waste has HP9 if it contains:

- microorganisms dangerous to human health or
- Infectious material of animal origin.

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could attribute HP 9 to the waste.

Property: HP10 »Toxic for reproduction« **Has HP 10** ☐ Yes ☒ No

Description: Waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring.

Determination: When a waste contains a substance classified by one of the following hazard class and category codes and hazard statement codes and exceeds or equals one of the following concentration limits shown in Table 7, the waste shall be classified hazardous according to HP 10. When more than one substance classified as toxic for reproduction is present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 10.

Table 7: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 10

Hazard Class and Category Code(s)	Hazard statements Code(s)	Concentration limit
Repr. 1A	H360	0,3 %
Repr. 1B		
Repr. 2	H361	3,0 %

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the labels for hazard statements and the labels for additional hazard statements shown in Table 7 and at the same time exceeded the limit value.

Property: HP11 »Mutagenic« **Has HP 11** ☐ Yes ☒ No

Description: Waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell

Determination: When a waste contains a substance classified by one of the following hazard class and category codes and hazard statement codes and exceeds or equals one of the following concentration limits shown in Table 8, the waste shall be classified as hazardous according to HP 11. When more than one substance classified as mutagenic is present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 11.

Table 8: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 11:

Hazard Class and Category Code(s)	Hazard statements Code(s)	Concentration limit
Muta. 1A	H340	0,1 %
Muta. 1B		
Muta. 2	H341	1,0 %

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the labels for hazard statements and the labels for additional hazard statements shown in Table 8 and at the same time exceeded the limit value.

Property: **HP12 »Release of an acute toxic gas«** **Has HP 12** ☐ Yes ☒ No

Description: Waste which releases acute toxic gases (Acute Tox. 1, 2 or 3) in contact with water or an acid.

Determination: When a waste contains a substance assigned to one of the following supplemental hazards EUH029, EUH031 and EUH032, it shall be classified as hazardous by HP 12 according to test methods or guidelines.

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances to which one of the supplemental hazards EUH029, EUH031 or EUH032 would be assigned.

Property: **HP13 »Sensitising«** **Has HP 13** ☐ Yes ☒ No

Description: Waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.

Determination: When a waste contains a substance classified as sensitising and is assigned to one of the hazard statement codes H317 or H334 and one individual substance equals or exceeds the concentration limit of 10 %, the waste shall be classified as hazardous by HP 13.

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the H317 or H334 hazard statements and at the same time exceed the concentration limit of 10% for individual substance.

Property: **HP14 »Ecotoxic«** **Has HP 14** ☐ Yes ☒ No

Description: Waste which presents or may present immediate or delayed risks for one or more sectors of the environment.

Determination: Waste which fulfils any of the following conditions shall be classified as hazardous by HP 14:

- Waste which contains a substance classified as ozone depleting assigned the hazard statement code H420 in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council (¹⁴) and the concentration of such a substance equals or exceeds the concentration limit of 0,1 %.
- [c (H420) ≥ 0,1 %];

– Waste which contains one or more substances classified as aquatic acute assigned the hazard statement code H400 in accordance with Regulation (EC) No 1272/2008 and the sum of the concentrations of those substances equals or exceeds the concentration limit of 25 %. A cut-off value of 0,1 % shall apply to such substances.

– $[\Sigma c (H400) \geq 25 \%]$;

– Waste which contains one or more substances classified as aquatic chronic 1, 2 or 3 assigned to the hazard statement code(s) H410, H411 or H412 in accordance with Regulation (EC) No 1272/2008, and the sum of the concentrations of all substances classified as aquatic chronic 1 (H410) multiplied by 100 added to the sum of the concentrations of all substances classified as aquatic chronic 2 (H411) multiplied by 10 added to the sum of the concentrations of all substances classified as aquatic chronic 3 (H412) equals or exceeds the concentration limit of 25 %. A cut-off value of 0,1 % applies to substances classified as H410 and a cut-off value of 1 % applies to substances classified as H411 or H412.

