



# **Türkiye Organized Industrial Zones Project**

## **İzmir Aliağa Organized Industrial Zone Wastewater Treatment Plant Capacity Extension Project**

### **Environmental and Social Management Plan (ESMP)**

**OCTOBER 2024**

**Table I Key Experts and Roles**

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## REVISION HISTORY

Ver	Date of Issue	Issue Reason	Client	Project Owner	Consultant
1	November 2023	First submission	Ministry of Industry and Technology	İzmir Aliğa Organized Industrial Zone	ENCON Cevre Danismanlik Ltd. Sti
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4	April 2024	Comments of WB are incorporated	Ministry of Industry and Technology	İzmir Aliğa Organized Industrial Zone	ENCON Cevre Danismanlik Ltd. Sti
5	May 2024	Comments of MoIT are incorporated	Ministry of Industry and Technology	İzmir Aliğa Organized Industrial Zone	ENCON Cevre Danismanlik Ltd. Sti
6	July 2024	Comments of WB are incorporated	Ministry of Industry and Technology	İzmir Aliğa Organized Industrial Zone	ENCON Cevre Danismanlik Ltd. Sti
7	July 2024	Comments of MoIT are incorporated	Ministry of Industry and Technology	İzmir Aliğa Organized Industrial Zone	ENCON Cevre Danismanlik Ltd. Sti
8	August 2024	Comments of WB are incorporated	Ministry of Industry and Technology	İzmir Aliğa Organized Industrial Zone	ENCON Cevre Danismanlik Ltd. Sti
9	September 2024	Incorporation of SCM documents	Ministry of Industry and Technology	İzmir Aliğa Organized Industrial Zone	ENCON Cevre Danismanlik Ltd. Sti
10	October 2024	Comments of WB are incorporated	Ministry of Industry and Technology	İzmir Aliğa Organized Industrial Zone	ENCON Cevre Danismanlik Ltd. Sti

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<b>LIST OF ABBREVIATIONS</b>	

<b>ALOIZ</b>	Aliğa Organized Industrial Zone
<b>Aol</b>	Area of Influence
<b>AZE</b>	Alliance for Zero Extinction
<b>BOD</b>	Biochemical Oxygen Demand
<b>CCTV</b>	Closed-circuit television
<b>COD</b>	Chemical Oxygen Demand
<b>CR</b>	Critically Endangered
<b>dBA</b>	Decibels adjusted
<b>DLP</b>	Defects Liability Period
<b>DM</b>	Dry Matter
<b>DSI</b>	State Hydraulic Works
<b>E&amp;S</b>	Environmental and Social
<b>EBSO</b>	Aegean Region Chamber of Industry



<b>EHS</b>	Environmental, Health and Safety
<b>EIA</b>	Environmental Impact Assessment
<b>EN</b>	Endangered
<b>ENCON</b>	ENCON Laboratuvarı A.S.
<b>EUNIS</b>	European Nature Information System
<b>EPA</b>	Environmental Protection Agency
<b>ESCOPs</b>	Environmental Codes of Practice
<b>ESF</b>	Environmental and Social Framework
<b>ESHS</b>	Environmental, Social Health, and Safety
<b>ESMP</b>	Environmental and Social Management Plan
<b>ESMS</b>	Environmental and Social Management System
<b>ESMF</b>	Environmental and Social Management Framework
<b>ESMR</b>	Environmental and Social Monitoring Report
<b>ESPR</b>	Environmental and Social Progress Report
<b>ESR</b>	Environmental and Social Report
<b>ESS</b>	Environmental and Social Standards
<b>EU</b>	European Union
<b>FI</b>	Financial Intermediary
<b>GIIP</b>	Good International Industry Practice
<b>GIS</b>	Geographic Information Systems
<b>GBV</b>	Gender Based Violence
<b>GHG</b>	Green House Gas
<b>GMR</b>	Grievance Mechanism Report
<b>IAPCR</b>	Industrial Air Pollution Control Regulation
<b>IBA</b>	Important Bird Area
<b>IFC</b>	International Finance Corporation
<b>IUCN</b>	International Union for Conservation of Nature
<b>KBA</b>	Key Biodiversity Area

<b>KSBS</b>	Contaminated Field Information System
<b>LMP</b>	Labor Management Procedures
<b>NT</b>	Near Threatened
<b>N/A</b>	Not Applicable
<b>MESBEM</b>	Vocational Certification Center
<b>MoEUCC</b>	Ministry of Environment, Urbanization and Climate Change
<b>MoIT</b>	Ministry of Industry and Technology



<b>MSDS</b>	Material Safety Data Sheet
<b>OHS</b>	Occupational Health and Safety
<b>OIZ</b>	Organized Industrial Zone
<b>PID</b>	Project Identification Document
<b>PIU</b>	Project Implementation Unit
<b>PM<sub>10</sub></b>	Particles with aerodynamic diameter smaller than 10µm
<b>PM<sub>2.5</sub></b>	Particles with aerodynamic diameter smaller than 2.5µm
<b>PM</b>	Particulate Matter
<b>PMU</b>	Project Management Unit
<b>PS</b>	Performance Standards
<b>PVC</b>	Polyvinyl Chloride
<b>RAMAQ</b>	Regulation on the Assessment and Management of Air Quality
<b>RfP</b>	Request for Proposal
<b>RENC</b>	Regulation on Environmental Noise Control
<b>SEA/SH</b>	Sexual Exploitation Abuse / Sexual Harassment
<b>SCP-II AF</b>	Sustainable Cities Project-II - Additional Financing
<b>SEP</b>	Stakeholder Engagement Plan
<b>TDF</b>	Fish Bioassay
<b>TDS</b>	Total Dissolved Solids
<b>The Project</b>	İzmir Aliağa Organized Industrial Zone Wastewater Treatment Plant Capacity Extension Project
<b>TN</b>	Total Nitrogen
<b>TKN</b>	Total Kjeldahl Nitrogen
<b>TOIZP</b>	Türkiye Organized Industrial Zones Project
<b>TP</b>	Total Phosphorus
<b>TSS</b>	Total Suspended Solids
<b>TurkStat</b>	Turkish Statistical Institute
<b>ToR</b>	Terms of Reference
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>UV</b>	Ultraviolet
<b>VOCs</b>	Volatile Organic Compounds
<b>VU</b>	Vulnerable
<b>WB</b>	World Bank
<b>WBG</b>	World Bank Group
<b>WHO</b>	World Health Organization
<b>WWTP</b>	Wastewater Treatment Plant



WW	Wastewater
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## GLOSSARY

Associated Facility	Facilities or activities that are not funded as part of the project and, in the judgment of the Bank, are: (a) directly and significantly related to the project; and (b) carried out, or planned to be carried out, contemporaneously with the project; and (c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist. For facilities or activities to be Associated Facilities, they must meet all three criteria.
Area of Influence (Aol)	The geographical area that may be directly or indirectly affected by the project activities.
Implementing Agency	The organization or entity responsible for implementing the project activities.
Project Owner / ALOIZ	The entity or organization that owns the project and is responsible for its implementation.
Consultant	A professional or firm hired to provide expert advice or services related to the project
Construction Supervision Consultant	A consultant responsible for supervising the construction activities of the project.
Contractor	A company or organization hired to carry out specific construction or maintenance activities related to the project.
Main Project	The primary project being implemented, which may include various associated facilities or components.
Project Area	The geographical area where the project activities are taking place.

## EXECUTIVE SUMMARY

Türkiye Organized Industrial Zones (TOIZs) Project will be financed by the World Bank/ International Bank for Reconstruction through a loan for which Ministry of Industry and Technology (MoIT) has been designated as responsible for project implementation by the Ministry of Treasury and Finance. The project aims to increase the efficiency, environmental sustainability, and competitiveness of Organized Industrial Zones (OIZs) in Türkiye. With a total budget of EUR 250.3 million, the project will be implemented by the Ministry of Industry and Technology (MoIT) through the General Directorate of Industrial Zones.

The main organization responsible for the implementation of this ESMP is Aliğa Organized Industrial Zone (ALOIZ). A PMU will be established to carry out operational and administrative tasks. The PMU staff will be the ALOIZ's own staff and who have previous experience with implementation of World Bank-funded project. Besides, in different phases of the Project (pre-construction, construction and operation), different parties (Consultant, Contractors, Construction Supervision Consultant, MoIT/PIU) will take responsibility for various works of the ESMP. All mentioned works will be coordinated by the ALOIZ. The roles and responsibilities of these parties are detailed in Section 8.

The current Wastewater Treatment Plant (WWTP) capacity is 3500 m<sup>3</sup>/day fed by 3 main collectors of ALOIZ. As a subproject under the TOIZP, the primary objective of this Project is to establish a second stage WWTP with a daily capacity of 12,000 m<sup>3</sup> in Aliğa OIZ (ALOIZ). The planned WWTP will specialize in the removal of floatable materials, grit, grease, organic pollutants,



and hazardous substances from wastewater. The treated wastewater will be discharged into Kunduz Creek.

The planned WWTP will encompass physical treatment components (screening, grit and grease removal), chemical treatment processes (coagulation, flocculation, sedimentation), and biological treatment methods (bio-P and primarily aeration tanks) to effectively eliminate various industrial pollutants from the wastewater. Additionally, the WWTP will have a solar sludge drying system to manage excess sludge. In this Project, solar sludge drying system, which will be constructed according to the amount and characterization of the sludge after the planned wastewater treatment plant is commissioned, is determined as associated facility. Associated facility will not be financed with the loan to be used for this project, but will be financed by ALOIZ. WWTP sludge will be transported to a licensed disposal facility, like the process applied for the existing WWTP. All necessary design and construction activities will be carried out.

The project will be built within the existing WWTP area, which is owned by OIZ (parcel no: 141/24). Expropriation works were carried out by YİKOB (Investment Monitoring and Coordination Directorate under the governorship). Land acquisition was completed in 2018. The Governorship Letter regarding land acquisition is presented in Annex-1. For the Project Area, there is no pending title transfer, compensation payment, ownership disputes. In addition, collector and discharge lines will not require any land acquisition process since their construction will be under the existing roads.

There are 2 grid structures in the existing treatment plant, and additions will be made to these structures within the scope of the project. Grid and oil chamber units will be built, and pump capacities will be extended. An additional blower will be installed. Sedimentation tanks will be demolished and rebuilt. According to the plans, some parts of the existing WWTP will be demolished and extended for bigger capacity as mentioned above, some parts will remain as they are.. In the scope of the extension project, some parts of the WWTP will be re-designed because of existing designs not being done properly before.

The existing chemical storage building at WWTP will be converted into a warehouse and a new chemical building will be established. A solar drying unit will be built as an auxiliary facility of the project. While the project construction activities are carried out, the WWTP in question will not be stopped and will be operated.

The project discharge point is Kunduz Creek, which is currently used as a discharge point. Kunduz Creek flows into Aliağa Bay. There is pollution in the discharge area. With the WWTP capacity increase project, the pollution burden of the receiving environment will be reduced.

The Project will be in compliance with the ESMF of the TOIZP, good international industry practice, including WB ESSs, guides, standards and best practices documents alongside the national legislation. In addition, the Project and the social and environmental elements in the Area of Influence (AoI) of the Project include elements or activities that fall under the scope of ESS1, ESS2, ESS3, ESS4, ESS6 and ESS10. The main objectives of these standards within the scope of the Project are presented below.

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts,
- ESS2: Labour and Working Conditions,
- ESS3: Resource Efficiency and Pollution Prevention and Management,
- ESS4: Community Health and Safety,
- ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources,
- ESS10: Stakeholder Engagement and Information Disclosure.

The Project's anticipated environmental and social impacts/risks will be in terms of air quality, odor, soils, water resources, noise, biological environment, resources and waste, socioeconomic



environment and occupational health and safety, cultural heritage and community health, safety and security. Summary of the mitigation measures is provided in Table 1.

**Table 1 Summary of the Significant Mitigation Measures**

<b>Potential Environmental and Social (E&amp;S) Impacts/Risks</b>	<b>Mitigation Measures</b>
Air Quality	Dust and exhaust emissions management Air quality monitoring Speed limitations will be applied
Soils and Contaminated Land	Topsoil preservation and restoration Prevention of soil contamination Erosion control measures
Water Resources	Proper storage of chemicals Prevention of surface runoff Effluent discharge consistent with applicable national requirements or internationally accepted standards
Noise	Regular maintenance of the construction machinery, equipment and vehicles Noise monitoring Establishment of a robust grievance mechanism
Biological Environment	Re-vegetation, where possible Measures to further avoid and minimize the construction footprint
Landscape and Visual	Painting the planned WWTP in colors that suit the background
Resources and Wastes	Wastes management in accordance with the waste management hierarchy Selection of most appropriate raw materials by evaluating clean production options Ensuring proper management of existing asbestos pipes in cases where asbestos pipes need to be brought to the surface
Employment and Procurement Opportunities	Providing transparent, non-discriminatory, equal recruitment opportunities with respect to ethnicity, religion, language, gender and sexuality
Infrastructure and Services	Prompt compensation of any damage to infrastructure
Labor Force	A grievance mechanism Preparation of information materials Managing and monitoring the performance of contractors in relation to the requirements of child labor, unregistered employment and forced labor Proper adaptation of human rights policy and labor rights
Community Health, Safety and Security	Usage of appropriate traffic signage
Occupational Health and Safety	Awareness raising, training for workers Code of Conduct
<b>Potential Environmental and Social (E&amp;S) Impacts/Risks</b>	<b>Mitigation Measures</b>
	Preparation of procedures, methods statements and work instructions Emergency Preparedness and Response (EPR) Plan for a possible accident and emergency and emergency teams will be established, and drills and trainings will be carried out in line with the emergency scenarios
Archaeological and Cultural Heritage	Informing related Civilian Authority or Museum Directorate

As a part of the mitigation measures, it is necessary to develop site-specific Environmental and Social management documents on different subjects. The management plans and procedures for both phases of the Project are given in Table 2. These management plans will be included in the contractor contracts.



**Table 2 Recommended Management Plans and Procedures for the Project**

Management Plans/Procedure	Stage to be Prepared	Responsible Party	Approving Party
<b>Pre-construction and Construction Phase</b>			
Soil Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Air Quality and Emissions Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Water Resources Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Noise and Vibration Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Waste Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Oil and Chemical Spill Contingency Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Community Health, Safety, and Security Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Traffic Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Occupational Health and Safety Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Labour Management Plan	Prior to preconstruction	Contractor	MoIT PIU
Contractor Management Plan	Prior to preconstruction	ALOIZ	MoIT PIU
<b>Operation Phase</b>			
Odor Management Plan	Prior to operation	ALOIZ	MoIT PIU
Water Resources and Effluent Management Plan	Prior to operation	ALOIZ	MoIT PIU
Waste Management Plan	Prior to operation	ALOIZ	MoIT PIU
Sludge Management Plan	Prior to operation	ALOIZ	MoIT PIU
Occupational Health and Safety Management Plan	Prior to operation	ALOIZ	MoIT PIU

Main impacts presented in Chapter 7 for the pre-construction, construction and operation phases of the project and the mitigation measures taken to manage these impacts are presented in Chapter 8.

In Chapter 9 details the various parameters to be monitored in relation to the implementation of the ESMP and the monitoring activities for pre-construction, construction and operation phases are defined.





# 1 INTRODUCTION

## 1.1 Project Background and Rationale

The World Bank/International Bank for Reconstruction and Development (IBRD) will fund the Türkiye Organized Industrial Zones Project (TOIZP) via a loan. The Ministry of Industry and Technology (MoIT), appointed by the Ministry of Treasury and Finance, will oversee the project's execution. This initiative aims to enhance the efficiency, environmental sustainability, and competitiveness of Türkiye's Organized Industrial Zones (OIZs).

The main project, with a total budget of EUR 250.3 million, will be managed and implemented by the Ministry of Industry and Technology (MoIT) through the General Directorate of Industrial Zones.

The Ministry of Industry and Technology (MoIT) has a significant track record in enhancing Organized Industrial Zones (OIZs). These zones in Türkiye are strategically located to comply with specific regulations (Organized Industrial Zones Law No. 4562) and receive backing from the MoIT. The primary aim of the Türkiye Organized Industrial Zones Project is to enhance the effectiveness, eco-friendliness, and competitiveness of chosen OIZs in Türkiye.

Sub-projects within the framework of the "Türkiye Organized Industrial Zones Project" (TOIZP) are subject to an initial screening process based on three primary criteria: the project's nature, size, and location, particularly considering sensitive areas. This assessment aims to identify sub-projects that may have noteworthy environmental or social impacts at an early stage, necessitating a comprehensive Environmental and Social Impact Assessment, in accordance with the World Bank's Environmental and Social Framework (ESF) and project-specific Environmental and Social Management Framework (ESMF) guidelines. To achieve these objectives, the following criteria/metrics are determined for the main Project:

- Metric 1: Energy savings from OIZ expenditures in basic and green infrastructure
- Metric 2: Water savings from OIZ investments in green infrastructure
- Metric 3: Reduction in CO<sub>2</sub> emissions due to the financed investments
- Metric 4: Share of OIZs that attract new investments

Environmental and social screening processes have been completed for the subject projects of these Organized Industrial Zones (OIZs) in line with the World Bank's requirements. The screening processes utilized Environmental and Social Screening Forms, along with accompanying annexes, to address pertinent questions aimed at identifying potential environmental and social consequences arising from the execution of the sub-project. Overall environmental and social risk of the project has been rated as "Moderate".

ALOIZ Wastewater Treatment Plant Capacity Extension Project ("the Project") is one of the sub-projects within the scope of increasing the capacity of wastewater treatment needed in Türkiye Organized Industrial Zones. Within the scope of the project, the capacity of the existing wastewater treatment plant in ALOIZ will be increased in line with the needs of the OIZ.

### ***Deviations from the Approved E&S Screening Study***

The design details specified in the Screening Report are the same for the current planning of ALOIZ Wastewater Treatment Plant Capacity Extension Project. There is no design (such as project components, project locations, capacity, management system, schedule etc.) changes or deviations.

## 1.2 Purpose and Scope of Environmental and Social Management Plan (ESMP)



According to the EIA Regulation (Official Gazette dated 29.07.2022 and numbered 31907), if the capacity of the wastewater treatment plant is above 30,000 m<sup>3</sup>/day, it is included in the Annex-II list, and if it is above 50,000 m<sup>3</sup>/day, it is included in the Annex-I list. In Aliağa OIZ Wastewater Treatment Plant, the capacity of the plant will be increased by 8,500 m<sup>3</sup>/day. Therefore, the project will serve with a capacity of 12,000 m<sup>3</sup>/day. Therefore, the Project is exempt from EIA Regulation. The exemption letter is presented Annex-1 Figure-3.

Sub-projects falling under the umbrella of the "Türkiye Organized Industrial Zones Project" (TOIZP) must undergo an initial screening process. This screening is contingent on three key factors: the project's nature, size, and location, particularly adhering to criteria related to sensitive areas. Following this evaluation, sub-projects exhibiting potential environmental or social concerns are promptly identified for a comprehensive assessment of their Environmental and Social impacts. This evaluation will adhere to the guidelines outlined in the World Bank's Environmental and Social Framework (ESF), along with the project-specific ESMF instruments. After the screening studies of the project, the overall risk of the project is assessed as "Moderate", and a site-specific ESMP is required.

According to WB's Environmental and Social Framework (ESF), moderate risk projects are those where the potential risks and impacts and issues have the following characteristics: (i) predictable and expected to be temporary and/or reversible, (ii) low in magnitude, (iii) site-specific, without likelihood of impacts beyond the actual footprint of the project and (iv) low probability of serious adverse effects to human health and/or the environment (e.g., do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.). The risk characterization of the present Project is given below:

- The capacity of the planned WWTP is 8,500 m<sup>3</sup>/day and the Project is exempt from EIA Regulation.
- There is no nationally protected area nor internationally protected and recognized area within the project area.
- With the realization of the Project, the wastewater will be treated, and discharge of untreated wastewater into the environment will be prevented. Therefore, the Project will have a positive impact on both the environment and public health.

This ESMP is prepared in accordance with the ESMF of the TOIZP, WB ESF requirements, the World Bank Group (WBG) Environmental, Health and Safety (EHS) Guidelines and Industrial Sector Guidelines and the national legislation in force in Türkiye. The ESMP prepared by ENCON Çevre Danışmanlık Ltdi. Şti (ENCON) assesses and identifies the potential environmental and social impacts and risks arising from the development and implementation of the Project and identifies and plans mitigation measures for significant adverse environmental and social impacts/risks and describes the monitoring of and institutional requirements necessary to implement this Plan.

The primary purpose of this ESMP is to ensure that the environmental and social requirements and social commitments associated with the Project are duly implemented during the pre-construction, construction and operation phases of the Project and are effectively managed. The specific objectives of this ESMP are as follows:

- To conduct all project activities in accordance with the applicable national legislation and in compliance with the WB's Environmental and Social Framework (ESF) and procedures;
- Conducts potential impact assessment and monitoring within the project area and impact area, taking into account environmental and social baseline conditions. To identify anticipated potential environmental and social risks and impacts;
- To adopt the mitigation hierarchy and identify mitigation measures, which anticipate and avoid, minimize, and, where residual impacts remain, compensate or offset risks and impacts;



- To prevent or compensate any loss of the affected person;
- To prevent environmental degradation as a result of either individual sub-projects or their cumulative effects;
- To enhance positive environmental and social outcomes;
- To ensure maximizing efficiency and minimizing costs in complying with environmental and social legislation and standards;
- To act as an Action Plan to ensure that the project impact mitigation measures are properly implemented and monitored; and
- To ensure that all stakeholders' concerns are addressed.

A Stakeholder Engagement Plan (SEP) has been prepared by ENCON for Aliğa OIZ Wastewater Treatment Plant Capacity Extension Project. The SEP encompasses identification of stakeholders and planned stakeholder consultation activities and the process of stakeholder engagement. SEP is a stand-alone document, and a summary included in Section 11.

This plan was structured around the below main headings. The information provided in the plan was detailed under these headings to the extent that the best available data allowed. Accordingly, the chapters included in the ESMP can be briefly explained as the following:

- Chapter 1 Introduction; introduction to the project and ESMP report
- Chapter 2 Project Description; is a description of the project including its location, components, technical specifications, associated construction and operation activities, and a proposed schedule for implementation.
- Chapter 3 Legal Framework; explains national and international legal requirements, analyzes gaps between national legislation and WB ESF and identifies environmental agreements, and other relevant international agreements that are relevant to the project.
- Chapter 4 Methodology; describes ESMP preparation methodology
- Chapter 5 Environmental Baseline of the Project; describes the baseline conditions in and around the proposed Project Area, including physical, biological conditions.
- Chapter 6 Social Baseline of the Project; describes the baseline conditions in and around the proposed Project Area, including socio-economic conditions.
- Chapter 7 Environmental and Social Risks and Impacts of the Project; assesses the potential negative risks and impacts of the project, identifying mitigation measures.
- Chapter 8 Environmental and Social Aspects. This chapter include the ES management plan for the various phases of the project specific..
- Chapter 9 Environmental and Social Monitoring Plan; describes the monitoring activities.
- Chapter 10 Institutional Arrangements and Training; gives the information about environmental and social management structure and environmental and social monitoring reports.
- Chapter 11 Stakeholder Management Under ESMP; explains the needs, expectations and concerns of these stakeholders to ensure that the project's impacts and risks on the stakeholder or organization are positive.

## 2 PROJECT DESCRIPTION

ALOIZ currently operates a wastewater treatment plant (WWTP) situated within the ALOIZ boundaries. The existing WWTP incorporates various units for physical, chemical, biological treatment, as well as sludge dewatering.

To date, the WWTP has been operating at full capacity in compliance with the national discharge standards. Consequently, maintenance and repair costs for machinery and equipment have risen, and there have been challenges in sourcing spare parts. Additionally, it has been recognized



that the total wastewater volume will increase due to rising production capacities of companies within the ALOIZ. Therefore, the construction of a planned WWTP is deemed essential for the safe and environmentally sound operation of the ALOIZ. Within the scope of the project, the capacity of existing units will be improved, old units will be demolished, and new ones will be built. With the project, daily wastewater capacity will be 12000 m<sup>3</sup>.

For the Project, the pre-construction works will start and last for one month. The continuation of this process is the construction phase of the project, which will last 12 months. Also, the economic life of wastewater treatment plants is considered as 35 years.

There will be 5, 50 and 11 employees during the pre-construction, construction and operation phases of the project, respectively. During the pre-construction and construction phases of the Project, there will be a camp area where the staff can meet their basic requirements such as toilets and showers, but there will be no accommodation on the construction site.

While 2 construction machinery/equipment will be used in the pre-construction phase, 10 will be used in the construction phase. Also, since ready-mixed concrete will be used in construction, no cement/concrete unit will be in the Project Area.

The definition, duration and resource requirements of the activities to be carried out for all 3 phases of the Project are summarized in the Table 2.1.



**Table 2.1 List of Activity for Each Phase of the Project**

Phase	Activities	Description	Timeline	Resources Requirements
<b>Pre-Construction</b>	<b>Site Preparation</b>	<input type="checkbox"/> This involves clearing, grading, and prepping the construction site, including digging and moving earth as needed.	1 month	<ul style="list-style-type: none"> <li>• 5 personnel for land preparation works</li> <li>• Machinery and equipment</li> <li>• Domestic water for employees' use.</li> </ul>
<b>Construction</b>	<b>Constructing Physical Structures</b>	<ul style="list-style-type: none"> <li>• Building the essential structures like treatment tanks, settling basins, other units vital for wastewater treatment and as an associated facility solar drying structure</li> <li>• The old units will be demolished and new ones will be built instead.</li> </ul>	All construction activities will last 12 months	<ul style="list-style-type: none"> <li>• 50 personnel</li> <li>• Machinery and equipment</li> <li>• Domestic water for employees' use</li> </ul>
	<b>Installing Pipelines and Networks</b>	<input type="checkbox"/> Setting up the network of pipes, both underground and above ground, that carry wastewater within the plant.		
	<b>Placing Mechanical Components</b>	<input type="checkbox"/> Installing machinery like pumps, motors, and aerators necessary for the treatment processes.		
	<b>Electrical Setup</b>	<input type="checkbox"/> Putting in place electrical systems, control panels, and wiring for monitoring and managing the treatment procedures.		
	<b>Handling Chemicals</b>	<input type="checkbox"/> Building facilities for storing and managing treatment chemicals like disinfectants and pH adjusters.		
	<b>Safety and Security</b>	<input type="checkbox"/> Installing safety features, fencing, and security systems to protect workers and prevent unauthorized access.		
	<b>Testing and Commissioning</b>	<input type="checkbox"/> Running tests and inspections to ensure the plant operates as intended and meets required standards before it goes operational.		
<b>Operation</b>	<b>Inflow Monitoring</b>	<input type="checkbox"/> Consistently overseeing the incoming wastewater flow at the plant to control and adapt treatment methods based on changes in flow rates and qualities.	The economic life of wastewater treatment plant is 35 years.	<ul style="list-style-type: none"> <li>• 11 personnel</li> <li>• Machinery and equipment</li> <li>• Domestic water for employees' use</li> <li>• Electricity usage</li> </ul>
	<b>Primary Treatment</b>	<input type="checkbox"/> Performing initial treatment methods like screening and sedimentation to eliminate large solids and floating debris from the incoming wastewater.		
	<b>Biological Treatment</b>	<input type="checkbox"/> Implementing biological treatment techniques, such as activated sludge or biological filters, to decompose organic matter and extract nutrients from the wastewater.		
	<b>Secondary Treatment</b>	<input type="checkbox"/> Implementing secondary treatment techniques to further cleanse the wastewater, often involving biological and chemical processes to remove residual pollutants.		
	<b>Tertiary Treatment</b>	<input type="checkbox"/> Applying tertiary treatment methods like filtration or disinfection to attain elevated water quality standards prior to discharge		
	<b>Sludge Management</b>	<input type="checkbox"/> After water removal and purification procedures, the sludge will be dried in the solar drying unit.		

