

1. TITLE OF THE CERTIFICATE (DE) <sup>(1)</sup>**Lehrabschlussprüfungszeugnis Abwassertechnik**<sup>(1)</sup> in original language2. TRANSLATED TITLE OF THE CERTIFICATE (EN) <sup>(2)</sup>**Certificate of Apprenticeship “Waste Water Engineering” (f/m)**<sup>(2)</sup> This translation has no legal status.

## 3. PROFILE OF SKILLS AND COMPETENCES

**Specialist areas of competence:****Ecology and water management**

Based on the importance of the natural water cycle, the assimilative capacity of standing and flowing waters and the importance of water protection, especially with regard to the drinking water supply, the professional correctly assesses the importance of waste water disposal from a business and economic perspective. In doing so, he/she takes into account the fundamental situation and current objectives of Austrian water management and recognises the effects when waste water is discharged into water bodies. In addition, the professional extracts information from water law-related decisions and derives the necessary activities from them to ensure the proper operation of waste water treatment plants.

**Waste water treatment**

With all his/her activities, the professional helps ensure that all foreseeable – and also extraordinary – operating conditions in a waste water treatment plant are controlled and that the official requirements for all operating conditions, such as commissioning, normal operation or failures, can be met. During operation, the professional operates and monitors various machines, devices and equipment for conveying liquids and gases, such as pumps, compressors and drive units, as well as associated safety equipment.

Depending on the structure of the waste water treatment plant (mechanical, chemical and biological process stages) and the associated physical, chemical and biological processes, he/she operates and monitors machines, devices and equipment such as light material separators, settling and precipitation tanks, membrane filters, immersion and trickling filters, clarifying and aeration tanks. In addition, depending on the further sludge treatment, the professional operates and monitors machines, devices and equipment for sludge treatment and utilisation such as thickeners, presses, dryers and digestion towers. He/she rectifies simple process faults on machines, devices and equipment professionally and safely. In order to operate waste water treatment plants automatically, the professional operates and monitors measuring, control and regulation equipment and uses the devices required for this purpose to measure operating variables such as temperature or pH value as well as the equipment for recording, processing, transmitting and displaying the measured values. In addition, he/she controls and monitors waste water treatment processes with the help of the company-specific process control system and carries out process controls and process optimisations. He/she also participates in measures to be taken in the event of extraordinary incidents, for example when incoming waste water is contaminated with chemicals.

The professional also organises and implements the disposal of accumulated waste or the transfer of accumulated sewage sludge, e.g. for fertilisation or composting. He/she verifies that the measures to prevent odour or noise emissions at the waste water treatment plant are maintained. He/she stores various operating resources, such as spare parts and chemicals, and complies with associated safety rules, regulations and courses of conduct.

The professional records various operating data, such as operating status variables or material flows and process notes in accordance with legal and operational requirements and checks them for completeness and correctness. If necessary, he/she evaluates and assesses operating data and process notes. If necessary, the professional helps to initiate corrective measures and to identify possible process optimisations on the basis of these evaluations.

**Waste water analysis**

The professional performs various analyses on received or taken waste water or sludge samples. To do this, he/she prepares samples taking into account occupation-specific physical and chemical principles and carries out basic laboratory work, such as weighing, measuring volumes or preparing solutions. In doing so, he/she observes the requirements of data sheets and the measures and courses of conduct to be derived from them. The professional identifies accepted waste water or sludge samples by their designation and prepares them using physical methods or chemical methods. As part of self-monitoring, the professional determines characteristic values of waste water and sludge, e.g. settleable substances, sludge volume, conductivity, pH value, nitrogen, phosphorus and oxygen content. He/she uses microscopy to assess sludge samples and detect bulking sludge or floating sludge. Hazardous substances such as extinguishing water, fuel or toxic substances in the inflow are immediately detected by the

professional visually or by means of sensors and he/she initiates appropriate measures in accordance with the legal and operational requirements. The professional takes into account the need for careful work in all analyses and sampling. He/she checks analysis data for plausibility and calculates parameters such as sludge age, sludge load or volume load. He/she then documents the carried out analyses and records them in the operating log.

#### **Maintenance in waste water treatment plants**

The professional ensures that there is no failure of the waste water treatment plant by carrying out timely maintenance on all machines, devices and equipment. In addition, he/she ensures that sufficient spare parts are kept in stock for machines, devices and equipment that are subject to particular wear and tear, and that organisational measures are prepared for rapid repair. Based on information he/she takes from technical documents, the professional plans and carries out maintenance work. To this end, he/she also carries out disassembly and assembly work. He/she carries out simple maintenance work on waste water machines, devices and equipment in a professional and safe manner. If containers or confined spaces have to be entered, the professional complies with the special regulations for working in these areas. He/she recognises work that has to be done by other people or trades, e.g. work on electrical installations, and takes the appropriate steps. If faults in waste water machines, devices and equipment cannot be detected at an early stage, the professional must detect them during operation and systematically limit, assess and report them. He/she also identifies malfunctions and faults in measuring, control and regulation equipment, such as data transmission equipment, and acts to rectify them in accordance with operational requirements.