– $[100 \times \Sigma c (H410) + 10 \times \Sigma c (H411) + \Sigma c (H412) \geq 25 \%]$;

– Waste which contains one or more substances classified as aquatic chronic 1, 2, 3 or 4 assigned the hazard statement code(s) H410, H411, H412 or H413 in accordance with Regulation (EC) No 1272/2008, and the sum of the concentrations of all substances classified as aquatic chronic equals or exceeds the concentration limit of 25 %. A cut-off value of 0,1 % applies to substances classified as H410 and a cut-off value of 1 % applies to substances classified as H411, H412 or H413.

– $[\Sigma c H410 + \Sigma c H411 + \Sigma c H412 + \Sigma c H413 \geq 25 \%]$

Where: Σ = sum and c = concentrations of the substances.

Observations:

Based on a review of the technology of waste generation, review of incoming raw materials, composition of waste and review of the results of the performed analyses, we conclude that the waste in question does not contain any of the substances that meet and exceed the above-mentioned criteria.

Property: **HP15 »Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste«**

Has HP 15 ☐ Yes ☒ No

Determination: When a waste contains one or more substances assigned to one of the hazard statements or supplemental hazards shown in Table 9, the waste shall be classified as hazardous by HP 15, unless the waste is in such a form that it will not under any circumstance exhibit explosive or potentially explosive properties.

Table 9: Hazard statements and supplemental hazards for waste constituents for the classification of wastes as hazardous by HP 15:

Hazard Statement(s)/Supplemental Hazard(s)	
May mass explode in fire	H205
Explosive when dry	EUH001
May form explosive peroxides	EUH019
Risk of explosion if heated under confinement	EUH044

Observations:

Based on a review of the waste generation technology, an examination of the incoming raw materials and the composition of the waste, we conclude that the waste in question does not contain any of the substances that could be classified with one of the labels for hazard statements and labels for additional hazard statements shown in Table 9.

Conclusion on the hazardous properties of the waste (the waste belongs to hazardous or non-hazardous waste due to the following identified hazardous properties):

On the basis of the conducted survey of hazardous properties in accordance with the Waste Regulation (Official Gazette RS, no. 77/22), we note that the waste in question does not exhibit any hazardous properties, therefore it is classified as non-hazardous waste.

Annex 2 of Report no. 2830-22/104377-23/55130-23/162: Summarized data analysis for LF-B (2017-2023)