	<b>Effluent Discharge</b>	<input type="checkbox"/> Releasing treated wastewater (effluent) into receiving body according to regulatory standards	
	<b>Maintenance and Repairs</b>	<input type="checkbox"/> Performing routine maintenance tasks, which involve	

5



		inspecting equipment, making repairs, and replacing parts as needed, to guarantee that all plant components operate correctly.		
	<b>Process Optimization</b>	<input type="checkbox"/> Consistently improving treatment procedures by monitoring, making adjustments, and implementing upgrades to enhance efficiency and effectiveness		
	<b>Monitoring and Reporting</b>	<input type="checkbox"/> Consistently checking the quality of the discharged water, its environmental impact, and adherence to regulations, along with keeping records and submitting reports as mandated by governing bodies.		
	<b>Emergency Preparedness</b>	<input type="checkbox"/> Developing and implementing emergency response plans to address unexpected events like spills, equipment failures, or natural disasters to minimize environmental impacts and ensure worker safety.		
	<b>Staff Training and Development</b>	<input type="checkbox"/> Providing ongoing training and professional development opportunities for plant operators and staff to keep them updated on best practices, technologies, and safety protocols.		



## 2.1 Objectives of the Project

In response to surge in wastewater volume, ALOIZ has devised plans for the expansion and enhancement of the existing WWTP. This expansion aims to accommodate the increased wastewater inflow while also enabling the treatment of effluent wastewater for reclamation purposes, optimizing resource utilization and sustainability.

The new (extended) WWTP shall provide necessary treatment units to comply with the discharge standards and serve the increasing number of factories in different industrial sectors, including metal, food, pulp & paper, chemicals etc. It is planned that the dewatered sludge to be formed in the planned WWTP to be constructed within the scope of the Project will be sent to energy recovery facilities / cement factories in the city by ALOIZ.

## 2.2 Project Location

Located in the İzmir province of Türkiye, Aliğa is a district bordered by Bergama to the north, and the districts of Foça and Menemen to the south. To the east, it shares its boundary with Manisa province, while its western border is the Aegean Sea. Aliğa Organized Industrial Zone (ALOIZ) was established in 1997 under the leadership of the Aegean Region Chamber of Industry (EBSO) on an area of 10 million m<sup>2</sup> in the Aliğa district of İzmir Province.

There is a Wastewater Treatment Plant with a capacity of 3500 m<sup>3</sup>/day in the OIZ, which has been in operation since 2017. The project is planned to be built on the same parcel that hosts the existing treatment units and the same discharge line will be used with the existing WWTP. The discharge point of the extended WWTP is Kunduz Creek which has a continuous flow. The site location map of the Project is presented in Figure 2.1.



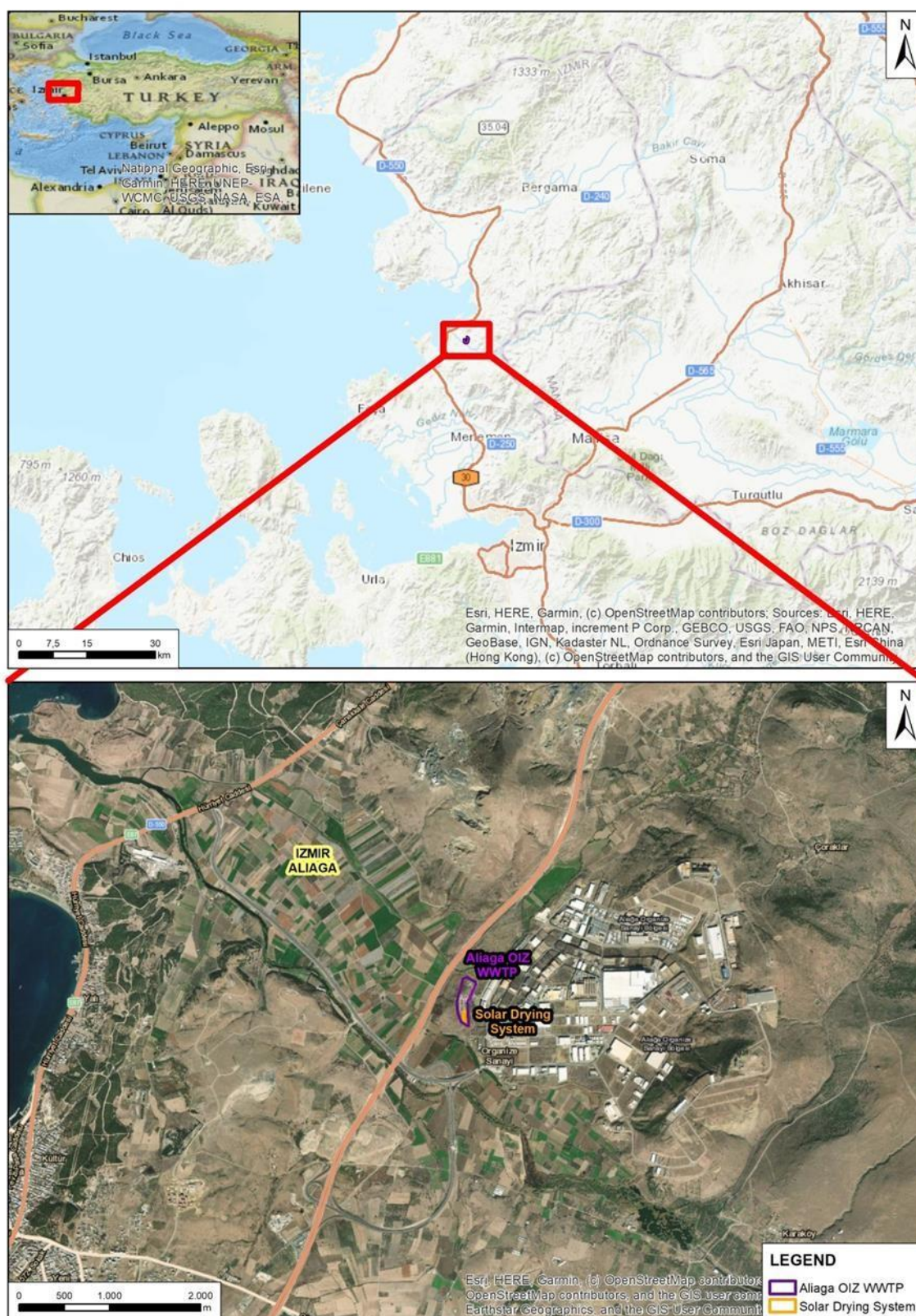


Figure 2.1 Project Location

## 2.3 Project Components and Timeline

The latest decision of the ALOIZ is the construction of conventional activated sludge process with an expansion of capacity of 8,500 m<sup>3</sup>/day within the scope of this project (In total 12,000 m<sup>3</sup>/day

with the existing WWTP). Considering the wastewater characteristics of the cumulative wastewater from the companies, mechanical pre-treatment, chemical treatment, biological treatment was selected, and the following units were selected to be built:

- Mechanical Pre-Treatment
  - Coarse Screen & Fine Screen
  - Aerated Grit and Grease Removal Tank
  - Equalization Tank
  - Pumping Station
- Chemical Treatment Units
  - Coagulation Tanks
  - Flocculation Tanks
  - Chemical Sedimentation Tank and Chemical Sludge Pumping Station
- Biological Treatment Units
  - Bio-P Tank
  - Aeration Tank
  - Final Sedimentation Tank
  - Chlorination Tank
  - Return and Excess Sludge Pumping Station
  - Sludge Storage Tank
  - Sludge Dewatering Building

There are 3 collectors in total, two of them are 1,000 mm in diameter and the other is 600 mm in diameter, coming to the existing Wastewater Treatment Plant. The wastewater transport capacity is calculated to be approximately 15,720 m<sup>3</sup>/day and it is considered sufficient for the 12,000 m<sup>3</sup>/day planned for the planned WWTP. Furthermore, the existing discharge line will be used for the planned WWTP. The Project involves construction of new units and the renewal of the existing ones. The relevant effects are described in Section 7.

Units to be reconstructed are given below with their respective details:

- **Aerated Grit Chamber:** The existing unit will be used until the new one is built. Upon commissioning of the new unit, the unit will be out of use and demolished.
- **Chemical Treatment Structures:** The units will be rebuilt, and the old units will be demolished after the commissioning of the new units to avoid operational interruption
- **Aeration Basins Distribution Structure:** This structure will be reconstructed.
- **Flow Measurement and Disinfection Unit:** The units will be rebuilt, and the old units will be demolished after the commissioning of the new units to avoid operational interruption.

New units to be constructed are given below with their respective details:

- **Equalization Tank:** There are currently 2 tanks. Existing tanks will be preserved, and 1 additional tank will be constructed.
- **Chemical Settling Tanks:** 2 new tanks will be constructed.



- **Anaerobic Tank:** There are currently 2 tanks. Existing tanks will be preserved and 1 additional tank with the same dimensions will be constructed.
- **Aeration Tanks:** There are currently 2 tanks. Existing tanks will be preserved and 1 additional tank with the same dimensions will be constructed.
- **Final Settling Tanks Distribution Structure:** The building does not exist and will be newly constructed.
- **Sludge Foam Pump Station:** The building does not exist and will be newly constructed.
- **Return and Excess Sludge Pumping Station:** The structure is already in place and a Valve Room structure will be constructed next to it.
- **Filtrate Water Pumping Station:** The building does not exist and will be newly constructed.
- **Fire and Clean Water Storage:** The building does not exist and will be newly constructed.
- **Security Guard Building:** The structure is already in place and another one will be constructed next to it.
- **Sludge Dewatering Building:** Since the existing Dewatering Building will be used as a Workshop Building, sludge dewatering building will be newly constructed. The design of the unit will be made in accordance with the construction, mechanical (platform, crane, blower, etc.) and electrical (electrical panel, crew and equipment, etc.) equipment installation, layout and occupational safety. These issues will be taken considered when determining the unit volume in the design. In the sizing and design of the unit, assembly-disassembly and maintenance of the equipment shall be carried out in accordance with occupational health and safety rules. Walkways, reinforced concrete or steel stairs shall be constructed for comfortable and safe access to mechanical and electrical equipment in the units. The volumes required for the assembly and disassembly of the equipment will be closed with open-eyed grid covers in accordance with the relevant provisions of the occupational health and safety legislation.
- **Continuous Wastewater Monitoring Station:** The building does not exist and will be newly constructed.

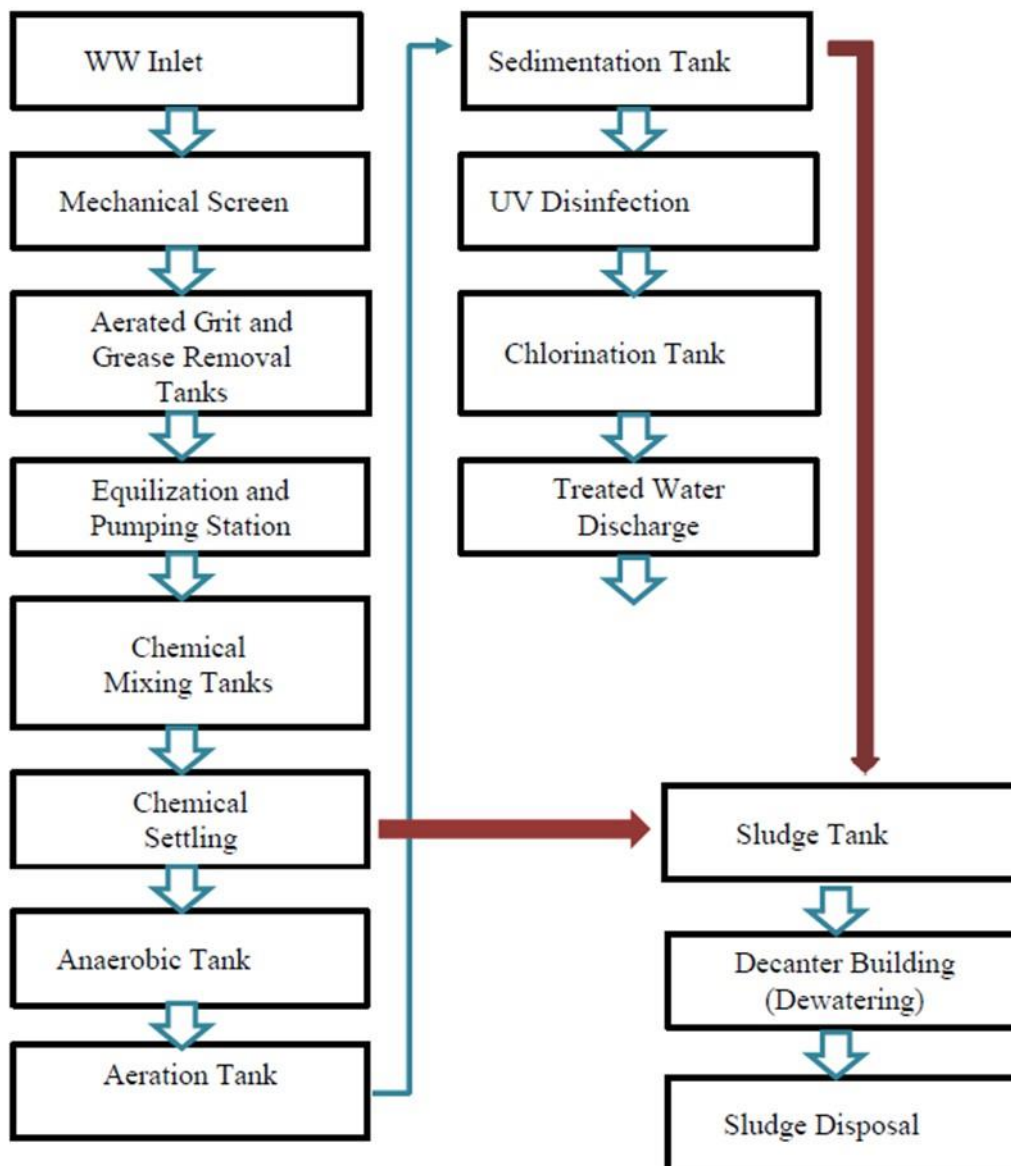
After the wastewater treatment plant is commissioned, a **Solar Drying Unit** that is determined as associated facility within the scope this Project will be constructed according to the amount and characterization of the sludge.

Units that will not be modified are given below:

- Sludge Storage Pool
- Decanter Feed Pump Station
- Administrative Building
- Blower Buildings
- Storage Building



The Solar Drying Facility will be constructed according to the amount and characterization of the sludge produced after the planned WWTP is put into operation. The flow chart of planned WWTP is presented in Figure 2.2.



**Figure 2.2 Flow Chart of WWTP**  
Source: ALOIZ Documents

The map showing the project components is presented in Figure 2.3.

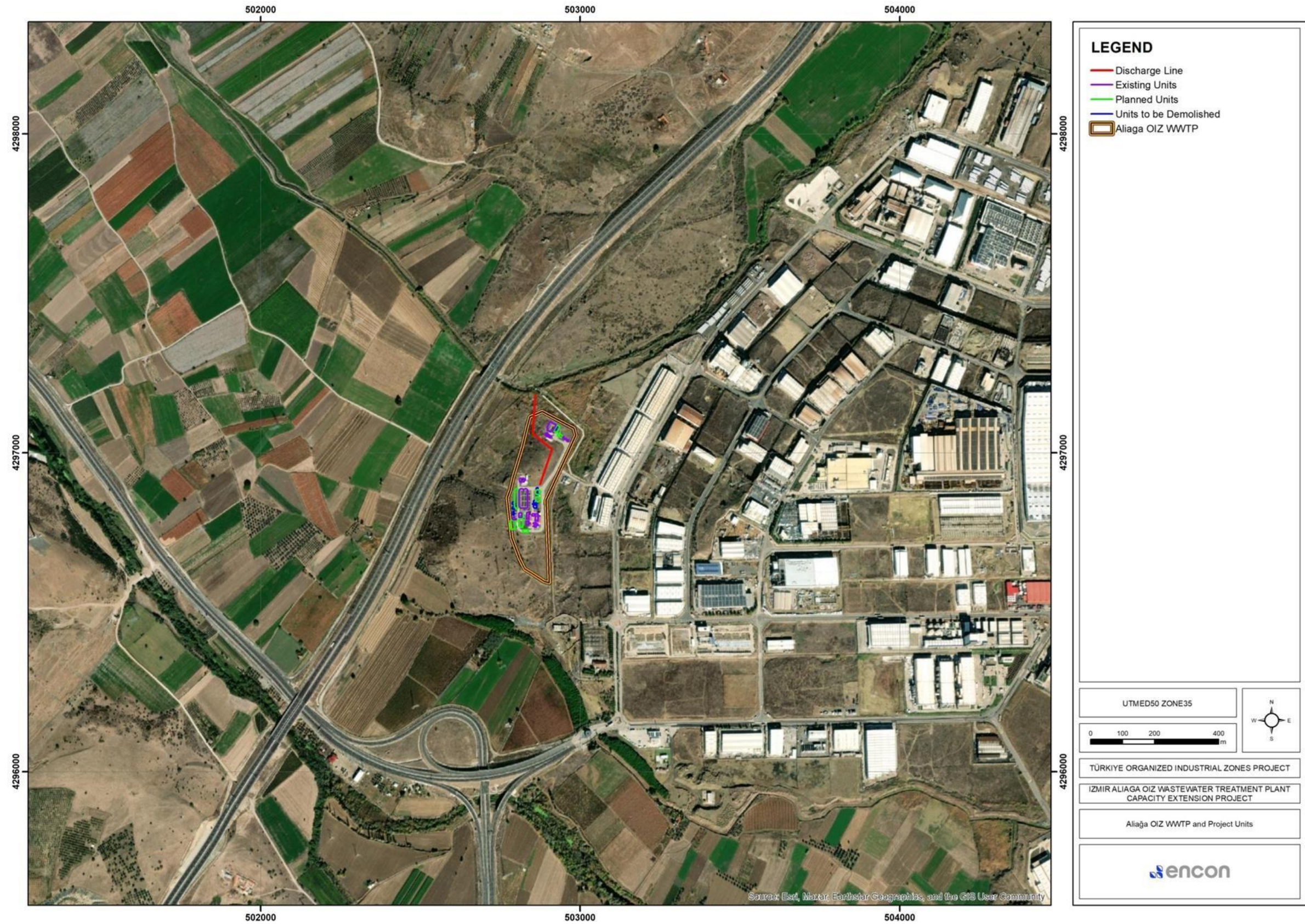


Figure 2.3 ALOIZ WWTP and Project Units



### ***Project Schedule***

According to the information obtained from ALOIZ, the consultancy tender phase of the Project will last for two months. After the consultancy period, the design review and tender document preparation, which will take 10 months for the project, will be carried out for all Project components. The construction tender phase and the construction phase are planned to last 12 months. After these phases, the Defect Liability Period (DLP) will last 12 months. The anticipated schedule of the Project is provided in Table 2.2.





Table 2.2 Time Schedule of the Project

Time Schedule for ALOIZ WWTP Implementation																																									
Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Contract Signing & PreConstruction Phase																																									
Construction																																									
Commissioning of the WWTP																																									
Defect Liability Period																																									





## 2.4 Permits and Management System of the OIZ

### 2.4.1 Management Systems of the OIZ

According to the Organized Industrial Zones (OIZs) Implementing Regulation (Official Gazette No. 30674 dated 02.02.2019), OIZ managements are responsible for the construction, maintenance and operation of wastewater infrastructure plants under the knowledge, control and supervision of the highest civil authority of the locality, provided that the conditions of the Water Pollution Control Regulation published in the Official Gazette No. 25687 dated 31.12.2004 are complied with.

Organized Industrial Zones WWTP Project Approval is given by the Ministry of Environment, Urbanization and Climate Change (MoEUCC). It is mandatory to obtain an environmental permit as of April 1, 2010, for the discharge of industrial wastewater into the receiving environment. ALOIZ WWTP has an environmental permit for wastewater discharge until 28.09.2027. The permit is presented in Annex-1.

### 2.4.2 Permits

The Project-related permits to be taken are as follows;

- Wastewater Treatment Plant Project Approval from Provincial Directorate of Environment, Urbanization and Climate Change (in planning phase of the Project),
- Construction License from İzmir Metropolitan Municipality (in pre-construction phase of the Project),
- Building License from İzmir Metropolitan Municipality (in pre-construction phase of the Project),
- Operation License from Provincial Directorate of Environment, Urbanization and Climate Change (before operation phase of the Project),
- Temporary Certificate of Operation from Provincial Directorate of Environment, Urbanization and Climate Change (after construction phase of the Project),
- Environmental Permit and License from Provincial Directorate of Environment, Urbanization and Climate Change (in commissioning phase of the Project),
- Wastewater Treatment Plant Identity Card from MoEUCC,
- Hazardous Waste Liability Insurance by insurance companies,
- Three-year Industrial Waste Management Plan from Provincial Directorate of Environment, Urbanization and Climate Change
- KSBS (Contaminated Field Information System) Notification to Provincial Directorate of Environment, Urbanization and Climate Change
- Requirements of Communiqué on Technical Personnel Working in Wastewater Treatment Plants.

ALOIZ will obtain all the permits to be obtained within the scope of the Project activities.

## 3 LEGAL FRAMEWORK

This chapter describes the main aspects of the legal and administrative framework to be followed in the design of this ESMP. It covers the various national legislation, the WB ESF, and applicable international conventions and standards to be complied with during different stages of the Project, including pre-construction, construction and operation. Details of legal framework is given in Annex 2 Legal Framework.

### 3.1 National Legislation



The key national laws and regulations presented in this chapter include the legal requirements to reduce the potential environmental impacts that may arise from the pre-construction, construction and operational activities of the Project. National Legislation related to the Project is presented in the following chapters under relevant subtopics.

The rest of the Turkish Legislation that the Project will comply with is presented in Table 3.1.

**Table 3.1 Turkish EHS Legislation Related to the Project**

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Phases
<b>National Environmental, Legal and Political Framework</b>			
<b>Waste Management</b>			
Regulation on the Control of Waste Batteries and Accumulators	August 31, 2004	25569	□ This regulation applies on battery and accumulator wastes that may occur as a result of office or vehicle use throughout the lifetime of the Project.
Regulation on the Control of Excavation Soil, Construction and Demolition Waste	March 18, 2004	25406	□ This regulation applies to activities that will cause to the generation of excavation soil, construction, and demolition wastes, especially during the construction phase of the Project.
Regulation on the Control of End-of-Life Tires	November 25, 2006	26357	□ This regulation applies on waste management of End-of-Life Tires generated during all phases of the project.
Regulation on the Control of End-of-Life Vehicles	December 30, 2009	27448	□ This regulation applies on waste management of End-of-Life Vehicles generated during all phases of the project.
Regulation on Waste Management	April 2, 2015	29314	□ This regulation is the main regulation applies on regarding the non-hazardous and hazardous wastes that will be generated as a result of all activities to be carried out throughout the lifetime of the Project.
Regulation on the Control of Waste Vegetable Oil	June 6, 2015	29378	□ This regulation applies on waste vegetable oils during especially the operation phase of the Project.
Regulation on the Control of Medical Waste	January 25, 2017	29959	□ This regulation applies for medical waste to be generated throughout the life of the Project.
Regulation on Zero Waste	July 12, 2019	30829	□ This regulation applies on the establishment of zero-waste management system that aims to protect the environment and human health and all resources regarding the wastes that will be generated as a result of all activities to be carried out throughout operation phase.
Regulation on the Management of Waste Oil	December 21, 2019	30985	□ This regulation applies on waste oils that may occur as a result of vehicle/equipment maintenance throughout the lifetime of the Project.
Regulation on the Control of Packaging Waste	June 26, 2021	31523	□ This regulation applies on packaging waste that will occur as a result of activities that can be carried out throughout the lifetime of the Project.
Regulation on Management of Waste Electrical and Electronic Equipment	December 26, 2022	32055	□ This regulation applies on electrical and electronic equipment waste as a result of activities to be carried out throughout the lifetime of the Project.
<b>Water Quality Control and Management</b>			
<b>Water Quality Control and Management</b>			
Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Phases



Regulation on Control of Water Pollution	December 31, 2004	25687	<input type="checkbox"/> This regulation applies on discharge of treated effluent during operation phase, wastewater generated by the site staff during preconstruction and construction phases.
Regulation on the Water Intended for Human Consumption	February 17, 2005	25730	<input type="checkbox"/> This regulation applies on the monitoring of the suitability for human consumption of water within the scope of the Project during all phases of the project.
Regulation on the Control of Pollution Caused by Hazardous Substances in and around Water Environment	November 26, 2005	26005	<input type="checkbox"/> This regulation applies on the hazardous substance impacts on the water and its surroundings that may occur during the Project lifetime.
Regulation on Urban Wastewater Treatment	January 8, 2006	26047	<input type="checkbox"/> This regulation applies on effluent quality and treatment efficiencies to be met during the operation phases of planned WWTP.
Regulation on the Protection of Groundwater against Pollution and Deterioration	April 7, 2012	28257	<input type="checkbox"/> This regulation applies on protection of groundwater sources against pollution during pre-construction, construction and operation phases.
Regulation on Surface Water Quality	November 30, 2012	28483	<input type="checkbox"/> This regulation applies on discharge of treated effluent and monitoring of water quality at receiving body during operation phase.
Regulation on the Monitoring of Surface Waters and Groundwater	February 11, 2014	28910	<input type="checkbox"/> This regulation applies on procedures and principles for revealing the current status of all surface waters and groundwater throughout the country in terms of quantity, quality and hydro morphological elements, monitoring waters with an approach based on ecosystem integrity, and ensuring standardization in monitoring and coordination between institutions and organizations that carry out monitoring during lifetime of Plan.
Regulation on Determination of Sensitive Water Bodies and the Areas Affecting these Bodies and Improvement of Water Quality	December 23, 2016	29927	<input type="checkbox"/> This regulation applies on determination of the receiving body sensitivity during preconstruction phase and discharge of treated effluent during operation phase.
Communiqué on Technical Procedures in Wastewater Treatment Plants	March 20, 2010	27527	<input type="checkbox"/> This Communiqué applies on the technical principles that will form the basis for wastewater treatment facility project design during preconstruction phase.
Communiqué on Technical Personnel Working in Wastewater Treatment Plants	May 23, 2019	30782	<input type="checkbox"/> This Communiqué applies on the procedures and principles regarding the qualifications, certification, duties, authorities and responsibilities of the technical personnel to be employed in order to ensure that the wastewater treatment plants are operated effectively, efficiently and in accordance with the legislation during operation phase.
<b>Air Quality Control and Management</b>			
Regulation on the Air Quality Assessment and Management	June 6, 2008	26898	<input type="checkbox"/> This regulation applies on activities that may cause the deterioration of the air quality during the lifetime of the Project, especially the construction phase of the Project.
Regulation on Industrial Air Pollution Control	July 3, 2009	27277	<input type="checkbox"/> This regulation applies on activities that may cause air pollution during the lifetime of the Project, especially the construction phase of the Project.
Regulation on the Control of Odor Causing Emissions	July 19, 2013	28712	<input type="checkbox"/> This regulation applies on odor nuisance may occur due to activities arising from the WWTP throughout the life of the project.
Regulation on the Monitoring of Greenhouse Gas Emissions	May 17, 2014	29003	<input type="checkbox"/> This regulation applies on greenhouse gas emissions during the lifetime of the Project.



Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Phases
Regulation on Exhaust Gas Emission Control	March 11, 2017	30004	☐ This regulation applies on exhaust gas emissions sourced from project vehicles, machinery and equipment during the lifetime of the Project.
<b>Noise Control and Management</b>			
Regulation on the Environmental Noise Emissions Caused by Equipment Used Outdoors	December 30, 2006	26392	☐ This regulation applies on the noise emissions caused by equipment used outdoors within the Project especially throughout the construction phase.
Regulation on Environmental Noise Control	November 30, 2022	32029	☐ This regulation applies on the management of noise emissions during lifetime of the Project.
<b>Soil Quality Control and Management</b>			
Regulation on Soil Pollution Control and Point Source Contaminated Fields	June 8, 2010	27605	☐ This regulation applies on the protection of soil against pollution during lifetime of the Project.
<b>Environmental Management, Permitting and Planning</b>			
Environmental Law No: 2872	August 11, 1983	18132	☐ This general law regulates the main environmental rules for all activities to be carried out during the lifetime of the Project.
Organized Industrial Zones Law No: 4562	April 15, 2000	24021	☐ This law regulates the principles for the establishment and operation of organized industrial zones should be followed at all phases of the project since the Project is Wastewater Treatment Plant Capacity Extension Project of OIZ.
Regulation on Environmental Permits and Licensing	September 10, 2014	29115	☐ This regulation applies on the required environmental permits and licenses at all phases of the Project.
Regulation on Wastewater Collection and Disposal Systems	January 6, 2017	29940	☐ This Regulation applies on the procedures and principles regarding the planning, design and projecting, construction and operation of wastewater collection and disposal systems during the lifetime of the Project.
Regulation on Environmental Impact Assessment	July 29, 2022	31907	☐ This regulation applies on the national environmental impact assessment processes of the Project including the basic infrastructure works of the OIZ.
<b>National Social, Legal and Political Framework</b>			
<b>Community Health and Safety</b>			
General Sanitation Law No: 1593	May 6, 1930	1489	☐ This law applies on take measures on health and sanitation during all phases of the Project.
Highways Traffic Law No: 2918	October 13, 1983	18195	☐ This law applies on ensuring traffic order on the highways during the all phases of the Project.
Regulation on Traffic Signs	June 19, 1985	18789	☐ This regulation applies on traffic sign for the purpose of ensuring traffic order and safety during all phases of the Project.
Regulation on Highway Traffic	July 18, 1997	23053	☐ This regulation applies on ensuring traffic order on the highways during the all phases of the Project.



Preparation, Completion and Cleaning Works Regulation	April 28, 2004	25446	<input type="checkbox"/> This regulation applies on the working conditions in the preparation, completion and cleaning works that must be carried out in order for the main work carried out in a workplace to be carried out in an orderly, healthy and safe manner during lifetime of the Project.
<b>Labor and Working Conditions</b>			
Labor Law No: 4857	June 10, 2003	25134	<input type="checkbox"/> This main law applies on the rights and responsibilities of the workers employed based on the labor contract with the employers, regarding the working conditions and working environment during the lifetime of the Project.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Phases
Regulation on the Procedures and Principles of Employment of Children and Young Workers	April 06, 2004	25425	<input type="checkbox"/> This regulation applies on determine the basis of the way children and young workers work without endangering their health and safety, physical, mental, moral and social development or education, and to prevent their economic exploitation during lifetime of the Project.
Social Security and General Health Insurance Law No: 5510	June 16, 2006	26200	<input type="checkbox"/> This law applies on health and safety measures to be taken during lifetime of the Project.
Regulation on the Protection of Buildings from Fire	December 19, 2007	26735	<input type="checkbox"/> This regulation applies on measures to be taken for fire protection during construction and operation phases.
Occupational Health and Safety Law No. 6331	June 30, 2012	28339	<input type="checkbox"/> This law applies on occupational health and safety measures to be taken during lifetime of the Project.
Communiqué on Occupational Health and Safety Hazard Classes List	December 26, 2012	28509	<input type="checkbox"/> This Communiqué applies on determination of hazard classes during lifetime of the Project.
Regulation on Risk Assessment for Occupational Health and Safety	December 29, 2012	28512	<input type="checkbox"/> This regulation applies on preparation of occupational health and safety risk assessment and all related principles to be followed during lifetime of the Project.
Regulation on Health and Safety Conditions Regarding Use of Work Equipment	April 25, 2013	28628	<input type="checkbox"/> This regulation applies on ensuring the health and safety conditions for the use of work equipment to be used during life of the Project.
Manual Handling Operations Regulation	July 24, 2013	28717	<input type="checkbox"/> This regulation applies on health and safety measures to be taken during manual handling activities at all phases of the Project.
Regulation on the Use of Personal Protection Equipment at Workplaces	July 2, 2013	28695	<input type="checkbox"/> This regulation applies on personal protection equipment to be used at lifetime of the Project.
Regulation on the Protection of Workers Against the Dangers of Explosive Environments	April 30, 2013	28633	<input type="checkbox"/> This regulation applies on measures to be taken in case the use of explosive usage during preconstruction and construction phases.
Regulation on Emergency Situations in Workplaces	June 18, 2013	28681	<input type="checkbox"/> This regulation applies on measures to be taken during emergency situations in workplaces during lifetime of the Project.
Regulation on Health and Safety Precautions Regarding Working with Chemicals	August 12, 2013	28733	<input type="checkbox"/> This regulation applies on chemical handling and necessary precautions in workplaces during lifetime of the Project.
Regulation on the Methods and Essentials of Occupational Health and Safety Trainings for Workers	May 15, 2013	28648	<input type="checkbox"/> This regulation applies on health and safety training to be performed during lifetime of the Project.



Regulation on the Protection of Workers from Noise Related Risks	July 28, 2013	28721	<input type="checkbox"/> This regulation applies on health and safety measures to be taken against the noise impacts during lifetime of the Project.
Regulation on the Protection of Workers from Vibration Related Risks	August 22, 2013	28743	<input type="checkbox"/> This regulation applies on health and safety measures to be taken against the vibration impacts during lifetime of the Project.
Regulation on Management of Dust	November 5, 2013	28812	<input type="checkbox"/> This regulation applies on management of to be generated dust during pre-construction and construction phases.
Regulation on Health and Safety Signs	September 11, 2013	28762	<input type="checkbox"/> This regulation applies on health and safety signs to be placed during lifetime of the Project.
Regulation on the Occupational Health and Safety for Temporary or Fixed Term Jobs	August 23, 2013	28744	<input type="checkbox"/> This regulation applies on health and safety measures to be taken for temporary workers during lifetime of the Project.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Phases
Regulation on the Occupational Health and Safety in Construction	October 5, 2013	28786	<input type="checkbox"/> This regulation applies on constructional health and safety measures to be taken during construction phase.
First Aid Regulation	July 29, 2015	29429	<input type="checkbox"/> This regulation applies on in case of a first aid requirement during construction and operation phases.
Regulation on Personal Protection Equipment	May 1, 2019	30761	<input type="checkbox"/> This regulation applies on personal protection equipment to be used during construction and operation phases.

#### **Management of Chemicals and Other Dangerous Substances**

Regulation on the Classification, Labelling and Packaging of Materials and Mixtures	December 11, 2013	28848	<input type="checkbox"/> This regulation applies on chemicals and mixtures to be used during lifetime of the Project.
Regulation on Material Safety Data Sheets on Hazardous Materials and Mixtures	December 13, 2014	29204	<input type="checkbox"/> This regulation applies on preparation and distribution of safety data sheets in order to ensure effective control and surveillance against the negative human health and the environment effects of hazardous substances and mixtures that may be used during lifetime of the Project.
Regulation on Health and Safety Measures in Working with Asbestos	January 1, 2013	28539	This Regulation determines the limit values and other special measures to prevent the exposure of employees to asbestos dust in asbestos removal, demolition, repair, maintenance and removal works and to protect them from health risks arising from this exposure.
Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals	June 23, 2017	30105	<input type="checkbox"/> This regulation applies on to ensure a high level of protection of human health and the environment during the construction and operation phases, to evaluate the damages of the substances used, to have information on the registration, evaluation, permission and restriction of those chemicals.
Regulation on the Road Transportation of Hazardous Goods	June 18, 2022	31870	<input type="checkbox"/> This regulation applies on hazardous goods to be transported during lifetime of the Project.

#### **Land Use**

Expropriation Law No: 2942	November 4, 1983	18215	<input type="checkbox"/> This law applies on management of Expropriation during the planning phase of the Project.
Soil Conservation and Land Use Law No: 5403	July 19, 2005	25880	<input type="checkbox"/> This law applies on management of change in the land use during the planning phase of the Project.



Regulation on the Protection, Usage and Planning of Agricultural Lands	December 9, 2017	30265	<input type="checkbox"/> This regulation applies on management of change in the land use during the planning phase of the Project.
<b>Stakeholder Engagement</b>			
Use of the Right to Petition Law No: 3071	November 10, 1984	18571	<input type="checkbox"/> This law applies on management of proposal/grievance during lifetime of the Project.
Right to Information Law No: 4982	October 24, 2003	25269	<input type="checkbox"/> This law applies on exercise of the right to information by individuals as a requirement of democratic and transparent governance.
Regulation on the Principles and Procedures for the Enforcement of the Law on the Right to Information	April 27, 2004	25445	<input type="checkbox"/> This regulation applies on people's usage of right to information in accordance with democratic and transparent management during lifetime of the Project.
<b>Others</b>			
Law on Conservation of Cultural and Natural Assets No. 2863	July 23, 1983	18113	<input type="checkbox"/> This regulation applies on measures to be taken during chance finds at the construction phase.
<b>Legislation</b>	<b>Official Gazette Date</b>	<b>Official Gazette Number</b>	<b>Implications for the Project Phases</b>
Regulation on the Implementation of the Law Concerning Private Security Services	October 7, 2004	25606	<input type="checkbox"/> This regulation applies on private security services to be used during construction and operation services.
Regulation on Contractors and Sub-contractors	September 27, 2008	27010	<input type="checkbox"/> This regulation applies on management of the conditions for the establishment of the principal employer-subcontractor relationship, the notification and registration of the workplace belonging to the subcontractor, the issues that should be included in the subcontractor agreement.
Regulation Concerning the Increase in the Efficiencies of Energy Consumption and Energy Resources	October 27, 2011	28097	<input type="checkbox"/> This regulation applies on the procedures and principles regarding the effective use of energy, prevention of energy waste, and increasing efficiency in the use of energy resources and energy to protect the environment during lifetime of the Project.
Protection of Personal Data Law No: 6698	April 7, 2016	29677	<input type="checkbox"/> This law applies on protection of fundamental rights and freedoms of individuals, especially the privacy of private life, in the processing of personal data during lifetime of the Project.
Regulation Concerning the Ozone Depleting Substances	April 7, 2017	30031	<input type="checkbox"/> This regulation applies on ozone depleting substances to be used during construction and operation phases.
Building Earthquake Regulation	March 18, 2018	30364	<input type="checkbox"/> This regulation applies on necessary rules and minimum conditions for the design and construction of all or parts of building-type structures under the influence of earthquakes and for the evaluation and strengthening of the performances of existing buildings under the influence of earthquakes during preconstruction and construction phases.

\*Relevant amendments of the listed legislation will be applicable.

Izmir Aliaga Organized Industry Zone (ALOIZ) shall comply with the requirements of the current national legislation and codes of practice and fulfill all other legal requirements. Therefore, during each stage of the planned Project and implementation of related management plans, all activities will be carried in accordance with certain standards and limits set by the above-mentioned laws and regulations and any license and/or permit required for the upcoming stages of the Project will be acquired accordingly.



### 3.1.1 National Environmental, Health and Safety Legislation

Environmental Law No. 2872, which is ratified in August 1983 (Official Gazette dated 11.08.1983 and numbered 18132), is one of the principal legislations related to the Project. Several by-laws and decrees are enforced under the Environmental Law.

Occupational Health and Safety Law No. 6331, which is ratified June 2012 (Official Gazette dated 30.06.2012 and numbered 28339), is other principal legislation related to the Project. Occupational Health and Safety Law enforces various by-laws and decrees to regulate and uphold health and safety standards.

According to the EIA Regulation, if the capacity of the treatment plant is above 30,000 m<sup>3</sup>/day, it is included in the Annex-II list, and if it is above 50,000 m<sup>3</sup>/day, it is included in the Annex-I list In

3  
Aliağa OIZ Wastewater Treatment Plant, the capacity of the plant will be increased by 8,500 m<sup>3</sup>/day. Therefore, the project will serve with a capacity of 12,000 m<sup>3</sup>/day. Thus, this project is not on the Annex-1 and Annex-2 lists and there is no need for an EIA study.

İzmir Aliağa Organized Industry Zone (ALOIZ) shall comply with the requirements of the current national legislation and codes of practice and fulfill all other legal requirements. Therefore, during each stage of the planned Project and implementation of related management plans, all activities will be carried in accordance with certain standards and limits set by the laws and regulations attached in Annex 2 and any license and/or permit required for the upcoming stages of the Project will be acquired accordingly.

## 3.2 International Agreements and Standards

### 3.2.1 World Bank Environmental and Social Framework (ESF)

Since the main finance source of the Project is WB, the Project must comply with the good international industry practice, including WB Environmental and Social Standards (ESSs), guidelines, and best practices documents alongside the national legislation.

The World Bank Group (WBG) Environmental, Health and Safety (EHS) Guidelines constitutes technical reference resources that include general and sector specific examples of international good sector practices. It includes the information on applicable environmental, the health and safety issues for all industrial sectors. . EHS Guidelines include performance levels and measurements that can be achieved at newly installed facilities using WBG's available technologies at reasonable cost, and which will be complied with as well.

### 3.2.2 Comparison of Turkish EIA Regulation and WB ESSs

The Project and the social and environmental elements in the Area of Influence (Aol) of the Project include elements or activities that are related to the scope of ESS1, ESS2, ESS3, ESS4, ESS6 and ESS10. The main objectives of these standards within the scope of the Project are presented below.

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts,
- ESS2: Labour and Working Conditions,
- ESS3: Resource Efficiency and Pollution Prevention and Management,
- ESS4: Community Health and Safety,



- ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources,
- ESS10: Stakeholder Engagement and Information Disclosure,

ESS7 “Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities” and ESS9 “Financial Intermediaries” are not relevant to this project as there are no indigenous groups in Türkiye that meet the definition provided in ESS7 and the project does not involve a Financial Intermediary. When any OIZ’s area is being finalized, the Ministry of Culture and Tourism gives information about cultural and historical areas. In case of any cultural and historical area is located within the planned OIZ area in that area, those areas are excluded from the OIZ’s area. In case of any possible additional land requirement for the sub-projects outside the existing OIZ boundaries, subprojects that will have impacts on known and protected cultural heritage will be considered as ineligible and screened out from the project. Therefore, “ESS 8: Cultural Heritage” is not relevant within the project. But Chance Find Procedures are included.

The gap analysis between the WB ESSs triggered by the Project and Turkish EIA Regulation and legal framework is presented in Annex 2 Table- 6.



### 3.3 Project Standards

This section aims to provide the standards that are applicable to the Project. The most stringent amongst the national legislations and international standards is defined as Project Standard (see below table) that the Project will comply with.

**Table 3.2 Environmental and Social Standards of the Project**

Environmental Standards						
No	Topic	National Standards/ Requirements	Limit Values in National Legislation	International Standards/ Requirements	Limit Values in International Legislation	Project Standards
1	Noise	Regulation on Environmental Noise Control (Official Gazette Date/Number: 30.11.2022/32029) Annex- 2 "Table-1 Limit Values for ambient noise level"	Noise Source: Industrial Facilities, Transportation: Day time (07:00-19:00): LA <sub>eq, 5 min.</sub> < 65 dB(A) Evening time (19:00-23:00): LA <sub>eq, 5 min.</sub> < 60 dB(A) Night time (23:00-07:00): LA <sub>eq, 5 min.</sub> < 55 dB(A)	WBG General EHS Guidelines: Environmental Noise Management Table 1.7.1 – Noise Level Guidelines Noise impacts should not exceed the levels specified in the Table 1.7.1, or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.	Receptor: Residential; institutional, educational: Day time (07:00-22:00): One Hour L <sub>Aeq</sub> dB(A) < 55 dB(A) Night time (22:00-07:00): One Hour L <sub>Aeq</sub> dB(A) < 45 dB(A)  Receptor: Industrial, commercial.: Day time (07:00-22:00): One Hour L <sub>Aeq</sub> dB(A) < 70 dB(A) Night time (22:00-07:00): One Hour L <sub>Aeq</sub> dB(A) < 70 dB(A)	Receptor: Industrial, commercial:  Day time (07:00-19:00): LA <sub>eq, 5 min.</sub> < 65 dB(A) Evening time (19:00-23:00): LA <sub>eq, 5 min.</sub> < 60 dB(A) Night time (23:00-07:00): LA <sub>eq, 5 min.</sub> < 55 dB(A)
2	Air Quality	Regulation on the Assessment and Management of Air Quality (Official Gazette Date/Number: 06.06.2008/26898) Annex-1	PM <sub>10</sub>  1-Year: 40 µg/m <sup>3</sup> 24-Hour: 50 µg/m <sup>3</sup> (not to be exceedance more than 35 times per year)	WBG General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality Table 1.1.1.: WHO Ambient Air Quality Guidelines	PM <sub>10</sub> (i.e.3-4)  1-Year: 20 µg/m <sup>3</sup> 24-Hour: 50 µg/m <sup>3</sup> (99 <sup>th</sup> percentile exceedance days per year) (i.e.3-4)  PM <sub>2.5</sub>  1-Year: 10 µg/m <sup>3</sup> 24-Hour: 25 µg/m <sup>3</sup> (99 <sup>th</sup> percentile exceedance days per year)	Turkish Legislation has not described a limit value for PM <sub>2.5</sub> . Therefore, in the assessment of the measurement result, the limit value set forth by the Ambient Air Quality and Cleaner Air for Europe (Directive 2008/50/EC) and WBG 24-hour limit values are used, which is 25 µg/m <sup>3</sup> for both of them.  PM <sub>10</sub>  1-Year: 20 µg/m <sup>3</sup> 24-Hour: 50 µg/m <sup>3</sup> (99 <sup>th</sup> percentile (i.e.3-4) exceedance days per year)  PM <sub>2.5</sub>  1-Year: 10 µg/m <sup>3</sup> 24-Hour: 25 µg/m <sup>3</sup> (99 <sup>th</sup> percentile (i.e.3-4) exceedance days per year)
		Regulation on Industrial Air Pollution Control (Official Gazette Date/Number: 03.07.2009/27277 revised in the Official Gazette Date/Number: 6.11.2020/31296)) Annex- 2 "Table-2.1 Mass Flows"	Non-stack Mass Flow  CO: 50 kg/h Dust: 1 kg/h NO <sub>x</sub> (as NO <sub>2</sub> ): 4 kg/h SO <sub>x</sub> : 6 kg/h TOC: 3 kg/h	WBG General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality	WBG General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality mention that: "Emissions do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines"  Since National Standards exist, compliance with National Standards will be ensured.	The limit values for exhaust gas defined in Industrial Air Pollution Control Regulation will be complied in Project.  Non-stack Mass Flow  CO: 50 kg/h Dust: 1 kg/h NO <sub>x</sub> (as NO <sub>2</sub> ): 4 kg/h SO <sub>x</sub> : 6 kg/h



						TOC: 3 kg/h
3	Effluent Water Quality	Regulation on Water Pollution Control (Official Gazette Date/Number: 31.12.2004/25687 and revised in the Official	Discharge Standards for the Treated Process Water to Receiving Environment in the Regulation on Water Pollution Control for planned WWTP:	WBG General EHS Guidelines: Environmental Wastewater and Ambient Water Quality	WBG General EHS Guidelines EnvironmentalWastewater and Ambient Water Quality mention that: "Compliance with national or local standards for sanitary wastewater discharges or, in their absence,	The discharge criteria of the WWTP have been decided on the basis of the Water Pollution Control Regulation, Urban Wastewater Treatment Regulation, EU

		Gazette Date/Number 12.05.2023/32188.) Wastewater Discharge Standards Defined in Table 19-Discharge Standards of Mixed Industrial Wastewater to The Receiving Environment (Small and Large Organized Industrial Zones and Other Industries for Which Sector cannot be Determined)	COD: 250 mg/L TSS: 200 mg/L Oil and grease: 20 mg/L Total Phosphorus(P): 2 mg/L Total Chrome: 2 mg/L Chrome (Cr <sup>+6</sup> ): 0.5 mg/L Lead (Pb): 2 mg/L Total Cyanide (CN <sup>-</sup> ): 1 mg/L Cadmium (Cd): 0.1 mg/L Ferrous (Fe): 10 mg/L Fluoride (F <sup>-</sup> ): 15 mg/L Copper (Cu): 3 mg/L Zinc (Zn): 5 mg/L Mercury (Hg): 0.05 mg/L Sulphate (SO <sub>4</sub> <sup>-2</sup> ): 1500 mg/L Total Kjeldahl Nitrogen (TKN): 20 mg/L Fish Bioassay (TDF): 10 Color: 280 Pt-Co pH:6-9				the indicative guideline values applicable to sanitary wastewater discharges shown in Table 1.3.1." Since National Standards exist compliance with National Standards will be ensured.	directives and WBG EHS Guidelines: Environmental Wastewater and Ambient Water Quality.  COD: 250 mg/L TSS: 200 mg/L Oil and grease: 20 mg/L Total Phosphorus (P):: 2 mg/L Total Chrome: 2 mg/L Chromium (Cr <sup>+6</sup> ): 0.5 mg/L Lead (Pb): 2 mg/L Total Cyanide (CN <sup>-</sup> ): 1 mg/L Cadmium (Cd): 0.1 mg/L Ferrous (Fe): 10 mg/L Fluoride (F <sup>-</sup> ): 15 mg/L Copper (Cu): 3 mg/L Zinc (Zn): 5 mg/L Mercury (Hg): 0.05 mg/L Sulphate (SO <sub>4</sub> <sup>-2</sup> ): 1500 mg/L Total Kjeldahl Nitrogen (TKN): 20 mg/L Fish Bioassay (TDF): 10 Color: 280 Pt-Co pH:6-9																																																																
4	Surface Water Quality	Regulation on Surface Water Quality-Water Quality Classes (Official Gazette Date/Number: 30.11.2012/ 28483) Annex – 5)	<table><tr><th rowspan="2">Parameter</th><th rowspan="2">Unit</th><th colspan="3">Surface Water Quality Regulation Water Quality Classes</th></tr><tr><th>I (very good )</th><th>II (good )</th><th>III (moderate)</th></tr><tr><td>Ammonium (NH<sub>4</sub><sup>+</sup>)</td><td>mg/L</td><td>&lt;0.2</td><td>1</td><td>&gt;12</td></tr><tr><td>Colour</td><td>m-1</td><td>RES 436 nm: ≤ 1,5 RES 525 nm: ≤ 1,2 RES 620 nm: ≤ 0,8</td><td>RES 436 nm: 3 RES 525 nm: 2,4 RES 620 nm: 1,7</td><td>RES 436 nm: &gt; 4,3 RES 525 nm: &gt; 3,7 RES 620 nm: 2,5</td></tr><tr><td>Oil and Grease</td><td>mg/L</td><td>&lt;0.2</td><td>0.3</td><td>&gt;0.3</td></tr><tr><td>Biological Oxygen Demanded BOD(BOD<sub>5</sub>)</td><td>mg/L</td><td>&lt;4</td><td>8</td><td>&gt;8</td></tr></table>	Parameter	Unit	Surface Water Quality Regulation Water Quality Classes			I (very good )	II (good )	III (moderate)	Ammonium (NH <sub>4</sub> <sup>+</sup> )	mg/L	<0.2	1	>12	Colour	m-1	RES 436 nm: ≤ 1,5 RES 525 nm: ≤ 1,2 RES 620 nm: ≤ 0,8	RES 436 nm: 3 RES 525 nm: 2,4 RES 620 nm: 1,7	RES 436 nm: > 4,3 RES 525 nm: > 3,7 RES 620 nm: 2,5	Oil and Grease	mg/L	<0.2	0.3	>0.3	Biological Oxygen Demanded BOD(BOD <sub>5</sub> )	mg/L	<4	8	>8	WBG General EHS Guidelines: Environmental Wastewater and Ambient Water Quality	WBG General EHS Guidelinesr source - Environmental water c Wastewater and Ambient W mention that: " Discharges water should not result in concentrations in excess of local water quality criteria or, in the local criterion  Since National Standard: compliance with National Standards be ensured.	<table><tr><th rowspan="2">Parameter</th><th rowspan="2">Unit</th><th colspan="3">Surface Water Quality Regulation Water Quality Classes</th></tr><tr><th>I (very good )</th><th>II (good )</th><th>III (moderate)</th></tr><tr><td>Ammonium (NH<sub>4</sub><sup>+</sup>)</td><td>mg/L</td><td>&lt;0.2</td><td>1</td><td>&gt;12</td></tr><tr><td>Colour</td><td>m-1</td><td>RES 436 nm: ≤ 1,5 RES 525 nm: ≤ 1,2 RES 620 nm: ≤ 0,8</td><td>RES 436 nm: 3 RES 525 nm: 2,4 RES 620 nm: 1,7</td><td>RES 436 nm: &gt; 4,3 RES 525 nm: &gt; 3,7 RES 620 nm: 2,5</td></tr><tr><td>Oil and Grease</td><td>mg/L</td><td>&lt;0.2</td><td>0.3</td><td>&gt;0.3</td></tr><tr><td>Biological Oxygen Demanded BOD(BOD<sub>5</sub>)</td><td>mg/L</td><td>&lt;4</td><td>8</td><td>&gt;8</td></tr><tr><td>Dissolved Oxygen (DO)</td><td>mg/L</td><td>&gt;8</td><td>6</td><td>&lt;6</td></tr><tr><td>Conductivity</td><td>µS/cm</td><td>&lt;400</td><td>1000</td><td>&gt;1000</td></tr></table>	Parameter	Unit	Surface Water Quality Regulation Water Quality Classes			I (very good )	II (good )	III (moderate)	Ammonium (NH <sub>4</sub> <sup>+</sup> )	mg/L	<0.2	1	>12	Colour	m-1	RES 436 nm: ≤ 1,5 RES 525 nm: ≤ 1,2 RES 620 nm: ≤ 0,8	RES 436 nm: 3 RES 525 nm: 2,4 RES 620 nm: 1,7	RES 436 nm: > 4,3 RES 525 nm: > 3,7 RES 620 nm: 2,5	Oil and Grease	mg/L	<0.2	0.3	>0.3	Biological Oxygen Demanded BOD(BOD <sub>5</sub> )	mg/L	<4	8	>8	Dissolved Oxygen (DO)	mg/L	>8	6	<6	Conductivity	µS/cm	<400	1000	>1000
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5	Groundwater Quality	Regulation on the Protection of Groundwater Against Pollution and Deterioration (Official Gazette Date/Number: 07.04.2012/ 28257) (Annex – 3)	<p>Nitrate: 50 mg/L Total Pesticide: 0.5 µg/L</p> <p>For the other parameters given below (included Annex-3 of the Regulation) no limit value is define</p> <p>Ammonium in Arsenic d.</p>	WBG General EHS Guidelines: Environmental Wastewater and Ambient Water Quality	Environmental-Wastewater and Ambient Water Quality mention that: Properly designed and installed in accordance with local regulations and guidance to prevent any hazard to public health or contamination of land, surface or groundwater.	Nitrate: 50 mg/L Total Pesticide: 0.5 µg/L																																																																																																																													
			Mercury Conductivity Cadmium Chloride Lead Sulfate Tetrachloroethylene Trichloroethylene Salinity			For the other parameters (Ammonium, Arsenic, Mercury, Conductivity, Cadmium Chloride, Lead, Sulfate, Tetrachloroethylene, Trichloroethylene, Salinity) limit values defined for the surface waters will be used.																																																																																																																													
4	Soil Quality	Regulation on Soil Pollution Control and Point Source Contaminated Fields (Official Gazette Date/Number: 08.06.2010/27605 revised in the Official Gazette Date/Number: 11.07.2013/28704) <sup>1</sup>	Antimony: 31 mg/kg Arsenic: 0.4 mg/kg Boron: - Cadmium: 70 mg/kg Chromium (VI): 235 mg/kg Copper: 3129 mg/kg Lead: 400 mg/kg Mercury: 23 mg/kg Nickel: 1564 mg/kg Selenium: 391 mg/kg Silver: 391 mg/kg Zinc: 23464 mg/kg Tin: 46929 mg/kg Titanium: 312857 mg/kg Total Petroleum Hydrocarbons (TPH): - Total Organic Halogens (TOX): -	WBG General EHS Guidelines: Environmental	Since limit values regarding soil quality are not given at WBG General EHS Guidelines: Environmental, compliance with National Standards will be ensured.	Antimony: 31 mg/kg Arsenic: 0.4 mg/kg Boron: - Cadmium: 70 mg/kg Chromium (VI): 235 mg/kg Copper: 3129 mg/kg Lead: 400 mg/kg Mercury: 23 mg/kg Nickel: 1564 mg/kg Selenium: 391 mg/kg Silver: 391 mg/kg Zinc: 23464 mg/kg Tin: 46929 mg/kg Titanium: 312857 mg/kg Total Petroleum Hydrocarbons (TPH): - Total Organic Halogens (TOX):-																																																																																																																													
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<sup>1</sup> The parameters are selected by considering the classification given in Regulation on Soil Pollution Control and Point Source Contaminated Fields Annex-2, Table-2. NACE Code: 1330 (defined in Pollution Control and Point Source Contaminated Fields). Also limit values given in Regulation on Soil Pollution Control and Point Source Contaminated Fields Annex-1 are taken into consideration.