#### **Interdisciplinary areas of competence:**

- Working in an operational and professional environment
- Quality oriented, safe and sustainable work
- Digital work

### **4. RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE CERTIFICATE <sup>(3)</sup>**

#### **Range of occupations:**

Employment including in public and private companies in the field of waste water treatment, disposal and reprocessing such as clarification plants/sewage treatment plants or sewerage companies, in companies specialising in certain types of waste water (e.g. industrial waste water), in industrial companies with their own disposal and reprocessing plants, as well as in service companies for the installation, maintenance and support of waste water disposal plants

<sup>(3)</sup> if applicable

#### **(\*) Explanatory note**

This document has been developed with a view to providing additional information on individual certificates; it has no legal effect in its own right. These explanatory notes refer to the Decision (EU) no. 2018/646 of the European parliament and the Council of 2 May 2018 on a common framework for the provision of better services for skills and qualifications (Europass).

More information on Europass is available at: <http://europass.cedefop.europa.eu> or [www.europass.at](http://www.europass.at)

### **5. OFFICIAL BASIS OF THE CERTIFICATE**

<b>Name and status of the body awarding the certificate</b>	<b>Name and status of the national/regional authority providing accreditation/recognition of the certificate</b>
Lehrlingsstelle der Wirtschaftskammer  (Apprenticeship Office of the Economic Chamber; for the address, see certificate)	Bundesministerium für Arbeit und Wirtschaft (Federal Ministry of Labour and Economy)
<b>Level of the certificate (national or international)</b>	<b>Grading scale / Pass requirements</b>
NQF/EQF 4 ISCED 35	Overall performance: Pass with Distinction Good Pass Pass Fail
<b>Access to next level of education/training</b>	<b>International agreements</b>
Access to the <i>Berufsreifeprüfung</i> (i.e. certificate providing university access for skilled workers) or a vocational college for people under employment. Access to relevant courses at a <i>Fachhochschule</i> (i.e. university level study programme of at least three years' duration with vocational-technical orientation); additional examinations must be taken if the educational objective of the respective course requires it.	Between Germany, Hungary, South Tyrol and Austria, international agreements on the mutual automatic recognition of apprenticeship-leave examinations and other vocational qualifications have been concluded. Information on equivalent apprenticeship occupations can be obtained from the Federal Ministry of Labour and Economy.

**Legal basis**

1. Training Regulation for Waste Water Engineering BGBl. II (Federal Law Gazette) No. 113/2023 (company-based training)
2. Curriculum framework (education at the vocational school for apprentices)
3. The present apprenticeship trade replaces the apprenticeship trade Reprocessing and Recycling Expert specialising in Waste Water (Training and Examination Regulation BGBl. II (Federal Law Gazette) No. 129/1998 as amended by BGBl. II (Federal Law Gazette) No. 199/2021), which expired as of 30 of April 2023.

**6. OFFICIALLY RECOGNISED WAYS OF ACQUIRING THE CERTIFICATE**

1. Training in the framework of the given Training Regulation for Waste Water Engineering and of the curriculum of the vocational school for apprentices. Admission to the final apprenticeship examination upon completion of the apprenticeship period specified for the apprenticeship trade concerned. The final apprenticeship examination aims to establish whether the apprentice has acquired the skills and competences required for the respective apprenticeship trade and is able to carry out the activities particular to the learned trade herself/himself in an appropriate manner.
2. Admission to the final apprenticeship examination in accordance with Article 23 (5) of the *Berufsausbildungsgesetz* (Vocational Training Act). An applicant for an examination is entitled to sit the final apprenticeship examination without completing a formal apprenticeship training if she/he has reached 18 years of age and is able to prove acquisition of the required skills and competences by means of a relevant practical or an on-the-job training activity of appropriate length, by attending relevant courses etc.

**Additional information:**

**Entry requirements:** successful completion of 9 years of compulsory schooling

**Duration of training:** 3 years

**Enterprise-based training:** Enterprise-based training comprises  $\frac{4}{5}$  of the entire duration of the training and focuses on the provision of job-specific skills and competences according to Article 3 of the Training Regulation, BGBl. II (Federal Law Gazette) No. 113/2023, enabling the apprentice to exercise qualified activities as defined by the profile of skills and competences specified above (cf. job profile).

**Education at vocational school:** School-based education comprises  $\frac{1}{5}$  of the entire duration of the training. The vocational school for apprentices has the tasks of imparting to apprentices the basic theoretical knowledge, of supplementing their enterprise-based training and of widening their general education in the framework of subject-oriented part-time instruction.

**More information** (including a description of the national qualification system) is available at:  
[www.zeugnisinfo.at](http://www.zeugnisinfo.at) and [www.edusystem.at](http://www.edusystem.at)

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