No.	Parameter	Unit	Sample number 17/94356	Sample number 20/11877	Sample number 20/11878	Sample number 20/32308	Sample number 21/19160	Sample number 21/31415	Sample number 21/40964	Sample number 21/124975	Sample number 22/6256	Sample number 22/34534	Sample number 23/55130	Minimal value	Maximal value	Average value
1	Antimony	mg/kg d	3,7	20	42	/	18	110	8	28	7,2	27	14	3,7	110	27,79
2	Arsenic	mg/kg d	1,3	<1,0	7,7	/	<1,0	2,3	2,2	1,5	2	2,3	< 1,0	<1,0	7,7	2,76
3	Copper	mg/kg d	79	49	390	/	50	87	170	200	65	81	26	26	390	119,70
4	Barium	mg/kg d	110	81	1300	/	150	570	290	160	210	260	140	81	1300	327,10
5	Beryllium	mg/kg d	/	/	/	/	<0,23	0,27	0,34	<0,23	0,46	0,28	< 0,23	<0,23	0,46	0,34
6	Boron	mg/kg d	110	<120	290	/	<120	330	200	<67	180	360	130	< 67	360	228,57
7	Zinc	mg/kg d	350	98	1300	/	150	420	650	1300	330	400	230	98	1300	522,80
8	Cadmium	mg/kg d	0,45	<0,3	2,2	/	0,44	0,84	1	0,5	0,48	1,7	0,38	< 0,3	2,2	0,89
9	Cobalt	mg/kg d	5,5	3,6	15	/	5,8	9,6	9,6	19	8	4,2	5,1	3,6	19	8,54
10	Chromium	mg/kg d	48	82	190	/	74	64	130	70	47	73	32	32	190	81,00
11	Manganese	mg/kg d	96	97	1800	/	240	270	330	250	300	180	74	74	1800	363,70
12	Molybdenum	mg/kg d	5,8	2,8	11	/	2,5	5,9	8	7,4	3,8	6	1,8	1,8	11	5,50
13	Nickel	mg/kg d	22	10	120	/	26	27	46	28	21	32	13	10	120	34,50
14	Selenium	mg/kg d	<2	<0,20	0,43	/	<0,20	<0,20	0,32	0,59	0,94	0,32	< 0,20	< 0,20	0,94	0,52
15	Lead	mg/kg d	38	16	1100	/	45	160	140	65	110	770	18	16	1100	246,20
16	Thalium	mg/kg d	<2	<0,16	<0,16	/	<0,16	<0,16	<0,16	<0,16	<0,16	<0,16	< 0,16	<0,16	<0,16	<0,16
17	Tellurium	mg/kg d	/	/	/	/	<0,16	<0,16	<0,16	<0,16	<0,16	<0,16	< 0,16	<0,16	<0,16	<0,16
18	Vanadium	mg/kg d	11	<3,9	33	/	4,1	11	14	7	11	11	4,7	< 3,9	33	11,87
19	Mercury	mg/kg d	/	0,22	1,3	/	0,41	<0,15	0,65	0,24	0,2	2,3	0,28	< 0,15	2,3	0,70
20	Ash content	% d	/	15,3	19,2	/	10,3	15,5	27,4	16,1	19	19,1	16,7	10,3	27,4	17,62
21	G. C. V.	kJ/kg d	16911	17778	16924	/	30088	20205	15966	17827	16581	21643	23086	15966	30088	19700,90
22	N. C. V	kJ/kg d	15588	16520	15918	/	28259	18846	14958	16554	15414	20086	21608	14958	28259	18375,10
23	Nitrogen	mg/kg d	/	/	/	6247	14121	7245	5686	5666	4811	6313	6451	4811	14121	7067,50
24	Chlorine	% d	0,37	0,21	0,31	0,66	0,15	0,6	0,42	0,48	0,45	0,35	0,19	0,15	0,66	0,38
25	Sulphur	% d	0,25	0,81	0,31	0,21	0,1	0,23	0,3	0,19	0,21	0,22	0,06	0,06	0,81	0,26
26	Fluorine	% d	<0,01	<0,01	<0,01	/	<0,01	<0,01	<0,01	<0,01	0,0044	0,0078	0,0056	0,0044	<0,01	<0,01
27	Hydrogen	% d	/	/	/	5,69	8,38	6,23	4,62	5,83	5,35	7,14	6,78	4,62	8,38	6,25
28	PAH (Σ)	mg/kg d	3,1	2,5	5,4	/	/	/	/	/	/	4,1	0,88	0,88	5,4	3,20
29	PCB (Σ)	mg/kg d	/	/	/	/	/	/	/	/	/	0,35	0,044	0,044	0,35	0,20
30	Phenol	mg/kg d	/	5,5	<2,5	/	/	/	/	/	/	4,3	3,9	3,9	5,5	4,57
31	Dry matter	% ar	74,6	71,4	80,7	80,9	82,9	76,7	62	61,4	76,2	80,6	75,9	61,4	82,9	74,85

Prepared by:
Sebastijan Lamut, M. Sc. In Ecology and Biodiversity
and
Matevž Gobec, B. Sc. Biochem.



Task report

JP VOKA SNAGA - Monitoring odpadkov RCERO Ljubljana 2022-2024

Task report 2830-22/104377-23/55130/1 completely replaces Task report 2830-22/104377-23/55130, dated 2. 08. 2023.

The report was reissued for consistency with the version of the report in another language, which was issued subsequently.