1	Labor and working conditions	Labor Law (No. 4857), published in the Official Gazette no. 25134 dated 10 June 2003	<b>ESS2</b> Labor and Working Conditions	ESS2 Labor and Working Conditions ESF Guidance Note 2 Labor and Working Conditions	Turkish national laws and regulations regarding labour and working conditions satisfies ESS2 requirements. Worker grievance mechanism is the main gap between national legislative requirement and ESS2.  Labor Management Procedures (LMP) is developed as a part of E&S documents of the main project. LMP will also provide guidance on the required mitigations or management implementations such as workers.	Comply with national laws / regulations, international standards and ESS2 LMP of TOIZP
2	Labor and working conditions	Law on Occupational Health and Safety (No. 6331), published in the Official Gazette no. 28339 dated 30 June 2012	<b>ESS2</b> Labor and Working Conditions	ESS2 Labor and Working Conditions ESF Guidance Note 2 Labor and Working Conditions	Occupational Health and Safety plan, risk assessment, emergency response plan, explosion protection document will be prepared.	Comply with national laws / regulations, international standards, ESS2, WB OHS
3	Labor and working conditions	Regulation on Contractors and Sub-contractors, published in the Official Gazette no. 27010 dated 27 September 2008	<b>ESS2</b> Labor and Working Conditions	ESS2 Labor and Working Conditions ESF Guidance Note 2 Labor and Working Conditions	Labor Management Procedures (LMP) is developed as a part of E&S documents. LMP will also provide guidance on the required mitigations or management implementations such as workers.	Comply with national laws / regulations, international standards. ESS2, ESS4, LMP of TOIZP
4	Community Health and Safety	Law on Occupational Health and Safety (No. 6331), published in the Official Gazette no. 28339 dated 30 June 2012	<b>ESS4</b> Community Health and Safety	ESS4 Community Health and Safety WBG General EHS Guidelines: Environmental ESF Guidance Note 4 Community Health and Safety English	Project level management of specific risks such as labour influx, sexual exploitation and abuse and sexual harassment are the key gaps. The plans such as Traffic Management Plan and Community Health and Safety Plan etc. will be prepared.	Comply with national laws / regulations, international standards. ESS4, WB OHS
5	Stakeholder engagement	Laws on Right to Information (No. 4982), published in the Official Gazette no 25269 dated 24 October 2003	<b>ESS10</b> Stakeholder Engagement and Information Disclosure	ESS2 Labor and Working Conditions ESF GuidanceNote 10 Stakeholder Engagement and Information Disclosure English	Effective and transparent stakeholder engagement is the main gap in terms of ESS10 requirement. Within this scope, a Stakeholder Engagement Plan required to identify the different stakeholders (project-affected parties and other interested parties including disadvantaged or vulnerable groups). Stakeholder engagement should be a continuous process.	Comply with national laws / regulations, international standards. ESS10, SEF of TOIZP , SEP
6	Environmental and Social Risks and Impacts	Regulation on the Environmental Impact Assessment (EIA) published in the official Gazette no. 31907 dated 29 July 2022	<b>ESS1</b> Assessment and Management of Environmental and Social Risks and Impacts	ESS1 Assessment and Management of Environmental and Social Risks and Impacts WBG General EHS Guidelines: Environmental	Robust social risk assessments and required plans addressing relevant mitigations are the main gaps between Turkish regulation and ESS1.	Comply with national laws / regulations, international standards. WB ESF, ESMF of TOIZP

## 4 METHODOLOGY

One of the tasks under the scope of the Project is the preparation of an Environmental and Social Management Plan (ESMP) in accordance with the WB ESF. Although ESMP is not a requirement of national legislation, the ESMP should also comply with national legislation requirements. Accordingly, this ESMP has been prepared to assess and identify the potential environmental and social impacts and risks arising from development of the Project and recommend mitigation measures and describes the monitoring and institutional requirements necessary to implement this Plan.

The assessment identifies and evaluates the significance of potential impacts (positive or negative) and risks on identified receptors and resources according to defined assessment criteria. Secondly, the measures that will be taken to avoid or minimize any potential adverse effects and enhance potential benefits are described, and the significance of the residual impacts following mitigation are assessed.

The impact assessment is based on secondary data from desk study and outcomes of site visits. The assessment of environmental and social impacts/risks has been done based on the criteria provided below using mainly expert judgement, relevant standards and guidelines:

- **Nature of the impact:** Positive (+), Negative (-)
- **Type of Impact:** Direct, Indirect, Cumulative
- **Extent/area of Impact:** On-site/project footprint, Local, Regional, National
- **Duration of Impact:** Short term, Mid-term, Long term, Permanent
- **Likelihood of Impact Occurrence:** Very likely/certain, Likely, Unlikely

The magnitude and severity of the adverse impacts have been assessed based on the criteria given above and significance of the impacts has been determined based on this assessment and sensitivity of the receiver/source exposed to the impact, as much as possible. The matrix given in Table 4.1 combines the sensitivity information with the magnitude of impacts. The significance of the impact is first designated without mitigation measures and then evaluated with proposed mitigation measures. This evaluation serves to determine the significance of the residual impacts (impact left after employing mitigation measures).

**Table 4.1 Impact Significance Matrix\***

Sensitivity of Receptor	Magnitude of Impact			
	High	Medium	Low	Negligible/None
High	High	High	Medium	Negligible/None
Medium	High	Medium	Low	Negligible/None
Low	Medium	Low	Low	Negligible/None

\* Adapted from Scottish Natural Heritage – A handbook on environmental impact assessment, 2013



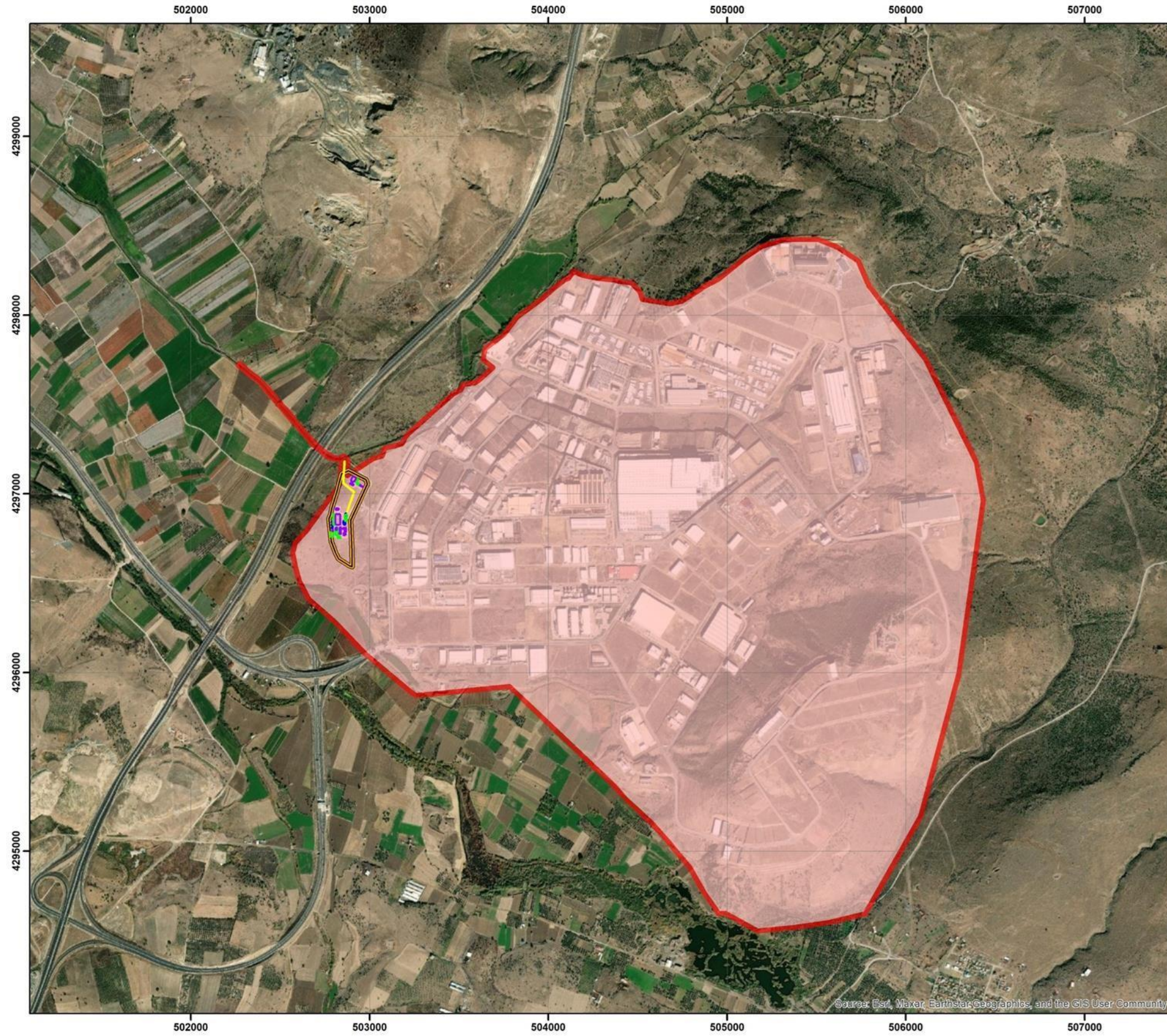
## 5 ENVIRONMENTAL BASELINE OF THE PROJECT

The Area of Influence (Aol) refers to the area significantly affected, influenced, or impacted by a particular project, development, or activity. In the context of wastewater treatment plants (WWTP), the Aol encompasses areas that may experience direct or indirect effects resulting from the construction and operation of the facility.

For this specific project, the chosen Aol extends to include the entirety of the ALOIZ, Çoraklar Neighbourhood settlement area. This deliberate selection is based on determining the potential of project activities to directly and indirectly affect environmental conditions, and the stakeholders within the surrounding areas. The public service buildings, ALOIZ, and Çoraklar Neighbourhood settlement area are included in the Aol considering the wind direction and potential impacts during construction phase such as noise, dust emissions, and vehicle traffic. Baseline information is presented under the following headings, taking into account the Area of Influence.

Aliağa OIZ and its discharge area, Kunduz Creek, were included in the impact area by taking into account wind direction and possible impacts such as noise, dust emissions and vehicle traffic during the construction phase. The Project's Area of Influence is given in Figure 5.1.





### LEGEND

- Discharge Line
- Existing Units
- Planned Units
- Units to be Demolished
- Aliaga OIZ WWTTP
- Area of Influence

UTMED50 ZONE35



TÜRKİYE ORGANIZED INDUSTRIAL ZONES PROJECT

İZMİR ALIAGA OIZ WASTEWATER TREATMENT PLANT  
CAPACITY EXTENSION PROJECT

Area of Influence

encon

Figure 5.1 Area of Influence (Aol)



## 5.1 Project Location

Aliağa is a district of İzmir province. İzmir is a major city on the west coast of Türkiye and Aliağa is located north of İzmir. Aliağa is known for its industrial port, which is one of the largest and busiest ports in Türkiye and handles a variety of cargo, including petroleum and petrochemical products. It is an important industrial and transportation center in the region. Aliağa Ports are the intersection point of İzmir-Bandırma Railway and İzmir-Çanakkale Highway. The surface area of

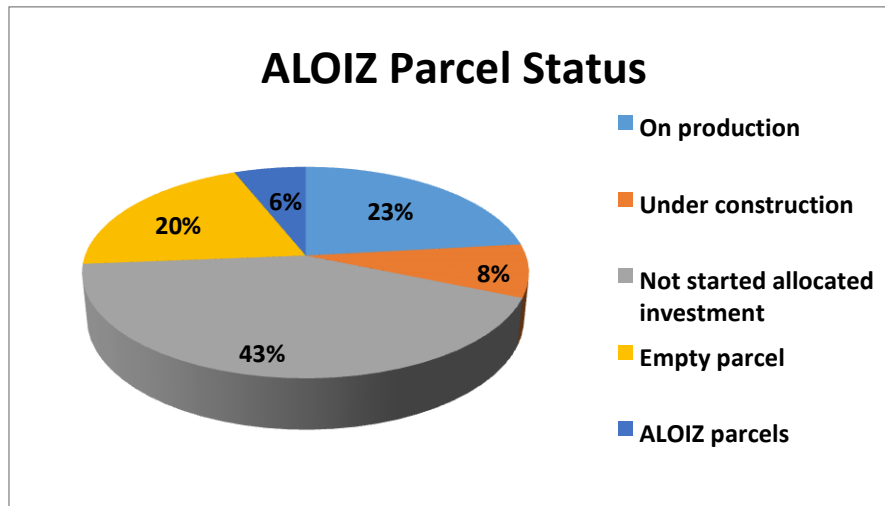
Aliağa district of İzmir is 412.5 km<sup>2</sup>.

Aliağa Organized Industrial Zone Wastewater Treatment Plant Location is located in İzmir province, Aliağa District Çoraklar Neighborhood, 141 island and parcel 17, which is located within the borders of the OIZ. There is a total of 357 parcels in Aliağa Organized Industrial Zone, which has an area of approximately 10,000 hectares. The map showing the project location is presented in Figure 2.1.

## 5.2 Land Use

Currently, there are active beneficiaries in 81 parcels out of 357 in the region. In addition, construction work continues on 30 parcels, and although 151 parcels have been allocated, investment has not started yet. 72 parcels have not been allocated to investors yet. The graph showing the parcel statuses is shown in Figure 5.2. There is a total area of 4,819,281.16 m<sup>2</sup> as an industrial zone in the ALOIZ Region. Currently, companies with established production areas on 1,578,207.92 m<sup>2</sup> of this area are actively producing. Construction activities have started in an area of 1,067,226.65 m<sup>2</sup>, and although a place has been allocated in an area of 1,613,942.69 m<sup>2</sup>, construction activities have not been started yet. There is 509,904.00 m<sup>2</sup> of empty space. The project area will be realized on parcel number 141/24. The land area planned to be used is 62,874 m<sup>2</sup>. The parcel currently belongs to ALOIZ and expropriation procedures were completed in 2018.

According to land use map prepared based on Environmental Master Plan for İzmir-Manisa planning area, the Project Area is organized industry area. The land use map according to Environmental Master Plan is presented in Annex 3 Figure- 4.



Source: Wastewater Treatment Plant Capacity Increase Feasibility Report prepared by Er-Ge Design, Engineering, Consulting and Trade Limited Co. in August 2022

Figure 5.2 ALOIZ Parcel Status

## 5.3 Topography

İzmir Aliağa OIZ Wastewater Treatment Plant Capacity Extension Project located in Aliağa district of İzmir province of Türkiye. Aliağa is a district bordered by Bergama to the north, and the districts of Foça and Menemen to the south. To the east, it shares its boundary with Manisa province, while its western



border is the Aegean Sea. To better understand the topography, a regional Digital Elevation Model (DEM) was generated. The Digital Elevation Model (DEM) map including the A-A' section profile in NW-SE direction is also shown in Annex-3 Figure- 5. According to the Digital Elevation Model created, the highest point of the region is approximately 203 m above sea-level and the lowest point is located at an altitude of approximately 0 m.

#### 5.4 Geology

The project area is located within the Northern Aegean Basin which is among the water basins allocated throughout Türkiye. Approximately 80 m north of the WWTP area, Kunduz Stream flows in an east-west direction, and approximately 500 m to the southwest, Güzelhisar Stream flows in an east-west direction and merges with Kunduz Stream.

The Northern Aegean Basin is in the west of the Anatolian peninsula, between 38-40° north latitudes and 26-28° east longitudes. The basin is surrounded by Marmara basin in the north, Gediz basin in the south, Susurluk basin in the east, and the Aegean Sea in the west. It has a total area of 9,861 km<sup>2</sup> and covers approximately 1.3% of Türkiye's surface area.

There is Aegean Sea approximately 4 km southwest of the wastewater treatment plant and Güzelhisar Dam approximately 7 km southeast.

Terrigenous volcanic and sedimentary rocks, deposited in the range of age from Late Oligocene to Quaternary, lie over rocks of Sakarya Zone with those of İzmir-Ankara Zone unconformably in the region.

The Sakarya Zone's relationship with the İzmir-Ankara Zone is primarily driven by tectonic forces. Both of these geological regions contain sedimentary and volcanic rocks from the Tertiary period, and they are connected with an angular unconformity. Volcanic activity began in the north during the Eocene and continued into the Oligocene, with younger volcanic formations occurring further south. The oldest volcanic rocks in the area are the calcalkaline Altıntepe volcanics from the Late Oligocene to Early Miocene, believed to be an extension of Oligocene volcanic activity.

Subsequent volcanic activity included the Early Miocene Aydınlar volcanics, which are highpotassium calcalkaline rocks covered by fluvio-lacustrine deposits like the Early Miocene Yeniköy conglomerate and Soma formation. The Yeniköy conglomerate transitions laterally into the İkibaşlı formation, composed of mudstone, shale, and sandstones. Within the Soma formation, the Kurfalı member is found, primarily consisting of pyroclastic rocks, and the Tekkedere tuff.

Moving into the Early to Middle Miocene, volcanic activity included basic Samurlu volcanics, acidic Foça tuff, and again basic Hasanlar volcanics, along with intermediate Sancaklı volcanics, rhyolitic and dacitic Örekkaya, Haykiran, and Kırkayalık volcanics. The most substantial volcanic events in this era were the Yundağ and Dumanlıdağ volcanics, both contemporaneous in terms of stratigraphy. The Dumanlıdağ volcanics are further divided into Hatundere, Karadevli, Kaletpe, and Çukurköy members, while the Yundağ volcanics consist of the Lav member, Rahmanlar agglomerate, and Akçaköy tuff. Early to Middle Miocene Bozdıvli volcanics, primarily composed of basalt and basaltic andesites, were also present.

In the Middle to Late Miocene, fluvio-lacustrine deposits of the Aliağa formation, along with alkaline İlipınar basalt, were laid down unconformably over these volcanic units. The most recent volcanic activity in the region is represented by the high-potassium Kılıçdağ volcanics, which cut across all previous formations.



Finally, the Quaternary period brought various deposits, including floodplain, beach, marsh/lagoon, river channel, alluvial fan, slope debris, and alluvium units, which cover the geological succession with an angular unconformity.

The generalized stratigraphic column section of the project area and its surroundings is given in Annex 2 Figure- 6. While part of the wastewater treatment plant line is located in Quaternary alluvium, the other part is located in Lower – Middle Miocene aged Karadevrit member. When the discharge line is considered, it can be seen that the entire line is located in alluvium. Geology map of project area and its surroundings is given in Annex 2 Figure- 7.

## 5.5 Climate

In Izmir, which is in the Mediterranean climate zone, summers are hot and dry and winters are mild and rainy. The fact that the mountains extend perpendicular to the sea and that the plains extend to the threshold of Central Western Anatolia allows marine influences to spread into the interior. According to information from the General Directorate of Meteorology, the number of days when the air temperature falls below zero in the province is approximately ten days per year. Approximately 100 days a year are above 30 degrees. The annual average sea water temperature is 18.5 °C.

Annual rainfall is between 700–1200 mm and snowfall is rare. During the summer months, a cool wind called sea breeze unique to the city, blows.

Northern winds are dominant in the district in winter. In the summer, breeze blows from the west. The annual average wind speed is 2.4 m/s. In Aliağa district, the average number of stormy days is 6.5 and the average number of strong wind days is 55.4. The fastest wind blows from the southeast direction with 31.10 m/s. The dominant wind direction in the region is west-northwest with 3.9 m/s.

Measurement values are presented in Table 5.1.



**Table 5.1 İzmir Province Annual Temperature Measurements**

İzmir	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Measurement Period ( 1938 - 2022)													
Average Temperature (°C)	8.8	9.6	11.6	15.9	20.8	25.4	27.9	27.7	23.8	18.9	14.3	10.6	17.9
Average Highest Temperature (°C)	12.4	13.6	16.3	20.9	26.1	30.7	33.2	33.0	29.2	24.0	18.6	14.1	22.7
Average Lowest Temperature (°C)	5.8	6.2	7.7	11.2	15.5	19.9	22.5	22.4	18.7	14.6	10.8	7.6	13.6
Average Sunshine Duration (hours)	4.3	5.2	6.4	8.0	9.9	11.6	12.3	11.9	10.1	7.6	5.6	4.2	8.1
Average Number of Rainy Days	12.66	10.69	9.27	7.88	5.31	2.33	0.45	0.54	1.93	5.36	8.75	12.74	77.9
Monthly Average Total Precipitation (mm)	134.8	103.4	75.1	45.7	31.3	12.4	4.1	5.9	15.1	44.1	91.8	146.2	709.9
Measurement Period ( 1938 - 2022)													
Maximum Temperature (°C)	22.5	27.0	30.5	32.5	37.6	41.3	42.6	43.0	40.1	36.0	30.3	25.2	43.0
Minimum Temperature (°C)	-8.2	-5.2	-3.8	0.6	4.3	9.5	15.4	11.5	10.0	3.6	-2.9	-4.7	-8.2

Source: General Directorate of Meteorology, Official Website





## 5.6 Soil Quality

Turkish General Directorate for Rural Services database defines the land use capabilities in eight (8) different classes. These classes represent the agricultural potential of the soil. In this classification system, soils are categorized between Class I, which represent the arable lands on which agricultural activities can be conducted in the most efficient, economic and simplest way without causing erosion, and Class VIII, which represent the lands that are not arable, cannot even be used as grassland or forest areas but support only wildlife development or can be used as resting area or national park by human. Characteristics of each class are summarized in Table 5.2.