Evidence code: 2830-22/104377-23/55130/1

Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O.
VODOVODNA CESTA 90
1000 Ljubljana

Request: N 4500297245, 14.07.2022

Contractor: Department for Groundwater and Surface Water, Waste and Soil
Department for Chemical Analysis of Food, Water and Other Environmental Samples
Novo mesto
Department for Chemical Analysis of Food, Water and Other Environmental Samples
Kranj

The power: MOP 35445-38/2022-2550-4

Head of task: Sebastijan Lamut, mag. ekol. biod.

Maribor, 28.08.2023

Department for Groundwater and Surface Water,
Waste and Soil
Head of task:

Sebastijan Lamut, mag. ekol. biod.

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Sample information

Sample: JP VOKA SNAGA d.o.o. - 19 12 12 - LF B (SL 28)
Sample number: 23/55130
Purpose: Waste assessment
Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Sample taken by: Sebastijan Lamut, NLZOH OPPVOT
Time of sampling: 01.06.2023 10:00
Place of sampling: JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Sample received by: Sebastijan Lamut
Place and time of receiving: Novo mesto, 01.06.2023 12:29

Report annexes:

Testing report with evidence code 2830-22/104377-23/55130-T/1
Report of chemical analyses with evidence code 1072-22/104377-23/55130-K



Testing report

Testing report 2830-22/104377-23/55130-T/1 completely replaces Testing report 2830-22/104377-23/55130-T, dated 2. 08. 2023.

The report was reissued for consistency with the version of the report in another language, which was issued subsequently.

Sample: JP VOKA SNAGA d.o.o. - 19 12 12 - LF B (SL 28)

Matrix: Waste (eluates)

Sample number: 23/55130

Purpose: Waste assessment

Title: JP VOKA SNAGA - Monitoring odpadkov RCERO Ljubljana 2022-2024

Head of task: Sebastijan Lamut, mag. ekol. biod.

Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana

Request: N 4500297245, 14.07.2022

Subject of sampling: Detailed information is given in the chapter Sampling description

Sampling plan: DN 193526, 01.06.2023

Place of sampling: JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 12 12 - LF B

Methodology of sampling: SIST EN 14899:2006

Sample status: The sample complies with criteria for the reception

Sampling	Sample receiving	Issue date:	28.08.2023
Date and hour: 01.06.2023 10:00	Date and hour: 01.06.2023 12:29		
Taken by: Sebastijan Lamut, NLZOH OPPVOT	Received by: Sebastijan Lamut		

Picture or scheme of the location of sampling:



JP VOKA SNAGA d.o.o. - 19 12 12 - LF B



Sampling description

Waste sampling was carried out according to SIST EN 14899:2006.

The subject of sampling was the contents of the pile marked 19 12 12 - LF-B, with a total estimated volume of 120 cubic meters, which was located under the discharge of the light fraction of mixed municipal waste in the RCERO Barje waste management center (see the image of the collection site).

At this location, a representative sample consisting of 24 increments of 0.5 l volume - a total of 12 l - was taken.

Increments were taken using the client's clean equipment (wheel loader) and INOX sampling paddles (OPR-OPPVOT-EOT-NM-140) at various places in various depths of the pile.

Sample was homogenized and stored in appropriate packaging, and kept it in a dark and cool place during transportation to the laboratory.

Head of task:
Sebastijan Lamut, mag. ekol. biod.

Electronically signed by deputy Matevž Gobec, univ. dipl. biokem. at 29.08.2023 08:12:05

Results refer only to the sampled sample. The test report shall not be reproduced except in full without written approval of the department. It should not be used for advertising purposes. The sample was kept in accordance to the requirements until testing. All additional information on testing is available at the department.



Evidence code: 1072-22/104377-23/55130-K

Report of chemical analyses

Sample: JP VOKA SNAGA d.o.o. - 19 12 12 - LF B (SL 28)
Matrix: Waste (eluates)
Sample number: 23/55130
Purpose: Analysis on owner request
Title: JP VOKA SNAGA - Monitoring odpadkov RCERO Ljubljana 2022-2024
Head of task: Sebastijan Lamut, mag. ekol. biod.
Customer: JAVNO PODJETJE VODOVOD KANALIZACIJA SNAGA D.O.O., VODOVODNA CESTA 90, 1000 Ljubljana
Request: N 4500297245, 14.07.2022
Place of sampling: JP VOKA SNAGA d.o.o., JP VOKA SNAGA d.o.o. - 19 12 12 - LF B
Sample status: The sample complies with criteria for the reception
Sampling **Sample receiving** **Issue date:** 28.08.2023
Date and hour: 01.06.2023 10:00 **Date and hour:** 01.06.2023 12:29
Taken by: Sebastijan Lamut, NLZOH OPPVOT **Received by:** Sebastijan Lamut

Analytic results

Results marked with # refer to not accredited activity

Parameter	Result Note	Values below LOQ	Unit	Expressed as/on	Method Place of execution	Start/End
Original						
Waste analysis						
Antimony	14		mg/kg s.s.	Sb	ISO 17294-2, modified, NM	12.06.23 12.06.23
Arsenic	<1.0		mg/kg s.s.	As	ISO 17294-2, modified, NM	12.06.23 12.06.23
Copper	26		mg/kg s.s.	Cu	ISO 17294-2, modified, NM	12.06.23 12.06.23
Barium	140		mg/kg s.s.	Ba	ISO 17294-2, modified, NM	12.06.23 12.06.23
Beryllium	<0.23	<0.17	# mg/kg s.s.	Be	ISO 17294-2, modified, NM	12.06.23 12.06.23
Boron	130		mg/kg s.s.	B	ISO 17294-2, modified, NM	12.06.23 12.06.23
Zinc	230		mg/kg s.s.	Zn	ISO 17294-2, modified, NM	12.06.23 12.06.23
Cadmium	0.38		mg/kg s.s.	Cd	ISO 17294-2, modified, NM	12.06.23 12.06.23
Cobalt	5.1		mg/kg s.s.	Co	ISO 17294-2, modified, NM	12.06.23 12.06.23
Tin	4.7		mg/kg s.s.	Sn	ISO 17294-2, modified, NM	12.06.23 12.06.23
Chromium	32		mg/kg s.s.	Cr	ISO 17294-2, modified, NM	12.06.23 12.06.23
Manganese	74		mg/kg s.s.	Mn	ISO 17294-2, modified, NM	12.06.23 12.06.23
Molybdenum	1.8		mg/kg s.s.	Mo	ISO 17294-2, modified, NM	12.06.23 12.06.23



Analytic results

Results marked with # refer to not accredited activity

Parameter	Result Note	Values below LOQ	Unit	Expressed as/on	Method Place of execution	Start/End
Nickel	13		mg/kg s.s.	Ni	ISO 17294-2, modified, NM	12.06.23 12.06.23
Selenium	<0.20		mg/kg s.s.	Se	ISO 17294-2, modified, NM	12.06.23 12.06.23
Lead	18		mg/kg s.s.	Pb	ISO 17294-2, modified, NM	12.06.23 12.06.23
Thallium	<0.16	<0.12	# mg/kg s.s.	Tl	ISO 17294-2, modified, NM	12.06.23 12.06.23
Tellurium	<0.16	<0.11	# mg/kg s.s.	Te	ISO 17294-2, modified, NM	12.06.23 12.06.23
Vanadium	4.7		mg/kg s.s.	V	ISO 17294-2, modified, NM	12.06.23 12.06.23
Mercury	0.28		mg/kg s.s.	Hg	SIST EN ISO 12846, modification in point 5, without chapter 7, NM	07.06.23 07.06.23
Naphthalene	0.24		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Acenaphthylene	<0.02		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Acenaphthene	<0.1		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Fluorene	<0.09		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Phenanthrene	0.26		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Anthracene	<0.05		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Fluoranthene	0.16		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Pyrene	0.22		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Benzo(b)fluoranthene	<0.15		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Benzo(a)anthracene	<0.09		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Benzo(k)fluoranthene	<0.15		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Chrysene	<0.09		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Benzo(a)pyrene	<0.09		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Benzo(ghi)perylene	<0.09		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Dibenzo(a,h)anthracene	<0.09		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Indeno(1,2,3-cd)pyrene	<0.15		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
Polycyclic aromatic hydrocarbons (sum)	0.88		mg/kg s.s.		ISO 18287:2006 modificiran v tocki 7.2, NM	07.06.23 12.06.23
PCB-28 (2,4,4'- trichlorobiphenyl)	0.032		mg/kg s.s.		SIST EN 17322:2020, NM	08.06.23 16.06.23