**Table 5.2 Agricultural Potentials Represented by Different Land Use Capability Classes and Their Characteristics**

Class	Agricultural Potential	Definition of Land Use Capability
Class I	Agricultural lands suitable for agricultural soil cultivation	Class I lands are; flat or near flat, deep, fertile and easily cultivated so that the conventional agricultural methods can be applied; potential for water and soil erosion are minimal; have good drainage; are not prone to flood damage exposure; suitable for hoe plants and other intensively grown crops; Class I irrigated lands with low precipitation rates have slope values less than 1% slope, loamy structure, good water holding capacity and medium level permeability.
Class II		Class II lands are decent lands that can only be processed after taking some special precautions. Their difference from Class I lands is one or more of the limiting factors such as slight slope, moderate exposure to erosion, moderately thick soil, exposure to occasional moderate floods and a moderate level of moisture that can easily be isolated.
Class III		Class III lands are moderately good lands for hoe plants which can generate solid income provided they are utilized with a good cropping system and proper agricultural methods. Moderate slope, increased erosion sensitivity, excessive moisture, exposed soil, presence of stones, having a lot of sand and/or gravel, low water holding capacity and low yield are properties of this type of land.
Class IV		Class IV lands can be constantly utilized as meadows. Field crops can also be occasionally grown. High levels of slope, bad soil characteristics, erosion and climate are the factors limiting agricultural activities on these lands. Soils with low slopes and poor drainage are also classified as Class IV lands. These soils are not subject to erosion, but they are unsuitable for growing many agricultural products as they have a low yield and a tendency to suddenly dry up in the spring. In semi-arid regions, cropping systems incorporating legumes are generally not possible due to climate.
Class V	Agricultural lands not suitable for soil cultivation	Class V lands are reserved for long-life plantations such as meadows and forests as they generally are unsuitable for cultivated plants. A few factors such as stony structure and soggy conditions hinder cultivation here. The land is flat or near-flat. It is not subject to an excessive amount of wind and water erosion. Grazing and tree logging activities can be carried out on condition that a good soil cover is constantly maintained.
Class VI		Class VI lands require moderate precautions even when they are used as forest or meadow since they have quite a bit of slope and are subject to severe erosion. Exposed, soggy or very dry conditions make this type of land unsuitable for cultivation.
Class VII		Class VII lands have high slope, are stony and have been subject to violent erosion. Exposed soils, dry and/or some unfavourable conditions and swamps can be classified as Class VII soil. These can be used as forest or meadow without showing due care. If the vegetation on these soils diminishes, erosion can get quite violent.
Class VIII	Non-arable lands	Class VIII lands exhibit features that prevent them from being used as forest, meadow or cultivated land. This type of land is habitat to wild life and can also be used for recreational purposes or as catchment basins for streams. These include lands containing marshes, swamps, deserts as well as areas of high mountainous regions, rocky lands or lands with very deep craters.

Source: Former Ministry of Agricultural and Rural Services, July 2008

According to the former Turkish General Directorate for Rural Services database analysis (1993), the major soil groups of the Project Area include alluvial soils and brown forest soils. In terms of land use capability, the Project Area is evaluated under the categories of Class I, Class III and Class VIII. During the field study conducted on 13.09.2023 by the Consultant (Encon Çevre Danışmanlık Ltd. Şti.), no pollution was detected by visual observation.



## 5.7 Air Quality and Odor

OIZs emit large amounts of greenhouse gases, especially carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>) and fugitive VOCs that contribute to climate change.

National Air Quality Monitoring Network is carried out by the Ministry of Environment, Urbanization and Climate Change, General Directorate of Environmental Impact Assessment Permit and Inspection, Environmental Reference Laboratory Department. This network provides data from Air Quality Monitoring Points in Türkiye. In order to evaluate baseline of air quality, the average of 1 hour and 24-hour concentration measurements was taken from Aliğa Air Quality Measurement station.<sup>2</sup> The average of 30-day measurement results was taken from the Air Quality Monitoring Station between September 1, 2023 and October 1, 2023. Aliğa Air Quality Measurement Station was chosen because it is located in the district where the project is located and is the closest station to the project area, and it is the station that will best convey the baseline conditions. The station is 6.3 km away from the project area. Accordingly, PM<sub>10</sub> measurements were determined as 23.20 µg/m<sup>3</sup> hourly and 35.28 µg/m<sup>3</sup> in 24-hours. According to these results, the hourly value is above the Project standards, while the 24-hour value is below the Project standard limit value.

Since the project area is in the organized industrial zone, there are many companies generating air emissions. However, when the air quality measurements in the region are analyzed, the results are generally below the limit values.

The main processes in the wastewater treatment plant are anaerobic processes, aeration tanks, sludge digestion, sludge dewatering. Furthermore, the chemicals used for chemical treatment can lead to the formation of odorous compounds. Water entering the WWTP may carry odorous substances that are not removed during treatment. In addition, during the site visit conducted on September 13, 2023 by the Consultant, no odor problem was detected in the existing WWTP.

## 5.8 Noise

Environmental noise in Türkiye is regulated by the Regulation on Environmental Noise Control (RENC) which is published in the Official Gazette dated 30.11.2022 and numbered 32029. This regulation is intended to ensure that precautions are taken to prevent disturbance to peace and tranquility, and to ensure the physical and mental health of persons potentially exposed to environmental noise. For this purpose, the regulation sets out requirements regarding noise mapping, acoustic reporting, environmental noise assessment for determination of noise exposure levels and preparation and application of action plans to prevent or mitigate negative impacts of noise exposure on human being and the environment. As explained in Chapter 3, the Project standards have already been determined. Project standards are presented in the Table 5.3.

Table 5.3 Project Standards for Noise Level

	Limit Values (Leq) IBA)		
	Day time (07.00-19.00)	Evening time (19.00-23.00)	Night time (23.00-07.00)
Project Standards	65	60	55

In the baseline studies within the scope of ESMP, noise monitoring was not carried out since the project comprises a capacity increase of an already established plant. It can be stated that the

<sup>2</sup> <https://sim.csb.gov.tr/>

noise of the operating WWTP is minor noise source.. The closest residential area to the region is Çoraklar neighborhood, 4.1 km away, as the crow flies. It is not foreseen that this settlement will be affected by the operation of the technical equipment in the WWTP.

## 5.9 Water Resources and Use

Water bodies in proximity to the Project area are:

- Kunduz Creek: flows close to the project area (50-100 m) (it is adjacent to the OIZ and is the point where treated water is discharged). According to the Regulation on Identification of Sensitive Water Bodies and the Areas affecting these Water Bodies, the Kunduz Creek is included in the scope of sensitive water bodies. A water body that is determined to be eutrophic or that may become eutrophic in the near future provided the necessary measures are not taken, is referred to as a sensitive water body.
- Güzelhisar Stream: 300 m close to the project area (Güzelhisar Stream, which is a branch of Kunduz Stream, has been identified as a sensitive water body and the coastal water body where it flows into the Aegean Sea has been identified as a sensitive coastal water body). Aliağa Bay, where the stream flows into the sea, has also been designated as a sensitive area.
- Güzelhisar Dam: The dam is 4.6 km away from the project area. Water is used for drinking and utility purposes.

There are facilities located in the Organized Industrial Zone that discharge wastewater into the Kunduz Creek without treatment. During the site visit, it was observed visually that Kunduz Creek has already been polluted. OIZ meets the water demands of the facilities from groundwater. In the existing WWTP and other facilities, the water used in these wells is used only as process water. Domestic water is provided from the OIZ network. Usage permits for wells are presented in the Annex-8. ALOIZ water network flow rate is 700 l/day. The process water used by the wastewater treatment plant from wells is 240 m<sup>3</sup>/day.

The map showing the distance of the OIZ to water resources is presented in Figure 5.3. The water wells used by the OIZ are also shown in Figure 5.3. The well usage permits held by ALOIZ are found in the Annex-8.



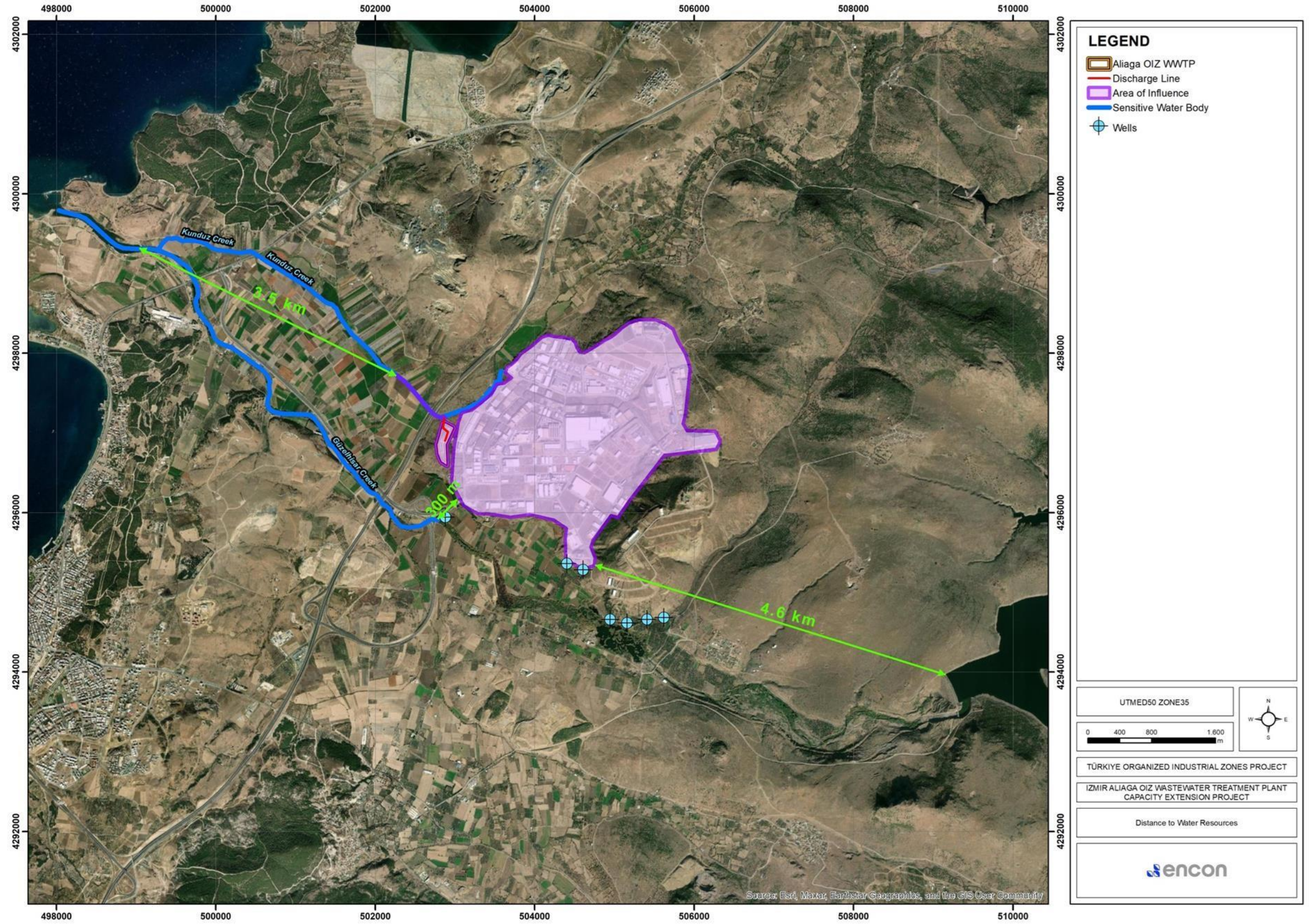


Figure 5.3 Distance to Water Resources



## 5.10 Wastewater Management

The existing Wastewater Treatment Plant was designed in 2015. The plant was commissioned in 2017 and the project flow rate was determined as 3500 m<sup>3</sup>/day. The Treatment Plant is a classical activated sludge process including physical, chemical and biological wastewater treatment processes. The existing facility has an Environmental Permit until 28.09.2027 (Letter dated 27.09.2022 and numbered 58003700-150/E.2317). The wastewater received at the treatment plant first passes through physical treatment to remove solids that may damage the mechanical equipment in the plant and then through biological treatment to remove dissolved and floating biological pollutants.

The existing dewatering building will be used as a workshop building, and the new dewatering building will be located next to the solar drying structure. Decaners, the existing dewatering equipment in the plant, will be used and additional equipment will be supplied and installed. With the solar sludge drying method, the solar source, which is a cost-free energy, realizes the dewatering mechanism. It dries wastewater treatment sludge, which has a solid matter input of 25%, to 75% and above. This ratio can reach up to 90% depending on the temperature. The volume of sludge, whose volume is 1 m<sup>3</sup>, is reduced to approximately 0.4 m<sup>3</sup>. In addition to all the advantages, logistics' costs are reduced. Wastewater treatment sludge code 190813 is produces approximately 60 tons per week. The sludge comes out of the decanter unit at 25% dryness and this sludge is transferred to the casing. When the case is full, a transportation request is made to the licensed company and the licensed company dries it in its facility, reduces the humidity rate by 30% and sends it to cement factories as fuel.

The treated water discharge is to Kunduz Creek, approximately 200 m north of the treatment plant area. The final discharge of treated water to Kunduz Creek is Aliağa Bay, approximately 4.5 km away. Aliağa Bay is designated as a sensitive area according to the Regulation on Identification of Sensitive Water Bodies and Areas Affecting These Bodies and Improvement of Water Quality. Within the scope of the project it is planned to increase the capacity of 8,500 m<sup>3</sup>/day in addition to the existing treatment plant. The project will work with chemical and advanced biological treatment processes. The existing WWTP and discharge point photographs are presented Figure 5.4 and Figure 5.5.



Figure 5.4 Existing WWTP



**Figure 5.5 Discharge Point**

The analysis results are given with the wastewater discharge standards defined in Water Pollution Control Regulation in Table-19. According to the results, all measured values are below the limit values specified in the regulation. The measurements results are also provided as Annex -9 of this report.

**Table 5.4 Existing WWTP Effluent Analysis Results 1**

Parameter	Limit Value for 2-Hour Composite Sample*	Effluent Values / Measurement Number						
		No 1 (16.01.23)	No 2 (03.02.23)	No 3 (20.02.23)	No 4 (03.03.23)	No 5 (24.03.23)	No 6 (07.04.23)	No 7 (25.04.23)
COD (mg/L)	250	66.64	85.32	6.82	88.92	49.4	69.44	75.84
TSS (mg/L)	200	9.2	26.8	<3	10	6.8	8.8	14
Oil and grease (mg/L)	20	<10	11	<10	<10	<10	<10	<10
pH	6-9	7.74	7.73	7.69	7.72	7.69	7.65	6.59
Parameter	Limit Value for 2-Hour Composite Sample*	Effluent Values / Measurement Number						
		No 8 (05.05.23)	No 9 (22.05.23)	No 10 (02.06.23)	No 11 (20.06.23)	No 12 (06.07.23)	No 13 (31.07.23)	No 14 (14.08.23)
COD (mg/L)	250	28.56	47.6	37.92	57.12	20.3	<15	27
TSS (mg/L)	200	5.6	5.1	6.2	6.8	<4	10.7	7.8
Oil and grease (mg/L)	20	<10	<10	<10	<10	<10	<10	<10
pH	6-9	7.67	7.83	7.65	6.8	7.5	7.39	8.29
Parameter	Limit Value for 2-Hour Composite Sample*	Effluent Values / Measurement Number						
		No 15 (28.08.23)	No 16 (14.09.23)	No 17 (27.09.23)	No 18 (11.10.23)	No 19 (24.11.23)	No 20 (08.12.23)	No 21 (22.12.23)
COD (mg/L)	250	74.3	51	40	51	<15	58	72
TSS (mg/L)	200	69.6	25.4	26.5	11.6	13.7	19.9	11.2
Oil and grease (mg/L)	20	<10	<10	<10	<10	<10	<10	<10
pH	6-9	8.33	8.81	7.91	8.2	8.05	7.15	7.81

\* Water Pollution Control Regulation Table 19 Limit Values





**Table 5.5 Existing WWTP Effluent Analysis Results 2**

Parameter	Unit	Limit Value for 2-Hour Composite Sample*	Effluent Values (02.01.2023)
COD	(mg/L)	250	49.6
TSS	(mg/L)	20	<3
Oil and grease	(mg/L)	20	<10
Total Phosphorus (TP)	(mg/L)	2	<0.5
Total Chromium	(mg/L)	2	<0.002
Chromium (Cr <sup>+6</sup> )	(mg/L)	0.5	<0.1
Lead (Pb)	(mg/L)	2	0.017
Total Cyanide (CN <sup>-</sup> )	(mg/L)	1	<0.005
Cadmium (Cd)	(mg/L)	0.1	<0.001
Iron (Fe)	(mg/L)	10	0.011
Fluoride (F <sup>-</sup> )	(mg/L)	15	0.43
Copper (Cu)	(mg/L)	3	0.0083
Zinc (Zn)	(mg/L)	5	0.053
Mercury (Hg)	(mg/L)	0.05	<0.0005
Sulphate ( SO <sub>4</sub> <sup>-2</sup> )	(mg/L)	1500	41.69
Total Kjeldahl Nitrogen (TKN)	(mg/L)	20	<5
Fish Bioassay (TDF)	-	10	4
Colour	(Pt-Co)	280	3.44
pH	- log H	6-9	8.30

\* Water Pollution Control Regulation Table 19 Limit Values

As seen in the tables above, the existing WWTP operates efficiently and meets the regulation limit values. With the renewed WWTP, adverse of the receiving environment will be reduced. ALOIZ has not received any penalties for wastewater and sludge management.

## 5.11 Waste Management

In ALOIZ, various hazardous/non-hazardous wastes are produced and managed. Oil contaminated gloves and clothing, empty packaging of finished hazardous chemicals, plastic and wood materials contaminated with oil or chemicals are collected separately at the source with their specific waste codes, stored in the waste area and sent to licensed disposal/recycling companies with licensed transportation vehicles. In addition, fluorescent wastes (as a result of replacement of lighting systems), laboratory kits, treatment sludge and over-screen wastes (mixed with each other), waste batteries (as a result of battery replacement of construction machinery), toner-cartridge wastes; paper cardboard packaging and plastic packaging (as a result of office activities) are sent to licensed disposal/recycling companies with their specific waste codes. Waste batteries are collected separately at the source with their specific codes and sent to the Portable Battery Manufacturers and Importers Association (TAP) association, while low quality mineral oils are sent to Petroleum Industry Association (PET-DER) with their specific waste codes.

The facility has a temporary storage permit dated 27.05.2020 and numbered 535 since the monthly hazardous waste output is over 1000 kg. In the facility, the hazardous and non-hazardous



waste area is separate from each other and is located as a single area. Photos of the Storage Area are shown in

Figure 5.6. The floor of the hazardous waste area is covered with impermeable reinforced concrete. The top and lateral walls are covered with metal sheet. The front surface of the area is in the form of a fully lockable door and metal fence. A grid system terminating with a blind well has been created against leakage and spills inside the area. Sorbent cloths are used as absorbent material. There is fire extinguishing equipment nearby to prevent fire. Treatment sludge is stored in a container at the outlet of the decanter. The container is located on a concrete floor, covered with sheet metal and surrounded by a grid system terminating with a blind well. Non-hazardous waste has the same characteristics and is located separately next to the hazardous waste area.



Figure 5.6 Photograph of the Storage Area Taken During the Site Visit

## 5.12 Natural Disaster Potential

The project area was taken as the center point and the epicenter distribution of earthquakes with magnitude  $M \geq 4$  that occurred between 2013 and 2023 within a circle with a radius of 60 km is shown in Annex-3 Figure- 8. The project area was examined on the interactive earthquake hazard map published by AFAD and it was determined that the maximum ground acceleration (PGA 475) of the project area was 0.451 g and the ground velocity (PGV 475) was 26.698 cm/s for a Recurrence Period of 475 years. Since Izmir province is located in a region with a high earthquake risk, the earthquake risk of the project area is high. Earthquake hazard map of Türkiye where the project area is marked is shown in the Annex-3 Figure 11.

## 5.13 Biodiversity and Protected Areas

Site studies of the biological environment of this Project Area and the potential impact area were carried out on 13 September 2023. The studies covered terrestrial and aquatic environments, including flora and fauna species, vegetation and habitat descriptions.

As a result of the flora-fauna studies carried out in and around the project area, terrestrial flora and fauna species have been determined and presented in tables with their Latin-English names,



protection and endemism status in Annex-4. Additionally, EUNIS habitat classification has been made, and the map is shown in Annex-4.

As a result of these studies, widespread species adapted to anthropogenic effects in and around the Project Area have been identified, and no protected or endemic species have been identified. The Project Area is located in an industrial area and is a modified habitat.

National protected areas and internationally recognized areas (World Heritage Natural Sites, Biosphere Reserves, Ramsar Wetlands of International Importance, and Alliance for Zero Extinction Sites) in the project area and its immediate surroundings have been researched and mapped (Annex4). As a result, according to research conducted with current databases, there is no nationally protected or internationally recognized area in and close vicinity of the Project Area.

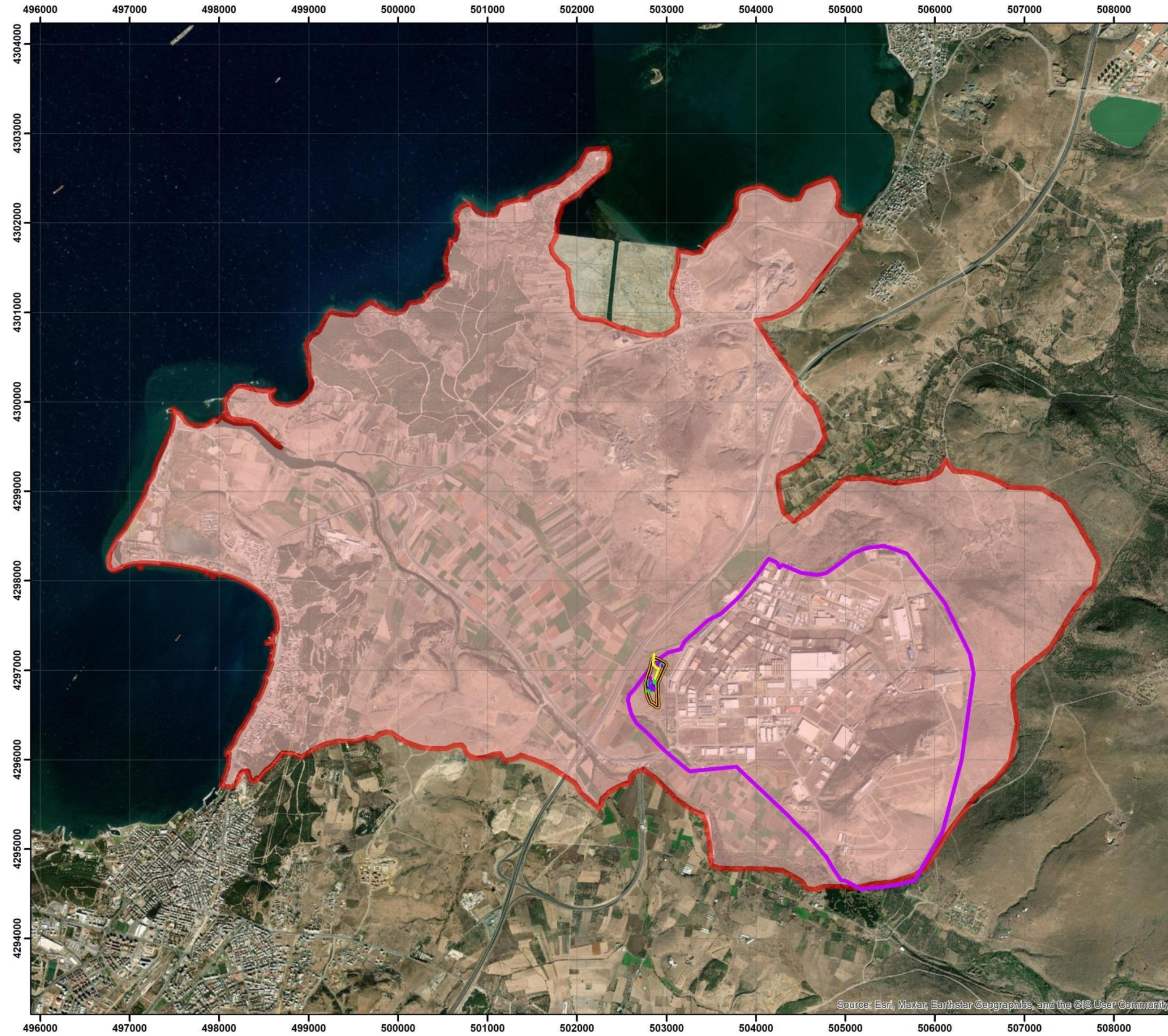


## 6 SOCIAL BASELINE OF THE PROJECT

The overall Study Area for the social impact assessment represents the potential Area of Influence (AoI) of the Project. This is 'the area over which significant effects of the Project could reasonably occur, either on their own or in combination with those of other developments and projects'. The social AoI which is about 4,816 ha is presented in Figure 6.1.

The project will be constructed within the existing WWTP land in the existing OIZ's built-up industrial area. The existing WWTP area is owned by Aliğa OIZ (parcel no: 141/24). The expropriation of 60 tiny land shares in this parcel, which were owned by 5 deceased persons having a total of 40 descendants with claims to the land, were completed in 2018. The project does not require any land acquisition and the nearest settlement to WWTP construction site is 3.4 km away. The potential Area of Influence (AoI) for the Project includes the Aliğa Organized Industrial Zone (Aliğa OIZ), planned Wastewater Treatment Plant Capacity Extension Project area, the area located discharge line, collector line, energy transmission line and the downstream of discharge point to Kunduz Creek. In addition to these areas, users and owners of the lands downstream of the discharge point, the closest neighbourhoods centers, Çaltıldere which is 3.4 km to project site,, Çoraklar 4.1 km to project site and Yalı neighbourhoods are included in the social AoI of Project. The land uses with the highest share within the AoI are natural meadows permanently irrigated areas, mixed agricultural areas, industrial and commercial units, pastures and coniferous forests according to Corine land cover data dated 2018. The project's social Area of Influence which also covers environmental AoI. is given in Figure 6.1





**LEGEND**

- Discharge Line
- Existing Units
- Planned Units
- Units to be Demolished
- Aliaga OIZ WWTP
- Aliaga OIZ
- Social Area of Influence

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TÜRKİYE ORGANIZED INDUSTRIAL ZONES PROJECT

İZMİR ALIAGA OIZ WASTEWATER TREATMENT PLANT  
CAPACITY EXTENSION PROJECT

Social Area of Influence

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Figure 6.1 Social Aol Map



## 6.1 Demography and Population

The project area is located in the Aliğa district of İzmir. There are 3 settlements in the project's social Area of Influence (Aol): Çoraklı, Çatlı and Yalı. While Çoraklar and Çatlıdere are small settlements with a population below 700, Yalı neighbourhood which has physically integrated with the city of Aliğa has more than 3,200 (Table 6.1). Last 5 years population data of these settlements shows that the population of these settlements tends to increase slowly.