Analytic results

Results marked with # refer to not accredited activity

Parameter	Result Note	Values below LOQ	Unit	Expressed as/on	Method Place of execution	Start/End
PCB-52 (2,2',5,5'-tetrachlorobiphenyl)	0.011		mg/kg s.s.		SIST EN 17322:2020, NM	08.06.23 16.06.23
PCB-101 (2,2',4,5,5'-pentachlorobiphenyl)	<0.003		mg/kg s.s.		SIST EN 17322:2020, NM	08.06.23 16.06.23
PCB-138: (2,2',3,4,4',5'-hexachlorobiphenyl)	0.001		mg/kg s.s.		SIST EN 17322:2020, NM	08.06.23 20.06.23
PCB-118	<0.001	<0.0004	# mg/kg s.s.		SIST EN 17322:2020, NM	08.06.23 16.06.23
PCB-153 (2,2',4,4',5,5'-hexachlorobiphenyl)	<0.002		mg/kg s.s.		SIST EN 17322:2020, NM	08.06.23 16.06.23
PCB-180 (2,2',3,4,4',5,5'-heptachlorobiphenyl)	<0.001		mg/kg s.s.		SIST EN 17322:2020, NM	08.06.23 16.06.23
PCB - sum	0.044	#	mg/kg s.s.		SIST EN 17322:2020, NM	08.06.23 16.06.23
Hydrocarbon oil index	3440	#	mg/kg s.s.		SIST EN 14039:2005, modified in points 8.3, 10.3, NM	09.06.23 13.06.23
Volatile aromatic hydrocarbons (BTX)	38		mg/kg s.s.		SIST EN ISO 15009:2016, NM	02.06.23 19.06.23
Benzene	0.85		mg/kg s.s.		SIST EN ISO 15009:2016, NM	02.06.23 03.07.23
Toluene	0.71		mg/kg s.s.		SIST EN ISO 15009:2016, NM	02.06.23 03.07.23
Xylene (sum of o-, m-, p- isomers)	29		mg/kg s.s.		SIST EN ISO 15009:2016, NM	02.06.23 19.06.23
Ethylbenzene	7.6		mg/kg s.s.		SIST EN ISO 15009:2016, NM	02.06.23 19.06.23
Phenol index	3.9	#	mg/kg s.s.		ND-CKA-146, version 2, NM	13.06.23 14.06.23
Total Cyanide	1.1		mg/kg s.s.	CN ⁻	SIST EN ISO 17380:2013, NM	05.06.23 08.06.23
Fluoride	220	#	mg/kg s.s.	F ⁻	ISO 10359-1:1992, NM	15.06.23 16.06.23
Ash	16.7	#	%DW		SIST-TS CEN/TS 15403:2007, NM	14.06.23 14.06.23
Highly volatile halogenated hydrocarbons	<2.7		mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
Trichloromethane (Chloroform)	<2.4	<0.7	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
Tribromomethane	<14	<4.1	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
cis-1,2-Dichloroethene	<4.0	<1.2	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
Dichloromethane	<5.3	<1.6	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
1,2-Dichloroethane	<7.0	<2.1	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
Trichloroethene (Trichloroethylene)	<2.8	<0.7	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
1,2-Dichloroethylene	<4.0	<1.2	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23