In Aliğa district, which contains intense industrial activities, the male population is higher than the female population. In Çoraklı and Çatlı settlements within the project's Aol, the share of male population is higher than the share of female population. In Çoraklar settlement, the female population is very low around 15.7% of the total population (TurkStat, 2023).

Table 6.1 Population of Settlements at Aol

Settlement	Total	Female	Male	Share of Female (%)	Share of Male (%)
İzmir	4,462,056	2,246,340	2,215,716	50.3	49.7
Aliğa	104,828	47,423	57,405	45.2	54.8
Çoraklar	115	18	97	15.7	84.3
Çatlıdere	699	339	360	48.5	51.5
Yalı	3,277	1,693	1,584	51.7	48.3

Source: TurkStat, 2023

## 6.2 Cultural Heritage

There are no known cultural heritage sites or cultural resources in the project area or near the project site. The nearest archaeological sites are located 3 km northeast of the project area and 4,5 km southeast of the project area. Those cultural sites are not open to visitors and there are no ongoing excavations. The sites are under protection of the Law on the Protection of Cultural and Natural Assets No. 2863 with 1<sup>st</sup> and 3<sup>rd</sup> degree Archaeological Site. Archaeological Protected Areas are given in Annex-3 Figure- 11.

If any cultural property is found during construction (excavation) works ("chance find"), the Chance Find Procedure will be implemented, and any findings will be reported to the local authorities. Chance Finds Procedure is given in Annex 7.

## 6.3 Livelihood and Employment

Socio-Economic Development Index studies allow for determining the development index and trends of districts, provinces and regions as well as benchmarking. According to the Socio-Economic Development List of Provinces and Regions Study (2017), İzmir is listed as the 3<sup>rd</sup> most developed province after İstanbul and Ankara and located within the 1 degree-developed level (Acar, et al., 2019).

İzmir is high industrialization which is above Türkiye's average. In this development, the contribution of Aliğa district, where the project area is located, is significant.

The share of sectors according to employment shows a similar structure to the sectoral distribution of GDP in İzmir. According to 2022 labour statistics, the services sector has the largest



share with 60.2 %, industry (32.4%) and agriculture (7.4%) follows the services sector (TurkStat, 2023c).

According to the Socio-Economic Development Index of Districts Study (2022), Aliağa district is listed as the 13<sup>th</sup> most developed district of İzmir (105 out of 973 districts of Türkiye) and located within the 2<sup>nd</sup> degree development level (Acar, et al., 2022). In addition to having the identity of an industrial city with high attractiveness, Aliağa; It also stands out with its identity as an important logistics centre.

Aliağa district, which has become one of the important freight centres of Türkiye, attracts attention with its ports that can handle different cargoes and industries operating in diversified industrial branches such as iron and steel, petrochemical, and ship breaking. According to 2022 data, Aliağa Port Authority is the second port authority that handles the most cargo in Türkiye in terms of cargo handling (UAB, 2023).

Agricultural and husbandry activities decreased with the industrialization movement in Aliağa district. Agriculture is done mainly in Güzelhisar and Helvacı plains and Şakran region. The most important agricultural products grown in the district are cotton, tobacco, vegetables, olives and seedless grapes.

### 6.3.1 Major Economic Activities in Settlements Located in the Project Aol

The Project area is defined as Pasture according to CORINE data and the land use around the WWTP defined as industrial/commercial units, mineral extraction sites, construction sites, nonirrigated arable land, permanently irrigated land, pastures, complex cultivation patterns and natural grasslands. Information on major economic activities located in the Project Aol was obtained from the headmen of the Çoraklar, Çatıldere and Yalı neighbourhoods. Major economic activities in these settlements are given in Table 6.2. Although the settlements have a rural character, they tend to be urbanized in terms of economic activities.

**Table 6.2 Major Economic Activities in Settlements Located in the Project Aol**

Settlement	Primary Economic Activity	Secondary Economic Activity	Tertiary Economic Activity
Çoraklar	Retirement	Animal Husbandry	Agriculture
Çatıldere	Wage	Agriculture	Animal Husbandry
Yalı	Tradesmen	Paid employment	Retirement

According to information provided by Aliağa OIZ management, Aliağa OIZ will prioritize local people for employment.

### 6.3.2 Education and Health Services

There is one primary school which is 3.2 km to project site and one kindergarten which is 3.4 km to project site in Çatıldere neighbourhood and one primary school and one secondary school which is 4.2 km to project site in Yalı neighbourhood. There is no school in Çoraklar neighbourhood.

There is only a Community Health Center which is 3.5 km to the project site located in Çatıldere. There was a Community Health Center in Yalı however it was destroyed in the 6.6 magnitude earthquake that occurred on October 30, 2020. Residents of Çoraklar and Yalı neighbourhoods are receiving health services from health centres in Aliağa centre.

Education and health centres at the social Aol are shown in Annex-3 Figure- 12.



## 6.4 Vulnerable Groups and Social Equity

Vulnerable groups refer to people who may be more affected by the potential negative impacts of the project or are less able to access information or get their voices heard and concerns raised. The characteristics of persons belonging to vulnerable groups are as follows:

- Individuals over 65 years of age living alone,
- Physically or mentally handicapped,
- Those who have a chronic illness or are bedridden,
- Women heads of households,
- Poor people who live on state or association aid,
- Refugees,
- Ethnic minority groups,
- Nomads.

According to the information provided by the headmen of neighbourhoods, information about vulnerable/disadvantaged individuals/groups is presented in Table 6.3. Only two vulnerable groups exist in Aol.

**Table 6.3 Vulnerable Groups at Aol**

Settlement	Individuals over 65 years of age living alone	Physically / Mentally disabled		Total
Çoraklar	1	0		1
Çatıldere	5	15		20
Yalı	10	3		13
	<b>Total</b>	<b>16</b>	<b>18</b>	<b>34</b>

According to the information provided by the ALOIZ, information about vulnerable/disadvantaged individuals/groups is presented in Table 6.4. Four vulnerable groups exist in ALOIZ.

**Table 6.4 Vulnerable Groups at ALOIZ**

	Individuals over 65 years of age living alone	Physically / Mentally disabled	Those who have chronic illness or are bedridden	Women heads of households	Total
ALOIZ	17	126	64	58	265

## 6.5 Infrastructure Services

The following table presents the infrastructure services at the neighbourhoods in the social Aol.

**Table 6.5 Infrastructure Services of the neighbourhoods in the social Aol.**



Settlement	Water Resource	Irrigation Resource	Sewerage System	Domestic Waste Management	Mass Transportation Vehicle
Çoraklar	Municipal water	Well water	Septic tank	Collected by the municipality	Municipal Bus
Çatılıdere	Municipal water	Well water	Sewage system	Collected by the municipality	Municipal Bus
Yalı	Municipal water	-	Sewage system	Collected by the municipality	Municipal Bus

## 6.6 Traffic and Transportation

The project area is located within Aliğa OIZ. Aliğa OIZ has a strong transportation network. It is possible to access Aliğa OIZ via İzmir Çanakkale State Road and Menemen Aliğa Çandarlı Motorway.

İzmir Çanakkale State Road has a very high traffic volume due to industrial facilities at Aliğa and freight movements. According to the 2022 state highways traffic volume map published by the General Directorate of Highways, the annual average daily traffic on the İzmir -Çanakkale Road traffic segment passing through the west of the OIZ is 27,082 vehicles. Of these vehicles, 19,762 are automobiles, 2,064 are medium goods vehicles, 389 are buses, 1.495 are trucks and 3.372 are articulated trucks (KGM, 2023).

## 7 ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS OF THE PROJECT

### 7.1 Environmental Risks and Impacts of the Project

The main purpose of an Environmental and Social Management Plan (ESMP) is to identify and assess the potential positive and adverse impacts/risks that may be caused by the Project activities on the natural environment and on the socio-economic well-being and conditions of the population (community and workforce) at local and regional level. The following assessment is based on the Project characteristics and activities and the baseline conditions in the project area.



Table 7.1 Environmental and Social Attributes Impact Levels Identification Matrix

N o	Environmental and Social Attributes	Impact																										
		Natu re	Type			Extent/area			Duration			Likeliho od of Occurre nce			Sensitiv ity of the Recepto r	Magnitud e of the Impact	Impact Significa nce without ESMP	Impact Significan ce with ESMP										
Positiv e (+)	Negativ e (-)	Direct	Indirect	Cumulative	Site/Project specific	Local	Regional	National	Short term	Medium term	Long term	Primary	Secondary	Likely	Unlikely	High	Medium	High	Medium	High	Medium	Low	Medium	Low	Medium	Low	Medium	Low
A. PRE-CONSTRUCTION PHASE																												
1. Air Quality																												
1	Increase in dust concentration		✓	✓			✓				✓				✓										Medium	Low	Low	Low
2	Exhaust emissions (SO <sub>2</sub> PM, NO <sub>x</sub> )		✓	✓			✓				✓				✓										Medium	Medium	Low	Low
3	GHG emissions		✓	✓					✓		✓				✓										Medium	Low	Low	Low
2.Soils and Contaminated Lands																												
1	Loss of topsoil at the WWTP area		✓	✓			✓							✓		✓									Low	Low	Low	Low
2	Erosion potential		✓	✓			✓						✓			✓									Low	Low	Low	Low
3	Contamination of soil		✓	✓			✓						✓			✓									Medium	Low	Medium	Low
3. Water Resources																												
1	Change in surface water quality		✓	✓				✓			✓						✓								Medium	Low	Medium	Low
4. Noise and Vibration																												
1	Increase in noise level		✓	✓				✓			✓				✓										Medium	Low	Low	Low
5. Resources and Waste																												
1	Resources used during works		✓	✓				✓			✓				✓										Low	Low	Low	Negligible/None
2	Improper waste management		✓	✓				✓			✓					✓									Medium	Low	Low	Low
6. Landscape and Visual (Aesthetics)																												
1	Impairment of quality of life due to the overall presence of annoying construction works and activities and altered landscape		✓	✓				✓			✓				✓										Low	Low	Low	Low
7. Biological Environment																												
1	Damage or loss of terrestrial habitats and flora species		✓	✓				✓			✓					✓									Low	Low	Low	Negligible/None
2	Disturbing/harming of terrestrial fauna species		✓		✓			✓			✓					✓									Low	Low	Low	Negligible/None
3	Damage or loss of aquatic habitat and/or aquatic species		✓		✓			✓			✓					✓									Low	Low	Low	Negligible/None
8. Socioeconomic Environment																												
1	Infrastructure damage		✓	✓				✓			✓					✓									Low	Low	Low	Negligible/None
9. Community Health and Safety and Security																												
1	Trespassing and community encroachment		✓	✓			✓				✓						✓								Low	Low	Low	Negligible/None



2	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)		✓	✓				✓					✓			✓		Low	Low	Low	Negligible/None
<b>10. Labor Force and Working Conditions</b>																					
1	Working conditions and protecting the workforce		✓	✓			✓				✓				✓			Medium	Low	Low	Low
2	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)		✓	✓			✓					✓				✓		High	Low	Medium	Low

No	Environmental and Social Attributes	Impact																		
		Nature		Type		Extent/area			Duration			Likelihood of Occurrence			Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP		
		Potential (+)	Negative (-)	Direct	Indirect	Cumulative/Project	Local	Regional	National	Short term	Medium term	Long term	Primary	Secondary	Uncertain	High	High	High	High	
																Medium	Medium	Medium	Medium	
																Low	Low	Low	Low	
3	Workers' exposure to work-related occupational health and safety (OHS) risks		✓	✓		✓				✓				✓			Medium	Low	Low	Low
4	Workers Engaged by Third Parties and the Supply Chain		✓	✓		✓				✓				✓			Medium	Low	Low	Low
B. CONSTRUCTION PHASE																				
1. Air Quality																				
1	Increase in dust concentration		✓	✓		✓				✓				✓			Medium	Low	Low	Low
2	Exhaust emissions (SO <sub>2</sub> PM, NO <sub>x</sub> )		✓	✓		✓				✓				✓			Medium	Medium	Low	Low
3	GHG emissions (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O)		✓	✓				✓		✓				✓			Medium	Low	Low	Low
2. Soils and Contaminated Land																				
1	Erosion potential		✓	✓		✓						✓			✓		Low	Low	Low	Low
2	Contamination of soil		✓	✓		✓						✓			✓		Medium	Medium	Medium	Low
3. Water Resources																				
1	Change in surface water quality	✓		✓				✓				✓		✓			Medium	Medium	Medium	Low
4. Noise and Vibration																				
1	Increase in noise level		✓	✓			✓			✓				✓			Medium	Low	Low	Low
5. Resources and Waste																				
1	Resources used during works		✓	✓			✓			✓				✓			Low	Low	Low	Negligible/None
2	Improper waste management		✓	✓			✓			✓					✓		Medium	Low	Low	Low
6. Landscape and Visual (Aesthetics)																				
1	Impairment of quality of life due to the overall presence of annoying construction works and activities and altered landscape		✓	✓			✓			✓				✓			Low	Low	Low	Negligible/None
7. Biological Environment																				
1	Damage or loss of terrestrial habitats and flora species		✓		✓		✓			✓					✓		Low	Low	Low	Negligible/None
2	Disturbing/harming of terrestrial fauna species		✓		✓		✓			✓					✓		Low	Low	Low	Negligible/None



3	Damage or loss of aquatic habitat and/or aquatic species		✓		✓			✓			✓				✓		Low	Low	Low	Negligible/None
<b>8. Socioeconomic Environment</b>																				
1	Infrastructure damage		✓	✓			✓			✓					✓		Low	Low	Low	Negligible/None
<b>9. Community Health and Safety and Security</b>																				
1	Trespassing and community encroachment		✓	✓				✓			✓				✓		Low	Low	Low	Negligible/None
2	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)		✓	✓				✓			✓				✓		Low	Low	Low	Negligible/None
<b>10. Labor Force and Working Conditions</b>																				
1	Working conditions and protecting the workforce			✓			✓				✓					✓	Medium	Low	Low	Low
2	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)		✓	✓				✓					✓			✓	High	Low	Medium	Low

No	Environmental and Social Attributes	Impact																	
		Nature		Type		Extent/area			Duration			Likelihood of Occurrence		Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP		
		Potential (+)	Negative (-)	Direct	Indirect	Cumulative/Project	Local	Regional	National	Short term	Medium term	Long term	Very likely	Likely	Unlikely	High	High	High	High
						to project													
						On project													
3	Workers' exposure to work-related occupational health and safety (OHS) risks		✓	✓		✓				✓				✓		Medium	Low	Low	Low
4	Workers Engaged by Third Parties and the Supply Chain		✓	✓			✓			✓				✓		Medium	Low	Low	Low
B. OPERATION PHASE																			
1. Air Quality and Odour																			
1	Odorous gas emission		✓	✓			✓				✓		✓			Medium	Low	Low	Low
2	Exhaust emissions (SO <sub>2</sub> PM, NO <sub>x</sub> )		✓	✓		✓				✓			✓			Medium	Low	Low	Low
3	GHG emissions		✓	✓				✓		✓			✓			Medium	Low	Low	Low
2. Geology, Soils and Contaminated Land																			
1	Contamination of Soil		✓		✓	✓					✓				✓	Low	Low	Low	Negligible/None
3. Water Resources																			
1	Change in overall physicochemical water quality of Kunduz Creek	✓		✓				✓			✓		✓			Positive			
2	Change in groundwater quality		✓		✓			✓		✓					✓	Medium	Low	Low	Low
4. Noise and Vibration																			
1	Increase in Noise Levels		✓	✓		✓						✓		✓		Low	Low	Low	Negligible/None
5. Resources and Waste																			
1	Resources used for operation		✓	✓			✓				✓		✓			Low	Low	Low	Negligible/None
2	Generation of different types of waste in the WWTP site		✓	✓			✓				✓			✓		Medium	Low	Low	Low



3	Sludge generation		✓	✓					✓					✓				Medium	Medium	Medium	Low
4	Impact on human health (potential asbestos)		✓		✓				✓			✓					✓	Low	Low	Low	Negligible/None
6. Landscape and Visual (Aesthetics)																					
1	The existence of the WWTP		✓	✓					✓						✓		✓	Low	Low	Low	Low
7. Biological Environment																					
1	Damage or loss terrestrial habitats and flora-fauna species		✓		✓				✓			✓					✓	Low	Low	Low	Negligible/None
2	Damage or loss of aquatic habitat and/or aquatic species		✓		✓				✓			✓					✓	Low	Low	Low	Negligible/None
8. Socioeconomic Environment																					
1	Infrastructure damage		✓	✓					✓			✓					✓	Low	Low	Low	Negligible/None
9. Community Health and Safety																					
1	Trespassing and community encroachment		✓	✓			✓										✓	Low	Medium	Low	None/Negligible
2	Community's exposure to disease due to improper handling of wastes, including sludge		✓	✓				✓			✓						✓	Low	Medium	Low	Negligible/None
3	Failure of operation		✓	✓					✓		✓						✓	Medium	Medium	Medium	Low
No	Environmental and Social Attributes	Impact																			
		Nature	Type		Extent/area				Duration				Likelihood of Occurrence		Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP			
		Potential (+)	Negative (-)	Direct	Indirect	Cumulative	Site/Project	Local	Regional	National	Short term	Medium term	Long term	Primary	Very likely	Uncertain	High	High	High	High	
						Project	Object										Medium	Medium	Medium	Medium	
						Project	Object										Low	Low	Low	Low	
				Project	Object										Negligible/None	Negligible/None	Negligible/None	Negligible/None			
10. Labor Force and Working Conditions																					
1	Working conditions and protecting the workforce		✓	✓			✓				✓				✓			Medium	Low	Low	Low
2	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)		✓	✓				✓				✓				✓		High	Low	Medium	Low
3	Workers' exposure to work-related occupational health and safety (OHS) risks		✓	✓			✓				✓				✓			Medium	Medium	Medium	Low
4	Workers Engaged by Third Parties and the Supply Chain		✓	✓			✓				✓				✓			Medium	Low	Low	Low



### 7.1.1 Land Use

The project area is located in Çoraklar District, parcel 141/24. The parcel area is 265,483.33 m<sup>2</sup>. The property owner of the Project area is ALOIZ.

#### 7.1.1.1 Pre-Construction Phase

Proper planning, monitoring, and adherence to environmental and safety regulations are critical for minimizing the risks associated with land use during pre-construction activities in a wastewater treatment plant.

*Permit Violations:* Failure to obtain the necessary permits or non-compliance with permit conditions can result in regulatory fines and delays.

*Environmental Regulations:* Violations of environmental regulations can lead to legal consequences and additional costs for remediation and mitigation.

#### 7.1.1.2 Construction Phase

During the construction phase of the Project, the operation of construction machinery and equipment may disturb the landscape of the project area. The removal of vegetation, excavation of soil, trenching, etc. can cause landscape and visual effects.

#### 7.1.1.3 Operation Phase

In the operational phase, no impacts on the landscape other than the WWTP area are expected. The possible impacts during the operation phase will be the maintenance periods of the equipment in WWTP. During the maintenance works, as the works will be done in a limited area, the landscape of the site will not be affected in a significant way. However, during maintenance works, the work area will be determined and limited to that area to minimize impacts on the landscape.

### 7.1.2 Geology

#### 7.1.2.1 Pre-Construction Phase

The Project is not expected to have any impact on geology.

#### 7.1.2.2 Construction Phase

The Project is not expected to have any impact on geology. Construction of the units would be in accordance with the Building Earthquake Regulations.

#### 7.1.2.3 Operation Phase

The Project is not expected to have any impact on geological.

### 7.1.3 Hydrogeology



### 7.1.3.1 Pre-Construction Phase

ALOIZ uses the water wells it has opened to meet the process water of the facilities. There will be no use of groundwater during the pre-construction and construction phases of the project. Preconstruction activities may create the potential for accidental release/leak of petroleum-based products such as lubricants, hydraulic fluids or fuels during storage, transportation or use in equipment. All chemical storage containers, including diesel fuel and hazardous liquid waste drums/containers, should be located to minimize the risk of soil, surface water, and groundwater contamination during pre-construction phase. On the other hand, there are no discharges into groundwater resources.

The significance of the impacts on hydrogeology would be considered as low if mitigation measures would not be applied. The residual impacts will be negligible in significance with the implementation of mitigation measures given in Chapter 8.

### 7.1.3.2 Construction Phase

Construction activities may create the potential for accidental release/leak of petroleum-based products such as lubricants, hydraulic fluids or fuels during storage, transportation or use in equipment. All chemical storage containers, including diesel fuel and hazardous liquid waste drums/containers, should be located to minimize the risk of soil, surface water, and groundwater contamination during construction. On the other hand, there are no discharges into groundwater resources.

The significance of the impacts on hydrogeology would be considered as low if mitigation measures are not applied. The residual impacts will be negligible in significance with the implementation of mitigation measures given in Chapter 8.

### 7.1.3.3 Operation Phase

Since groundwater will be used from the wells opened by ALOIZ within the scope of the project, there may be a change in the water table if excessive use occurs. On the other hand, operation activities may create the potential for accidental release/leak of petroleum-based products such as lubricants, hydraulic fluids or fuels during storage, transportation or use in equipment. All chemical storage containers, including diesel fuel and hazardous liquid waste drums/containers, should be located to minimize the risk of soil, surface water, and groundwater contamination during operation.

Since the capacity of the wastewater treatment plant will increase during the operation phase, the process water to be used will also increase. With the capacity increase, process water demand will be 19.2 m<sup>3</sup>/day. With the treatment capacity, the process water usage capacity will also increase at the same rate. The process water used by the wastewater treatment plant from wells is currently 240 m<sup>3</sup>/day. Therefore, water withdrawal (19.2 m<sup>3</sup>/day) for operation phase will be lower compared to the current amount of water used (240 m<sup>3</sup>/day).

The significance of the impacts on hydrogeology would be considered as low if mitigation measures are not applied. The residual impacts will be negligible in significance with the implementation of mitigation measures given in Chapter 8.

### 7.1.4 Climate Change

The impacts on climate and vegetation before construction of a project can vary depending on the nature of the development, the specific location, and the environmental conditions. Some potential impacts on climate and vegetation are described below.



#### 7.1.4.1 Pre-Construction Phase

Clearing land for construction often involves the removal of vegetation, which can lead to the loss of plant species and habitat disruption for local wildlife. The removal of vegetation can leave the soil vulnerable to erosion, as plants help stabilize the soil. Erosion can lead to sedimentation of nearby water bodies and harm aquatic ecosystems.

The significance of the impacts on climate and vegetation would be considered as medium if mitigation measures are not applied. The residual impacts will be low in significance with the implementation of mitigation measures given in Chapter 8.

#### 7.1.4.2 Construction Phase

Construction activities can release greenhouse gases (GHGs), such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), contributing to climate change. This is especially relevant if the project involves the removal of vegetation, which acts as a carbon sink. The Project's contribution to climate change through GHG emissions is assessed as a negative and direct impact.

Construction equipment such as excavators, bulldozers and cranes often use fossil fuels. Temporary power sources such as generators located in construction sites also cause greenhouse gas emissions. Transportation of construction materials to the site or employees providing transportation to the construction site will also produce transportation-related emissions.

Heavy construction equipment can compact the soil, making it less suitable for plant growth. This can affect the ability of vegetation to regenerate after construction.

The significance of the impacts on climate and vegetation would be considered as medium if mitigation measures are not applied. The residual impacts will be low in significance with the implementation of mitigation measures given in Chapter 8.

#### 7.1.4.3 Operation Phase

The project's contribution to climate change during the operation phase will be similar to the contribution explained for the construction phase and the significance of the impact will be low. In the operation phase, most of the GHG generation is due to energy requirements of the WWTP. According to that, usage of fossil fuel burning equipment/machinery (including procurement of materials) usage will be limited.

GHG emissions generated operation phase of the Project can be considered as relatively short-term emissions with low impact. With the realization of proper mitigation measures proposed in Chapter 8 in Table 8.3, GHG emissions can be minimized.

### 7.1.5 Soil Quality

#### 7.1.5.1 Pre-Construction Phase

The minor impacts that may occur on the soil environment during pre-construction phase are listed below. These impacts are localized and restricted to the construction site.

- Disturbance of the natural soil and land structure as a result of soil stripping, levelling, excavation activities, work of construction machinery,



- Mixing of soil layers as a result of excavation activities;
- Soil contamination risk due to leakage and spill of fuels, paints and oils that will be used for the construction machinery and equipment;
- Soil pollution, which may occur in case of uncontrolled storage or disposal of solid and/or liquid wastes to be generated within the scope of the Project; and
- Improper replacement of soil to its original position.

The topsoil stripped during the pre-construction phase will be stored in the Project area and later used within the OIZ.

These impacts can be easily managed and mitigated to low in significance with the implementation of the mitigation measures presented in Chapter 8.

#### **7.1.5.2 Construction Phase**

The minor impacts that could occur on the soil environment during construction phase are listed below. These impacts are localized and restricted to the construction site.

- Mixing of soil layers as a result of filling activities;
- Excavation activities, work of construction machinery,
- Soil contamination risk due to leakage and spill of fuels, paints and oils that will be used for the construction machinery and equipment;
- Soil pollution, which may occur in case of uncontrolled storage or disposal of solid and/or liquid wastes to be generated within the scope of the Project.

These impacts can be easily managed and mitigated to low in significance with the implementation of the mitigation measures presented in Chapter 8.

#### **7.1.5.3 Operation Phase**

In the operation phase of the Project, the activities will have a limited physical interaction with the environment. In the operation phase of the Project, no additional significant direct impacts on topography, soil and land use are anticipated under the normal operating conditions. Impacts of the operation phase of the Project are related to the risks that arise during repair and maintenance works, such as spillage/leakage of wastewater, oil and chemicals to soil. The extent of these negative impacts will be limited with the Project's footprint, the significance of the impacts on soil environment would be considered as low if mitigation measures will not be applied accordingly.

If the wastewater contains heavy metals, they may accumulate in the sludge during the treatment process. Application of such biosolids to soil can lead to heavy metal contamination, negatively impacting soil quality and potentially posing risks to plants, animals, and humans. However, since the sludge from the solar drying system will not be used in agriculture, this impact is considered low.

With the implementation of mitigation measures, the residual impacts will be negligible in significance. The defined mitigation measures are presented in Chapter 8.

### **7.1.6 Air Quality and Odor**

#### **7.1.6.1 Pre-Construction Phase**



In the pre-construction phase of the project, topsoil stripping will be carried out during the land preparation process. Table 5.4 shows the uncontrolled and controlled dust emissions resulting from the topsoil stripping process. Details of calculation are given in Annex 5 of this ESMP.