Analytic results

Results marked with # refer to not accredited activity

Parameter	Result Note	Values below LOQ	Unit	Expressed as/on	Method Place of execution	Start/End
1,1-Dichloroethane	<2.8	<0.8	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
1,1,1-Trichloroethane	<2.1	<0.6	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
1,1-Dichloroethene	<2.0	<0.6	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
Tetrachloroethene (tetrachloroethylene)	<1.9	<0.6	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
1,1,2-Trichloroethane	<7.0	<2.7	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
trans-1,2-Dichloroethene	<2.5	<0.8	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
1,1,1,2-Tetrachloroethane	<4.9	<1.5	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
1,1,2,2-Tetrachloroethane	<5.1	<1.5	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
Bromodichloromethane	<4.7	<1.4	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
Dibromochloromethane	<7.8	<2.3	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
Tetrachloromethane	<1.9	<0.6	# mg/kg s.s.		SIST EN ISO 22155:2016, NM	04.06.23 30.06.23
Gross calorific value	23086		kJ/kg s.s.		SIST-TS CEN/TS 16023:2014, KR	13.06.23 14.06.23
Net calorific value	21608		kJ/kg s.s.		SIST-TS CEN/TS 16023:2014, KR	13.06.23 14.06.23
Nitrogen	6451		mg/kg s.s.		SIST EN 15408:2011, KR	13.06.23 14.06.23
Chlorine	0.19		%DW		SIST EN 15408:2011, KR	13.06.23 14.06.23
Sulfur	0.060		%DW		SIST EN 15408:2011, KR	13.06.23 14.06.23
Fluorine	0.0056		%DW		SIST EN 15408:2011, KR	13.06.23 14.06.23
Bromine	<0.01	# <0.001	# %DW		SIST EN 15408:2011, KR	13.06.23 14.06.23
Hydrogen	6.78		%DW		SIST EN ISO 21663:2021, KR	09.06.23 09.06.23
Dry matter	75.9		%		SIST EN 15934:2012 - method A, NM	05.06.23 05.06.23
Moisture	24.1		%		SIST EN 15934:2012 - method A, NM	05.06.23 05.06.23

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Analysis of eluates

Phenol Index	0.44		mg/L		ISO 14402:1999(E)-point 4, NM	07.06.23 08.06.23
Fluoride	<0.50	#	mg/L	F ⁻	ISO 10359-1:1992, NM	12.06.23 12.06.23
Adsorbable organic halogens - AOX	0.28		mg/L	Cl ⁻	SIST EN ISO 9562: 2005, NM	08.06.23 08.06.23