**Table 7.2 Uncontrolled and Controlled Dust Emissions**

Sources	Emissions		Unit
	Uncontrolled	Controlled	
Dismantling/Excavation	3.144	1.5719	kg/hour
Storage	0.18232	0.0912	

These emission rates are calculated based on the worst-case scenario. The worst-case scenario is assumed that all vehicles will operate at a single point with uncontrolled condition. It is found that the calculated emission rates of the dust for both uncontrolled and controlled activities are above the limit values defined for non-stack sources in IAPCR, which is 1 kg/hour... Therefore, impacts related to dust emissions are in medium significance. In addition, with implementation of a set of mitigation measures that are presented in Chapter 8, any related impacts on air environment will be reduced.

In addition to the dust emissions, there will be exhaust emissions of heavy construction machinery. Primary emissions from exhaust gases of vehicles are NO<sub>x</sub>, CO, TOC, SO<sub>x</sub> and PM. Emission characteristics depend on parameters such as age of the vehicle, engine speed, working temperature, ambient temperature and pressure, type and quality of fuel. Dust and gas emissions from vehicles are given in Table 7.3.

**Table 7.3 Emissions for 1 L Diesel Consumption**

Pollutant	Project Standards (kg/h)	Emissions (g/h)
CO	50	0.7225
NO <sub>x</sub>	4	3.4425
PM	1	0.255
SO <sub>x</sub>	6	0.2125
TOC	3	0.255

When the calculated CO, NO<sub>x</sub>, PM, SO<sub>x</sub> and TOC values are evaluated, it is seen that they are also below the project standards. Detailed air quality calculations are described in Annex-5. These impacts can be easily managed and mitigated to low in significance with the implementation of the mitigation measures presented in Chapter 8.

### 7.1.6.2 Construction Phase

The excavation resulting from construction activities will be used as foundation filling material, and in case of excess, it will be stored and disposed of as specified in the "Regulation on the Control of Excavation Soil, Construction and Demolition Waste". Table 7.4 showing the uncontrolled and controlled dust emissions resulting from the excavation process. Details of calculation are given in Annex 5.

**Table 7.4 Air Quality Project Standard and Calculated Emission Values (in Construction Phase)**



Sources	Emissions		Project Standard	Unit
	Uncontrolled	Controlled		
Dismantling/Excavation	3.14	1.57	1	kg/hour
Loading	1.26	0.63		
Transportation	4.5	2.25		
Storage	0.038	0.19		

These emission rates are calculated based on the worst-case scenario. It is found that the emission rates for both uncontrolled and controlled activities is above the limit values defined for nonstack sources in IAPCR, which is 1 kg/hour. When the calculated CO, SO<sub>2</sub> and PM values are assessed, it is seen that they are also above the limit value defined for non-stack sources in IAPCR. Therefore, impacts related to dust emissions are of medium significance. In addition, with implementation of a set of mitigation measures that are presented in Chapter 8, any related impacts on air environment will be reduced.

Within the scope of the project activities, the old units will be demolished. With this demolition, excavation waste will be generated as well as dust emissions. During the project construction, GHG emissions will also occur with the fuel used by the construction equipment. The units to be demolished are detailed in the project description heading.

In the project, demolition will take place in an area of approximately 500 m<sup>2</sup>.  
To calculate the volume of pools in demolition activities;  
400 m<sup>2</sup> \* 0.5 cm (it is assumed) = 200 m<sup>3</sup> (demolition)

When building demolition activities are calculated;  
It is assumed:

- 10 m building width
- 4 m building height
- 0.3 m concrete thickness

Volume = 10 m \* 4 m \* 0.3 m = 12 m<sup>3</sup>

Dust emission factor (according to EPA 1993 data) = 0.00676 kg/m<sup>3</sup>

Total 12 m<sup>3</sup> demolition \* 0.00676 kg/m<sup>3</sup> = 1.44 kg/month = 0.008 kg/h = Dust emission.

Detailed air quality calculations are described in Annex-5 and these impacts can easily be managed and mitigated to low in significance with the implementation of the mitigation measures presented in Chapter 8.

### 7.1.6.3 Operation Phase Impacts

Odor and air quality problem can occur in case problem happens. Occasionally, minimal and local odor formation may occur from physical treatment and sludge treatment units of WWTP. However, if the effective operation will be provided, there would not be any odor problem.

Air quality measurements will be carried out monthly from the beginning of the construction phase. In addition, measurement will be repeated upon grievances. Anyone who has a complaint about odor will be able to use the Grievance Redress Mechanism, which will be active in both phases of the project.



During operation of solar drying system, odor-generating components within dewatered sludge can be found in dryer's exhaust air such as  $\text{NH}_3$ ,  $\text{H}_2\text{S}$ ,  $\text{CS}_2$ ,  $\text{CH}_3\text{SH}$  alcohols, VOCs etc depending on the kind of sludge and wastewater sources. The solar drying facility will be installed after the wastewater treatment plan is operational ,and the required analysis and studies will be done accordingly. If these are not managed properly, the solar drying process and the application of biosolids can result in unpleasant odors or the drying process, especially when elevated temperatures are involved, can help in the deactivation of odor-producing microorganisms.

The impacts on air quality that will occur during the operation phase of the project will be low and they will be managed/prevented with mitigation measures provided in Chapter 8. After all, if unwanted odor are still generated, additional measures (second level measures) will also be taken.

## 7.1.7 Noise

### 7.1.7.1 Pre-Construction Phase

During pre-construction phase of the Project, the noise would be potentially generated by vehicles and machinery to be used during land preparation activities. Since the planned WWTP is in an industrial area, there are no sensitive receptors such as health centers, schools, mosques in the immediate vicinity of the Project Area.

Assuming that the equipment to be used during the construction phase of the project will operate at the same time, the noise level has been calculated depending on their power. Sound pressure level decreases depending on the distance from the noise source. The graph below shows the decrease of sound pressure with distance. The noise generated during pre-construction phase is calculated and given in Annex 6. The distribution of noise depending on distance graph with Project Standard is presented in

Figure 7.1 as summary of the calculations. As seen in the graph, the results are above the Project standard up to a distance of 100 meters, while after a distance of 100 meters the results are below the Project standard.

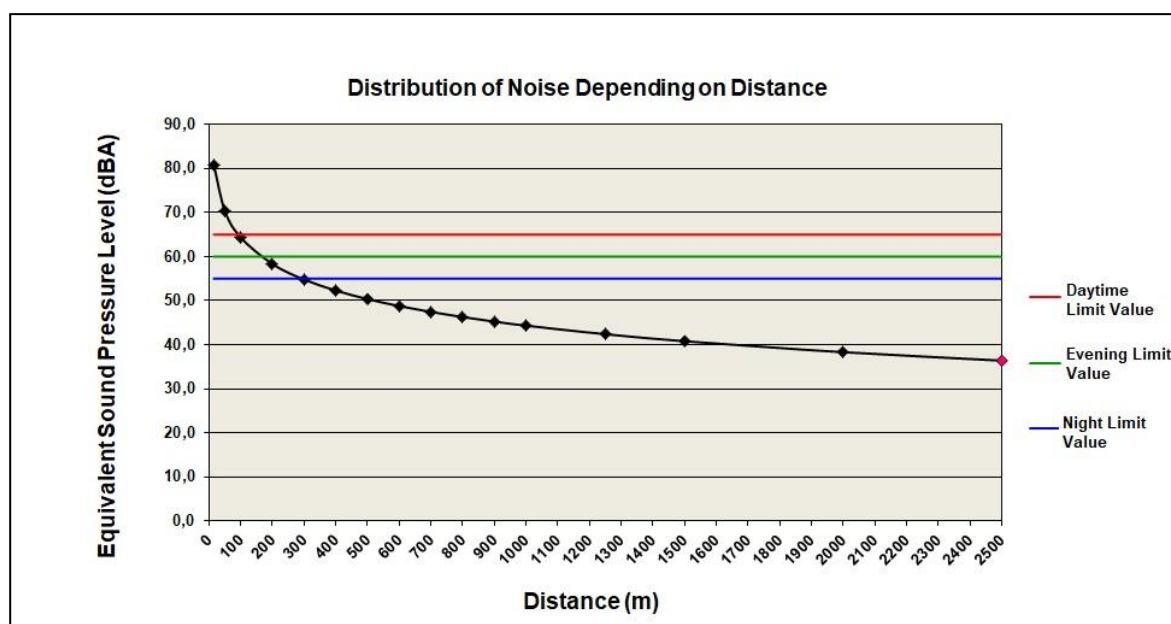


Figure 7.1 The Distribution of Noise Depending on Distance for Pre-construction Phase

To determine the noise impact, the noise level of the WWTP area calculated from a distance of 100 meters is above the project standard. According to WB EHS General Guideline; noise impacts

should not exceed the limit values or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site. The details about the noise level are summarized in Table 7.5.

**Table 7.5 Noise Level Results for Pre-construction Phase**

Project Standard (dBA)			Calculated Noise Level at 100 m distance
Day Time (07.00-19.00)	Evening Time (19.00- 23.00)	Night Time (23.00- 07.00)	64.3
65	60	55	

According to the table, the limit values are met since the pre-construction noise calculation result is 64.3 dB at a distance of 100 meters away WWTP area for the daytime. There should not be any noisy activity in the evening or at nighttime.

Vibration that will affect humans or the structure in the vicinity is not expected to occur as there will be no blasting activity within the Project.

These impacts will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

#### **7.1.7.2 Construction Phase**

The Project activities within the construction phase are associated with a range of activities that generate noise. The noise would be potentially generated by transportation vehicles, machinery and outdoor equipment to be used for the preparation of the site and the construction activities. Since the planned WWTP is in an industrial area, there are no sensitive receptors such as health centers, schools, mosques that will be affected by noise in the immediate vicinity of the Project Area.

Assuming that the equipment to be used during the construction phase of the project will operate at the same time, the noise level has been calculated depending on their power. Sound pressure level decreases depending on the distance from the noise source. The graph below shows the decrease of sound pressure with distance. The noise generated during construction phase is calculated and given in Annex 6. The distribution of noise depending on distance graph with Project Standard is presented in

Figure 7.2 as summary of the calculations. As seen in the graph, the results are above the Project standard up to a distance of 200 meters, while after a distance of 200 meters the results are below the Project standard.



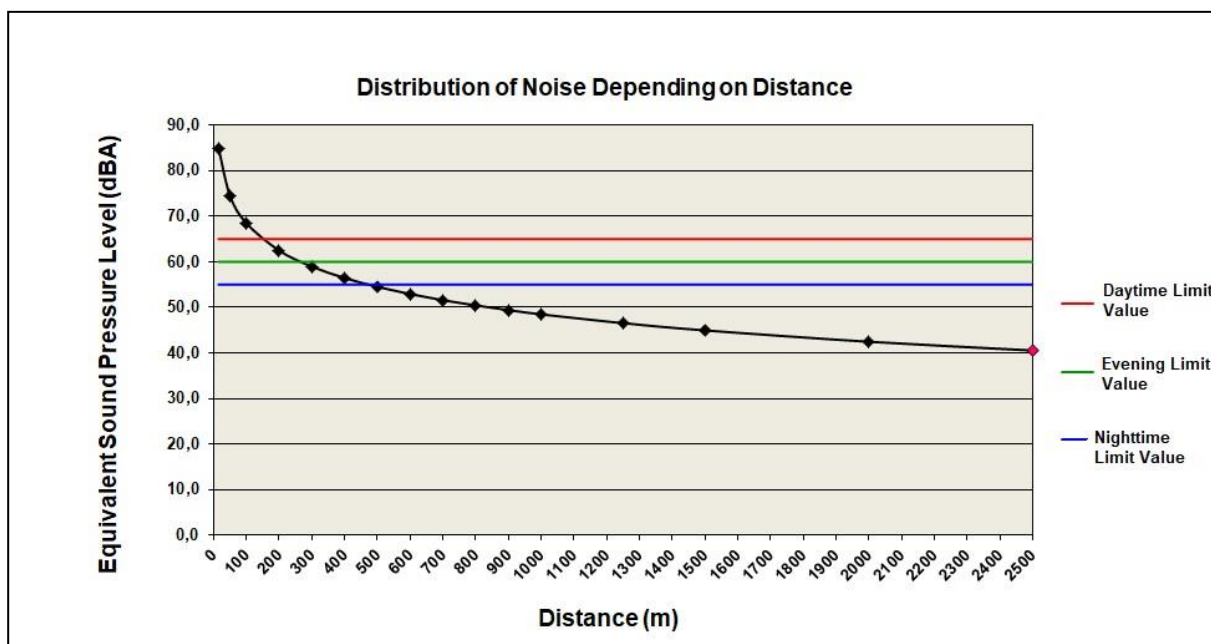


Figure 7.2 The Distribution of Noise Depending on Distance for Construction Phase

To determine the noise impact, the noise level of the WWTP area calculated from a distance of 200 meters is above the project standard. According to WB EHS General Guideline, noise impacts should not exceed the limit values, or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site. The details about the noise level are summarized in Table 7.6.

Table 7.6 Noise Level Results for Construction Phase

Project Standard (dBA)			Calculated Noise Level at 200 m distance
Day Time (07.00-19.00)	Evening Time (19.00-23.00)	Night Time (23.00-07.00)	62.5
65	60	55	

According to the table, the limit values are met since the construction noise calculation result is 62.5 dB at a distance of 200 meters away WWTP area. There should not be any noisy activity in evening or at nighttime.

Vibration that will affect humans or the structure in the vicinity is not expected to occur as there will be no blasting activity within the Project. The noise level of the equipment and machinery will be kept at a minimum with proper mitigation measures such as the use of silencers and with regular maintenance which is presented in Chapter 8.

### 7.1.7.3 Operation Phase

During the operation phase of the Project, the noise will be generated from WWTP equipment such as engines, compressors, pumps and blowers. The level of noise generated from the equipment is expected to be constant as all equipment will be in operation during the plant operation hours (24 hours). Equipment generating noise during the operation of the plant will be located in isolated closed

buildings and some of them will be submerged in wastewater. So, no significant noise is expected to be generated during the operation of the WWTP.

Worst-case scenario has been taken into account during noise level calculations for the preconstruction and construction phases of the project. It's expected that during the operational phase, noise levels will significantly decrease compared to these earlier phases. This anticipation is because the sources of noise during operation will primarily be contained within closed areas, generating less noise than the machinery and equipment used in pre-construction and construction. Additionally, there are no sensitive receptors in close proximity to the project area. However, in case of a complaint, the noise level will be measured and monitored.

As a good practice, during the procurement of equipment and machinery, sound levels given in the technical specifications/data sheet will be taken into consideration. In all works during the operations, relevant provisions and project standards will be complied with.

These impacts will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

### **7.1.8 Water Resources and Use**

#### **7.1.8.1 Pre-Construction Phase**

During the pre-construction phase, employees' needs will create water supply requirement. The utility water used will be supplied by obtaining a construction site subscription from the Aliağa Municipality network by the Contractor. The total amount of daily water requirement is calculated based on the multiplication of the number of employees that will be working at the peak time of the phase and the daily water requirement for a person, which is 228 L/cap/day (TurkStat, 2022). The number of personnel required is determined as 5. Therefore, the daily water requirement of employees during the pre-construction phase will be;

$$5 \text{ employees} \times 0.228 \text{ m}^3/\text{cap}/\text{day} = 1.14 \text{ m}^3/\text{day}$$

During the pre-construction works, there will be dust due to topsoil stripping activities and the operation of equipment in the field, and the amount of water required to suppress it and irrigate green areas may be 8 m<sup>3</sup>/day. Accordingly, it is anticipated that a total of 9.14 m<sup>3</sup> of water will be used per day during the pre-construction period.

Bottled water will be used for the drinking water needs of the personnel and purchased from the local market. The quality of drinking water that will be supplied to the Project shall comply with the Regulation Concerning the Water Intended for Human Consumption together with the internationally accepted standards, such as WHO and WBG's General EHS Guidelines.

Construction sites often generate increased surface runoff due to changes in land cover and the creation of impervious surfaces. This runoff may carry pollutants such as sediments, chemicals, and construction-related debris into nearby water bodies or infiltrate into the groundwater. The storage and handling of construction materials, fuels, lubricants, and chemicals pose a risk of spills or leaks. If not properly managed, these substances can migrate into the soil and, eventually, reach groundwater.

These impacts will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

#### **7.1.8.2 Construction Phase**

During the construction phase, water supply will be required to cover employees' needs and for dust suppression. The utility water used will be supplied by obtaining a construction site



subscription from the Aliağa Municipality network by the Contractor. The total amount of daily water requirement is calculated based on the multiplication of the number of employees that will be working at the peak time of the phase and the daily water requirement for a person, which is 228 L/cap/day (TurkStat, 2022). The number of personnel required is determined as 50. Therefore, the daily water requirement of employees during the construction phase will be;

$$50 \text{ employees} \times 0.228 \text{ m}^3/\text{cap}/\text{day} = 11.4 \text{ m}^3/\text{day}$$

During the construction works, there will be dust due to excavation operations, demolishing activities and the operation of construction equipment in the field, and the amount of water required to suppress it and irrigate green areas may be 8 m<sup>3</sup>/day. Accordingly, it is anticipated that a total of 19.4 m<sup>3</sup> of water will be used per day during the construction period. Since ready-mixed concrete will be used in construction, no additional water is needed for concrete preparation.

Bottled water will be used for the drinking water needs of the personnel and will be purchased from the local market. The quality of drinking water that will be supplied to the Project shall comply with the Regulation Concerning the Water Intended for Human Consumption together with the internationally accepted standards, such as WHO and WBG's General EHS Guidelines.

Water to be used in dust suppression during the construction phase of the Project will be absorbed by soil or lost by evaporation. Therefore, there will not be any surface runoff formation or wastewater generation due to watering for dust suppression.

On the other hand, construction activities may pose the potential for accidental release/leakages of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. All chemical storage containers, including diesel fuel and hazardous liquid waste drums/containers should be placed so as to minimize the risk of soil, surface water and groundwater contamination during the construction.

By implementing adequate measures for preventing spills and chemical leaks, it will be ensured that groundwater quality, soil and surface water remains unaffected. These impacts will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

### 7.1.8.3 Operation Phase

During the operation phase of the Project, part of the water supply requirement will arise due to employee needs. The drinking water of the employees will be provided from the network of Aliağa Municipality. The total amount of water required by employees is calculated as in the previous chapter. The number of personnel required is determined as 11. Therefore, the daily water requirement of employees during the operation phase will be;

$$11 \text{ employees} \times 0.228 \text{ m}^3/\text{cap}/\text{day} = 2.51 \text{ m}^3/\text{day}$$

The amount of water used from the process in the existing wastewater treatment plant is 8 m<sup>3</sup>/day. Since the wastewater flow rate will increase with the project, process use water is predicted to be 19.2 m<sup>3</sup>/day. The facilities in the Organized Industrial Zone meet the process water within the facility from wells. (see Annex-8)

In the operation phase, generated wastewater will be treated in the proposed WWTP. Additionally, the WWTP discharge will comply with the project standards. It is highly unlikely that the plant would need a complete shutdown. The capacity of the plant is sufficient for carrying the flow during short term pauses and necessary mitigation measures will be taken in case of any breakdown or natural disaster that may occur during the operation phase. ALOIZ will ensure that the contractor will prepare an Emergency Preparedness Plan for the impacts resulting from such problems. In the event of a possible breakdown, the impact will be addressed within a short time.



In the operation phase, the impact on groundwater may be seen due to accidental oil leakages in the areas where the maintenance of WWTP equipment is carried out as well as improper disposal of wastes. This may affect the groundwater quality in the Project Area, and if necessary, mitigation measures will be taken. However, it can be concluded that the impacts will be low in significant upon implementation of the mitigation measures and adherence to good engineering methods.

To conclude, the operation phase impacts of the Project are generally found to be positive on water resources since the discharge of wastewater into the water body will be done after it is treated. However, measures should be taken to prevent any unexpected deterioration in the receiving water quality. During the operation phase of the Project, the impact on surface water will be direct and positive with long-term duration.

### **7.1.9 Wastewater Management**

ALOIZ already has a wastewater treatment plant. The project is a capacity increase project of this wastewater treatment plant. The existing treatment plant will be used in all processes of the project activities.

#### **7.1.9.1 Pre-Construction Phase**

Domestic wastewater resulting from workers will be generated during the pre- construction phase. This type of wastewater will originate from facilities where the needs of employees are met, such as eating areas, toilets. Since there is an established wastewater treatment plant, it will be treated in this plant with the infrastructure. 5 employees will be employed during the pre-construction phase of the project. There will be a camp area where the staff can meet their basic needs such as toilets and showers, but there will be no accommodation. They will use the facility in the existing WWTP for their toilet/shower etc. According to 2020 TurkStat data, the Municipality's Daily Wastewater Amount is 0.189 m<sup>3</sup>/day. With this calculation;

Total daily wastewater produced = Daily amount of wastewater per employee \* Number of employees

$$5 \text{ employees} * 0.189 \text{ m}^3/\text{day} = 0.95 \text{ m}^3/\text{day}$$

Since the number of employees is low and there is a wastewater treatment plant already in operation, this wastewater load will not have an impact.

#### **7.1.9.2 Construction Phase**

Domestic wastewater resulting from workers will be generated during the construction phase. This type of wastewater will originate from facilities where the needs of employees are met, such as eating areas, toilets. Since there is an established wastewater treatment plant, it will be treated in this plant with the infrastructure. 50 employees will be employed during the construction phase of the project. According to 2020 TurkStat data, the Municipality's Daily Wastewater Amount is 0.189 m<sup>3</sup>/day. With this calculation;

Total daily wastewater produced = Daily amount of wastewater per employee \* Number of employees

$$50 \text{ employees} * 0.189 \text{ m}^3/\text{day} = 9.45 \text{ m}^3/\text{day}$$

Since the number of employees is low and there is a wastewater treatment plant already in operation, this wastewater load will not have an impact.



8 m<sup>3</sup> per day was estimated for dust suppression activities during the construction phase. Water to be used in dust suppression during the construction phase of the Project will be absorbed by soil or lost by evaporation. Therefore, there will not be any surface runoff formation or wastewater generation due to watering for dust suppression.

#### 7.1.9.3 Operation Phase

During the operation phase of the plant, there will be domestic wastewater generated by employees. Again, this wastewater will be treated in the WWTP and discharged to the Kunduz Creek. The daily capacity of the plant will be 12,000 m<sup>3</sup>/day with its existing treatment capacity. Based on the calculations above, 2.5 m<sup>3</sup>/day of wastewater will be generated from employees during the operation phase.

$$11 \text{ employees} \times 0.228 \text{ m}^3/\text{cap}/\text{day} = 2.5 \text{ m}^3/\text{day}$$

The project will not have a negative impact on wastewater management, on the contrary, it will have a positive impact on the Organized Industrial Zone due to the increase of capacity .

#### 7.1.10 Waste Management

As a result of the use of resources, construction and operation/maintenance activities as well as domestic requirements of the personnel, different types of waste will be generated throughout the lifetime of the Project.

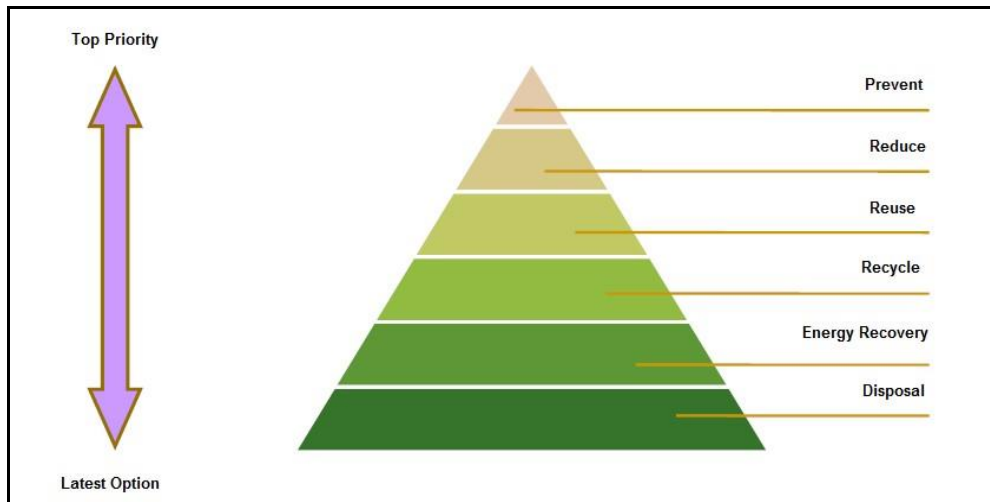
All the waste to be generated during the pre-construction, construction and operation phases of the Project are required to be properly managed in line with the requirements of national waste management legislation and international good practice in order to avoid impacts on soils, nearby water resources and flora and fauna elements. This Chapter identifies the waste to be generated in this context and assesses the impacts associated with waste generation.

The possible sources that will generate various types of waste are listed below:

- Municipal solid waste,
- Packaging waste such as wood, paper, cardboard and plastic, etc.,
- Hazardous and special waste that may be generated within the scope of the land preparation, construction and operation phases of the Project can be listed as contaminated vessels, cloths and overheads, waste batteries and accumulators, waste oils, etc.,
- Demolition, excavation and construction waste, □ Final sludge from the wastewater treatment plant.

Waste to be generated in the scope of the Project activities will be managed in accordance with the waste management hierarchy as given in Figure 7.3. In this respect, waste generation will be avoided/prevented at the source. In cases where prevention is not possible at the source, respectively; minimization of waste generation, selection of materials that will not cause generation of hazardous waste as much as possible, separate collection of waste according to their type (hazardous, nonhazardous, recyclable, etc.), reuse of generated waste at the site as much as possible, assessment of alternatives such as recycling and energy recovery for waste (where reuse is not possible) will be considered. The final step in the hierarchy of waste management involves the final disposal of waste in accordance with relevant regulations, where reuse, recycling and energy recovery options are not possible.





**Figure 7.3 Waste Management Hierarchy**

#### **7.1.10.1 Pre-Construction Phase**

Waste can occur during the pre-construction phase, although it may not be as visible or significant as during the actual pre-construction phase. The types of waste generated in the preconstruction phase are often associated with planning, site preparation, and early material deliveries. Here are some common sources of waste during this phase:

- Packaging Waste
- Site Preparation Waste
- Demolition or Deconstruction Waste
- Unused or Surplus Materials
- Hazardous Waste

Domestic waste caused by workers in the pre-construction phase:

- 5 people x 1.13 kg/person/day=5.65 kg/day

Efforts to minimize waste during the pre-construction phase involve strategic planning, efficient material use, and waste reduction measures. Implementing a waste management plan, as discussed earlier, can help identify, categorize, and manage the various sources of waste generated in the preconstruction stage. During the pre-construction phase of the Project, activities such as topsoil stripping, levelling, procurement of ready mixed concrete and other materials, will be carried out. Solid waste types expected to be generated within the scope of these activities are; municipal wastes, packaging wastes of system equipment (e.g., wood, cardboard, plastic, etc.), hazardous waste, special waste, excavation and construction waste (e.g., scrap metal, wood, concrete waste, etc.) and waste system equipment (panels, cables, electronic components). Hazardous and special waste might contain chemical substances (e.g., paint, solvent) or packaging materials and cloths contaminated with oils, waste oils resulting from operation and maintenance of machinery and vehicles, solvents, accumulators, batteries, filters, machine parts.