Analytic results

Results marked with # refer to not accredited activity

Parameter	Result Note	Values below LOQ	Unit	Expressed as/on	Method Place of execution	Start/End
Aluminium	0.89		mg/L	Al	ISO 17294-2, modified, NM	13.06.23 13.06.23
Antimony	0.017		mg/L	Sb	ISO 17294-2, modified, NM	09.06.23 09.06.23
Arsenic	0.0085		mg/L	As	ISO 17294-2, modified, NM	09.06.23 09.06.23
Copper	0.057		mg/L	Cu	ISO 17294-2, modified, NM	09.06.23 09.06.23
Barium	0.75		mg/L	Ba	ISO 17294-2, modified, NM	09.06.23 09.06.23
Beryllium	<0.0005	<0.0002 #	mg/L	Be	ISO 17294-2, modified, NM	09.06.23 09.06.23
Boron	0.70		mg/L	B	ISO 17294-2, modified, NM	13.06.23 13.06.23
Zinc	1.4		mg/L	Zn	ISO 17294-2, modified, NM	09.06.23 09.06.23
Cadmium	0.00056		mg/L	Cd	ISO 17294-2, modified, NM	09.06.23 09.06.23
Cobalt	0.062		mg/L	Co	ISO 17294-2, modified, NM	09.06.23 09.06.23
Tin	0.014		mg/L	Sn	ISO 17294-2, modified, NM	09.06.23 09.06.23
Chromium	0.042		mg/L	Cr	ISO 17294-2, modified, NM	09.06.23 09.06.23
Manganese	1.2		mg/L	Mn	ISO 17294-2, modified, NM	13.06.23 13.06.23
Molybdenum	0.0072		mg/L	Mo	ISO 17294-2, modified, NM	09.06.23 09.06.23
Nickel	0.12		mg/L	Ni	ISO 17294-2, modified, NM	09.06.23 09.06.23
Selenium	0.0010		mg/L	Se	ISO 17294-2, modified, NM	09.06.23 09.06.23
Silver	<0.001	<0.0002 #	mg/L	Ag	ISO 17294-2, modified, NM	09.06.23 09.06.23
Lead	0.10		mg/L	Pb	ISO 17294-2, modified, NM	09.06.23 09.06.23
Thallium	0.000013	#	mg/L	Tl	ISO 17294-2, modified, NM	09.06.23 09.06.23
Tellurium	0.000013	#	mg/L	Te	ISO 17294-2, modified, NM	09.06.23 09.06.23
Vanadium	0.0047		mg/L	V	ISO 17294-2, modified, NM	09.06.23 09.06.23
Iron	4.9	#*	mg/L	Fe	ISO 17294-2, modified, NM	09.06.23 09.06.23
Mercury	0.0012		mg/L	Hg	SIST EN ISO 12846, modification in point 5, without chapter 7, NM	09.06.23 13.06.23
Total Cyanide	0.013		mg/L	CN-	SIST EN ISO 14403-2:2013, NM	07.06.23 08.06.23
Total bound Nitrogen	190	#	mg/L	N	SIST EN ISO 20236:2022, NM	08.06.23 08.06.23



Analytic results

Results marked with # refer to not accredited activity

Parameter	Result Note	Values below LOQ	Unit	Expressed as/on	Method Place of execution	Start/End
Ammonium	69	#	mg/L	N	ISO 11732:2005, chapter 4, NM	07.06.23 07.06.23
Chloride	157		mg/L	Cl ⁻	SIST EN ISO 10304-1: 2009, NM	14.06.23 14.06.23
Leaching with water					SIST EN 12457-4:2004, NM	06.06.23 07.06.23
pH	6.5				SIST ISO 10523: 2012, NM	08.06.23 08.06.23
Temperature	24.0	#	°C		SIST EN 12457-4:2004, NM	06.06.23 07.06.23

Sample preparation

Dray matter from 40 °C to 105 °C	95.1				SIST EN 15934:2012 - method A, NM	06.06.23 06.06.23
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Locations of analyses:

NM - OKA Novo mesto, Dalmatinova ulica 3, Novo mesto

KR - OKA Kranj, Gosposvetska ulica 12, Kranj

Measurement uncertainty data are available on the request of the client.

*The result is outside the range of accredited method.

LOD-limit of detection, the lowest analyte concentration which can be detected but not necessarily quantified.

LOQ-limit of quantification, the lowest analyte concentration which can be quantified with acceptable accuracy under the specified conditions.

In the column "Values below LOQ" we show the measured values between LOD and LOQ. Prefix "<" in front of the value indicates that the value is below LOD. This results refer to not accredited activity (#) and are shown following the request of the customer or legislation.

Electronically confirmed by:

mag. Andreja Dremelj, univ.dipl.kem.

OKA Kranj

Head of branch:

Jernejka Franko, univ.dipl.inž.kem.inž.

Electronically signed Jernejka Franko, univ.dipl.inž.kem.inž. at 28.08.2023 12:31:09

Results refer only to the sampled sample. The test report shall not be reproduced except in full without written approval of the department. It should not be used for advertising purposes. The sample was kept in accordance to the requirements until testing. All additional information on testing is available at the department.