Waste to be generated during the pre-construction phase of the Project will be managed in accordance with the waste management hierarchy (avoidance, re-use, recycling, energy recovery and disposal).

All the wastes to be generated during the pre-construction phase of the Project are required to be properly managed in line with the requirements of national waste management legislation and international good practice to avoid adverse impacts on soils, nearby water resources and flora and fauna elements.

There is an existing Temporary Waste Storage Area within ALOIZ. Hazardous waste will be stored in special compartments in the existing Temporary Storage Area allocated for this purpose, in containers, separated from the non-hazardous waste as indicated in the Waste Management Regulation. This area has an impermeable base/ground and protected from the surface flows and rain. Additionally, some improvements for drainage measures for the area will be provided. Hazardous waste will be collected and disposed of by companies selected by ALOIZ among companies licensed by the MoEUC.

Topsoil stripped during the pre-construction phase of the project will be used in green areas within the boundaries of the ALOIZ.

#### 7.1.10.2 Construction Phase

To mitigate the negative environmental effects, it's crucial to implement sustainable construction practices, adhere to environmental regulations, and continuously monitor and improve processes throughout the project lifecycle. Environmental impact assessments and comprehensive planning during the pre-construction phase play a key role in achieving a balance between construction needs and environmental conservation.

Hazardous waste will be stored in special compartments in the Temporary Storage Area allocated for this purpose, in containers, separated from the non-hazardous waste as indicated in the Waste Management Regulation. This area will have an impermeable base/ground and will be protected from the surface flows and rain. Additionally, necessary drainage for the area will be provided. Hazardous waste will be collected and disposed of by companies selected by ALOIZ among companies licensed by the MoEUC.

Table 7.7 lists the types of waste that can be generated during the pre-construction phase and construction phase of the Project and their waste codes according to the waste lists given in the annexes of the Waste Management Regulation

**Table 7.7 List of Possible Waste Types to be generated during Pre-construction and Construction Phase of the Project**

Waste Code	Definition of Waste Code
<b>13</b>	<b>Oil Wastes and Liquid Fuel Waste (Excluding Edible Oils, 05 and 12)</b>
13 02	Waste Engine, Transmission and Lubrication Oils
<b>Waste Code</b>	<b>Definition of Waste Code</b>
<b>15</b>	<b>Waste Packages, Unspecified Absorbents, Wipes, Filter Materials and Protective Clothing</b>
15 01	Packaging Waste (Including Packaging Waste Separately Collected by the Municipality)
15 02	Absorbents, Filter Materials, Cleaning Cloths and Protective Clothing
<b>16</b>	<b>Waste Not Specified Otherwise in the List</b>
16 06	Batteries and Accumulators
<b>17</b>	<b>Construction and Demolition Waste (Including Excavations from Contaminated Sites)</b>
17 01	Concrete, Brick, Tile and Ceramic
17 02	Wood, Glass and Plastic
17 04	Metals (Including Alloys)

17 05	Soil (Including Excavations from Contaminated Sites), Stones and Dredging Sludge
17 09	Other Construction and Demolition Waste
<b>20</b>	<b>Municipal Waste Including Separately Collected Fractions (Domestic and Similar Commercial, Industrial and Institutional Waste)</b>
20 01	Separately Collected Fractions (Except 15 01)
20 03	Other Municipal Waste

Municipal waste within the scope of the Waste Management Regulation is referred to as domestic waste or commercial, industrial and institutional waste similar to domestic waste in terms of its content or structure, which are defined with waste code of 20, in the Waste List given in Annex-4 of the Regulation and of whose management responsibility belongs to the Municipality. Therefore, these types of waste will be stored separately from hazardous waste and recyclable waste and will be collected regularly by the municipality. Municipal waste will be managed in the same way as it is currently managed in ALOIZ. Domestic waste will be collected by Aliağa Municipality and sent to Izmir Metropolitan Harmandalı Storage Facility. Other wastes will be given to licensed organizations within the framework of the legislation.

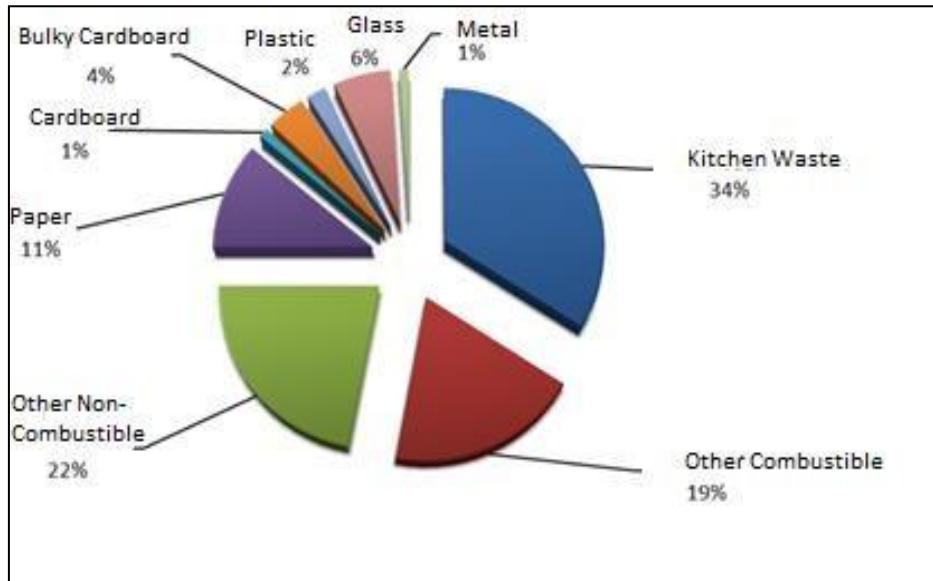
To determine the amount of municipal waste to be generated at site, the average daily municipal waste per person is taken as 1.13 kg according to the municipal waste statistics of TurkStat in 2014 (TurkStat, 2020). The estimated amount of municipal waste to be generated during the construction phase of the Project, based on the number of people working, is given below. This amount includes also separately collected fractions such as paper, cardboard, glass, metal, plastic, etc. together with biodegradable wastes:

$$50 \text{ person} \times 1.13 \text{ kg/person/day} = 56.5 \text{ kg/day}$$

There will be no cafeteria in the construction site. Thus, there will be no food preparation related waste generation within the context of the Project. The food will be supplied through catering services.

The general composition of the municipal waste in Türkiye is as demonstrated in Figure 7.4 according to the results of the solid waste composition determination study made within the scope of the Solid Waste Master Plan Project. 34% of municipal waste consists of kitchen waste. Separately collectable and recyclable fractions such as paper, cardboard, bulk cardboard, plastic, glass and metal constitute 25% of municipal waste.





**Figure 7.4 Composition of Municipal Waste (former Ministry of Science, Industry and Technology, 2014)**

Considering the information provided in Figure 7.4, it is also valid for the municipal waste to be generated within the scope of the Project. The only difference will be the kitchen waste percentages since there will be no kitchen/cafeteria in the Project. By reflecting this and the assumption of only 5% food waste, the composition of the municipal waste will be as follows:

□ Food Waste	: 5%
□ Other Combustible	: 27%
□ Other Non-combustible	: 31%
□ Paper	: 16%
□ Cardboard	: 2%
□ Bulky Cardboard	: 6%
□ Plastic	: 3%
□ Glass	: 8%
□ Metal	: 2%

Now, it can be said that 2.82 kg of food waste and 13.85 kg of separately collectable and recyclable waste will be generated daily during the construction phase of the Project. Also, the remaining 11.08 kg of daily produced waste is in the category of other combustible and noncombustible waste.

Waste vegetable oil will not be generated at the site during the construction activities as meals for the staff will be provided by catering companies. End-of-life tire generation and storage will not take place because the tire changes of the construction machines and other vehicles will be carried out at special facilities in the region providing service for this purpose. Besides, there will not be any significant amount of medical waste generation at site within the scope of the Project, as there will be no infirmary at the project site and hospitals located in Aliağa District will be used for possible medical interventions in case of an incident during the activities.

Topsoil stripping and levelling works will be carried out at certain locations in order to flatten the area during the construction phase of the Project. For all activities regarding excavation storage, transport and reuse; provisions of Regulation on the Control of Excavation, Construction and Demolition Waste will be complied with.

The construction machinery will require oil changes during the pre-construction and construction phase of the Project, at least once in every two-month period of the phase. Oil changes of the construction machinery will be carried out at services centers (?) licensed for the maintenance of the machinery. Thus, there will be no waste oil generation in the pre-construction and construction phase of the Project.

The annual amount of waste battery per person in Türkiye is six and this value corresponds to 140 grams (abrogated Ministry of Environment and Forestry, General Directorate of Environmental Management, 2009). According to this, the annual waste battery production of 50 people to be employed during the construction phase of the Project is calculated as 7 kg.

The excavated soil generated during the construction of the WWTP will be used as filling material. Excavation wastes that cannot be used will be disposed of in areas determined by both the Metropolitan Municipality and the District Municipality, as specified in the "Regulation on the Control of Excavation Soil, Construction and Demolition Wastes".

Some components of wastewater treatment plants may contain hazardous substances, such as chemicals, heavy metals, or asbestos-containing materials. Prior to demolition, a thorough assessment of the plant units should be conducted to identify any hazardous materials. Demolition waste management is subject to environmental regulations. If hazardous materials are present, they will affect the hazardous waste classification, and specific regulations for handling, transport, and disposal will apply.

No significant impact resulting from waste generation is expected due to the nature and scale of the Project, as explained above. Therefore, the impact is assessed as direct and negative with short term duration, local and low significance. However, mitigation measures described in Chapter 8.2 in order to prevent and/or minimize likely impacts will be implemented.

### 7.1.10.3 Operation Phase

In the operation phase, there might be waste generation resulting from damaged, malfunctioned or end-of-life equipment and material that could be replaced or controlled during maintenance and repair activities to be performed periodically or in case of a breakdown. Also, procurement of new equipment, pieces and others will also result in the generation of packaging waste. Besides, personal protective equipment, clothes and rags used during maintenance and repair activities might result in a limited amount of waste generation. Generated wastes during the operation phase will be collected by Izmir Metropolitan Municipality as in the construction phase.

11 workers are expected to be employed in the Project's operation phase. Therefore, municipal waste generation will be 12.43 kg/day and using the same approach as in pre-construction and construction, the recyclable portion of the municipal waste and the amount of food waste will be 3.10 kg/day and 0.62 kg/day, respectively. Moreover, in addition to recycling municipal waste, recyclable waste such as packaging waste, paper, cardboard, plastic and scrap metals are expected to be taken into account. After such waste is collected separately, it will be sent to licensed facilities according to the type of waste and will be managed in accordance with the waste management hierarchy. If possible, recycling and recovery options will be considered.

In the operation phase of the Project, due to the oil change needs of equipment such as blowers, there will be limited amount of waste oil generation.

Table 7.8 lists the waste types and waste codes that may occur during the operational phase of the project, according to the waste lists given in the Waste Management Regulation's Annex. The wastes generated during the operation phase will be stored in a temporary waste storage area.

**Table 7.8 List of Possible Waste Types to be generated during Operation Phase**



Waste Code	Definition of Waste Code
<b>13</b>	<b>Oil Wastes and Liquid Fuel Waste (Excluding Edible Oils, 05 and 12)</b>
13 02	Waste Engine, Transmission and Lubrication Oils
13 03	Waste Insulation and Heat Conduction Oils
<b>15</b>	<b>Waste Packages, Unspecified Absorbents, Wipes, Filter Materials and Protective Clothing</b>
15 01	Packaging Wastes (Including Packaging Waste Separately Collected by the Municipality)
<b>Waste Code</b>	<b>Definition of Waste Code</b>
15 02	Absorbents, Filter Materials, Cleaning Cloths and Protective Clothing
<b>16</b>	<b>Waste Not Specified Otherwise in the List</b>
16 02	Electrical and Electronic Equipment Waste
16 06	Batteries and Accumulators
19	Waste from Waste Management Facilities, Offsite Wastewater Treatment Plants and Water Preparation Facilities for Human Consumption and Industrial Use
19 08	Wastewater Treatment Plant Waste Not Described otherwise
<b>20</b>	<b>Municipal Waste Including Separately Collected Fractions (Domestic and Similar Commercial, Industrial and Institutional Wastes)</b>
20 01	Separately Collected Fractions (Except 15 01)
20 03	Other Municipal Wastes

The most important waste that will be generated as a result of the activities of the WWTP is sludge together with the screenings. The solid content of the sludge that will be generated will be increased through the sludge dewatering unit. The water that will be extracted from the sludge cake will be sent back to the inlet of the WWTP. 8.6 tons of waste sludge is estimated to be generated daily. After sludge is analyzed in an accredited laboratory, it will be disposed of in licensed companies according to the waste class produced.

Waste sludge will be dewatered by 25% at the decanter system and taken into leak-proof sludge container with 20-ton capacity. Once the container is full, licensed waste disposal company will transport this sludge with the filled container to its facility to dewater this sludge up to 30% and left on site for further operation. The licensed waste company will deliver this dewatered sludge to cement plants (after determining its waste class status by an accredited laboratory) to be incinerated as fuel. Once the sludge capacity reaches a certain amount, ALOIZ will install a solar drying facility based on the character and amount of sludge produced.

The impact is assessed as direct and negative with long term duration, local and low in significance. However, mitigation measures described in Chapter 8 will be implemented.

#### 7.1.11 Pesticide Use and Management

In accordance with ESS3, WB attaches importance to the use and management of pesticides in projects. According to WB ESF, the Borrower will ensure that all pesticides used will be manufactured, formulated, packaged, labeled, handled, stored, disposed of, and applied according to relevant international standards and codes of conduct, as well as the EHSGs.

The following criteria apply to the selection and use of such pesticides: (a) they will have negligible adverse human health effects; (b) they will be shown to be effective against the target species; and (c) they will have minimal impact on no target species and the natural environment. The



methods, timing, and frequency of pesticide application are aimed to minimize damage to natural enemies.

In addition, for any project involving significant pest management issues or any project contemplating activities that may lead to significant pest and pesticide management issues, the Borrower will prepare a Pest Management Plan (PMP). A pest management plan will also be prepared when proposed financing of pest control products represents a large component of the project.

#### **7.1.11.1 Pre-Construction and Construction Phases:**

There will be soil removal and relocation during the land preparation and construction phases. Therefore, pesticide control during these phases on formerly agricultural land involves management and mitigation requirement for environmental and health risks if there is a historical pesticide use because pesticides will not be used in these phases. Pesticide-free construction practices are adopted to prevent the introduction of new pesticides, accompanied by worker training on safety and proper handling. Ongoing monitoring and testing of soil and water quality will be done, coupled with transparent communication with regulatory authorities and the local community, contribute to a proactive and compliant approach. Overall, the goal is to facilitate the responsible transformation of the land for non-agricultural purposes and construction of WWTP while minimizing environmental impact.

Since there is no pesticide use in the area, there will be no impact due to pesticide use during the pre-construction and construction phases.

#### **7.1.11.2 Operation Phase:**

Industrial area includes green areas or landscaping, it may be necessary to employ pest control methods, which might include the use of pesticides. Pesticides from the industrial zone could be transported by storm water runoff into adjacent water bodies. Mitigating this risk can be achieved by implementing efficient storm water management practices. The upkeep of roads, utilities, and other infrastructure might entail the application of herbicides for vegetation control. Spills of pesticides used in landscaping or for other purposes may occur during transportation.

Since dewatered sludge will be accumulated within leak-proof container and will be isolated from the ground and transported to off-site with this container by licensed company, it is not foreseen any problem that may cause problems with insects, flies or rodents during operation. Aliağa OIZ stated that pesticides are not used for the existing WWTP and same operation procedures will be implemented for the WWTP. This approach reflects the organization's dedication to environmentally friendly practices throughout the entire lifecycle of the wastewater treatment plant. As a result, the community and the environment are expected to remain unaffected by the use of pesticides in the operation phase of the project.

### **7.1.12 Natural Disaster Potential**

#### **7.1.12.1 Pre-Construction and Construction Phases**

The Project is not expected to have any impact on flood risk during neither pre-construction nor construction phases. Flood prevention works are planned for Güzelhisar Stream and Kunduz Stream according to the North Aegean Flood Management Plan. However, Izmir province is located in an area of high earthquake risk. Construction of the units will be in accordance with the Building Earthquake Regulations.

#### **7.1.12.2 Operation Phase**



The Project is not expected to have any impact on flood risk during operation phase. Flood prevention works are planned for Güzelhisar Stream and Kunduz Stream according to the North Aegean Flood Management Plan. However, Izmir province is located in an area of high earthquake risk. Construction of the units will be in accordance with the Building Earthquake Regulations.

### 7.1.13 Biodiversity and Protected Areas

In this chapter, the sensitivity of terrestrial and aquatic ecosystems, as well as the identified flora and fauna species within the project and impact areas detailed in Section 5.13 will be assessed, followed by a magnitude impact on biodiversity and impact assessment. Consequently, the assessment of impacts on habitats and flora/fauna is given in Table 7.10.

#### *Significance Criteria*

The WB ESS6, Biodiversity Conservation and Sustainable Management of Living Natural Resources criteria were used to identify Critical Living Areas in the Study Area. WB criteria for identifying Critical Habitats include: rules were used to identify Critical Living Areas in the Study Area. WB criteria for identifying Critical Habitats include:

- Habitat of significant importance to Critically Endangered or Endangered species, as listed in the IUCN Red List of threatened species or equivalent national approaches;
- Habitat of significant importance to endemic or restricted-range species;
- Habitat supporting globally or nationally significant concentrations of migratory or congregator species;
- Highly threatened or unique ecosystems; and
- Ecological functions or characteristics that are needed to maintain the viability of the biodiversity values described above in (a) to (d).

The level of sensitivity of species and habitats are determined according to Table 7.9, and for the evaluation of the significance of the impacts on biodiversity of pre-construction, construction and operation phases of the project, the categorization matrix given in Chapter 4 is used.

Determining the ecological sensitivity criteria, the criteria used in defining critical habitat in WB ESS6 Guidance Note are considered. Accordingly, if a biodiversity component meets the critical habitat criteria; its sensitivity is evaluated as "High". Habitats and species that are globally widespread but locally or nationally protected species are assessed as "Medium" sensitivity. Natural habitats that do not meet the criteria for either medium or high sensitivity are assessed as low sensitivity. The criteria are also explained in Table 7.9.

**Table 7.9 Criteria for Sensitivity/Value of Resource/Receptor (Ecology and Biodiversity)**

Ecosystem Component	Sensitivity/Value Level		
	High (3)	Medium (2)	Low (1)
Designated Areas	Areas that meet the criteria of the IUCN's Protected Area Categories Ia, Ib and II. Key Biodiversity Areas (KBAs), which encompass Important Bird and Biodiversity Areas (IBAs). UNESCO Natural and Mixed World Heritage Sites. Sites that fit the designation criteria of the Alliance for Zero Extinction (AZE).	Nationally designated areas	N/A

Habitats	Habitats that trigger critical habitat under the (d) and (e) criteria. Habitats that support species of High sensitivity.	Areas of habitat that represent >1% distribution within Türkiye or are threatened at a national level. Habitats that support species of Medium sensitivity.	Natural habitats that do not meet the criteria for either medium or high sensitivity. Habitats that support species of Low sensitivity.
Species	Species populations that trigger critical habitat under the (a), (b) and (c) criteria	Nationally/ regionally important concentrations of a Vulnerable (VU) species, or locally important concentrations of Critically Endangered (CR) and/or Endangered (EN) species. Locally important populations of endemic / rangerestricted species. Populations of migratory species that represent >1 % of the national population.	Locally important populations of Near Threatened (NT) or Vulnerable (VU) species, or locally important populations of species listed on Annexes to the Bern Convention.

As a result, in assessment according to Table 7.9, terrestrial and aquatic habitats and flora and fauna species determined in the Project Area are considered not sensitive.

#### 7.1.13.1 Pre-Construction Phase

##### *Terrestrial Habitats and Flora Species*

The primary impact of the Project on habitats and flora species will be in the pre-construction period. Topsoil stripping will be carried out during the pre-construction phase, and this will cause the populations and habitats of the flora species.

Since the habitat of the area is currently modified, the abundance and number of species in the area are low, and the species in question are not of critical or endemic importance, the threat status of these species is not expected to change due to the Project.

Aside from the loss of habitat in the Project Area, the overall impact of pre-construction activities, such as waste and effluent generation and air emissions, on vegetation and flora species is considered minimal. It is known that dust emissions that may occur, especially during the land preparation phase, will prevent plants from photosynthesizing by closing their stomata. In this context, the mitigation measures given in Chapter 8 will be followed.

As explained in the previous title, the habitat and flora species identified in the Project Area are not considered sensitive. As a result, the Project's impact on terrestrial flora species and habitats during the pre-construction phase is considered low.



### *Terrestrial Fauna Species*

Terrestrial fauna species in the Project Area and its vicinity will be affected by disturbance from pre-construction activities because of topsoil stripping and habitat loss.

The fauna species that depend partly or totally on the habitats to be lost are the ones that will be mainly affected by the Project. The fauna determination studies were carried out, and no sensitive species were determined in the Project and impact area.

The impacts of pre-construction activities on fauna can be considered two components. The first component is the direct impacts because of the degradation and loss of habitats due to preconstruction activities. Indirect impacts are disturbances from noise, dust and human activity in the pre-construction area. Another impact of the pre-construction phase will be the vehicle traffic. The fauna species which have limited mobility will be prone to fauna mortality. All these effects can be eliminated by taking appropriate measures (see Chapter 8).

Most medium to large mammals and birds will leave the construction sites due to preconstruction impacts and move towards similar habitats in the immediate vicinity.

As a result, the Project's impact on terrestrial fauna species during the pre-construction phase is considered low.

### *Aquatic Biodiversity*

Controlled disposal of the waste generated during the land preparation works to be carried out during the pre-construction phase is very important to prevent Kunduz Creek from being negatively affected by the project-related works.

No pre-construction work will be done in Kunduz Creek. Avoiding interfering with the stream during work to be carried out on the stream edge will prevent excessive sediment and residue formation.

As a result, the Project's impact on aquatic biodiversity during the pre-construction phase is considered low.

## **7.1.13.2 Construction Phase**

### *Terrestrial Habitats and Flora Species*

The primary impact that may occur on flora and habitats during the construction works to be carried out within the scope of the Project is waste and air emissions. In this context, the mitigation measures given in Chapter 8 will be followed.

As a result, the Project's impact on terrestrial habitats and flora species during the construction phase is considered low.

### *Terrestrial Fauna Species*

The impacts of construction activities on fauna are disturbances from noise, dust and human activity in the construction area. Another impact will be the vehicle traffic.

Most medium to large mammals and birds will leave the construction sites due to impacts and move towards similar habitats in the immediate vicinity.



As a result, the Project's impact on fauna species during the construction phase is considered low.

#### *Aquatic Biodiversity*

Controlled disposal of the wastes generated during construction is essential to prevent Kunduz Creek from being negatively affected by the project-related works. No construction work will be done in Kunduz Creek.

As a result, the Project's impact on aquatic biodiversity during the construction phase is considered low.

### **7.1.13.3 Operation Phase**

#### *Terrestrial Habitats and Flora-Fauna Species*

The operation activities of the Project are not anticipated to have an adverse impact on terrestrial species and habitats. Terrestrial fauna species that have already adapted to anthropogenic influences are expected to persist in similar habitats in the vicinity of the Project Area once the construction works are concluded. The impact of the Project's operation phase on terrestrial biodiversity has been assessed as negligible.

As a result, the Project's impacts on terrestrial habitats and flora-fauna species during the operation phase are considered negligible.

#### *Aquatic Biodiversity*

It has been determined that the aquatic environment is currently under anthropogenic influences. With the planned WWTP, treated water will be discharged into the creek, local and national legislation regarding wastewater discharge will be complied with, and the water quality in Kunduz Creek will be monitored regularly during the operation phase. That can be a step towards conserving biodiversity and improving the water quality of the receiving bodies. That is considered the most significant positive impact of the Project on the aquatic environment.

As a result, the Project's impacts on aquatic biodiversity during the operation phase are considered low.

Consequently, the impact of the project on aquatic and terrestrial habitats and flora-fauna species has been evaluated and summarized in Table 7.10. The impact of the project on biodiversity has been evaluated as low/negligible and the mitigation measures given in Chapter 8 will be followed.

**Table 7.10 Assessment of Impacts on Habitats and Flora/Fauna**

<b>Ecosystem Component</b>	<b>Project Phase</b>	<b>Sensitivity</b>	<b>Magnitude</b>	<b>Type of Impact</b>	<b>Impact Significance Before Mitigation</b>
<i>Terrestrial Habitat and Flora</i>	Pre-construction	Low	Medium	Adverse	Low
<i>Terrestrial Fauna</i>	Pre-construction	Low	Low	Adverse	Low
<i>Aquatic Biodiversity</i>	Pre-construction	Low	Low	Adverse	Low



<i>Terrestrial Habitat and Flora</i>	Construction	Low	Low	Adverse	Low
<i>Terrestrial Fauna</i>	Construction	Low	Low	Adverse	Low
<i>Aquatic Biodiversity</i>	Construction	Low	Low	Adverse	Low
<i>Terrestrial Habitat and Flora</i>	Operation	Low	Negligible	Adverse	Negligible
<i>Terrestrial Fauna</i>	Operation	Low	Negligible	Adverse	Negligible
<i>Aquatic Biodiversity</i>	Operation	Low	Low	Adverse	Low

## 7.2 Social Impacts of the Project

### 7.2.1 Population/Demography

#### 7.2.1.1 Construction Phase

It is foreseen that the Project will create temporary employment. It is planned to employ fifty (50) personnel during the construction phase of the project. The construction of the wastewater treatment plant is planned to take twelve (12) months from the date of project approval.

As the construction activities of the Project will be carried out in Aliaga OIZ which is 10 km from Aliaga City centre, it is anticipated by Aliaga OIZ that no accommodation facilities will be constructed for the workers within the scope of the Project. Rental accommodation residences in the city centre will be considered. No negative impact is expected from the Project in terms of population level in the settlements expected to be affected during the construction phase of the Project.

However, containers can be placed in the Project area for those who will work on the Project to rest, eat and for sanitary facilities.

Labour influx for construction is not expected during the project. The construction activities do not require additional/skilled labour from outside the locality. Contractors will be responsible for providing code of conduct training to each worker. The contractor will inform all workers orally and in writing about the code of conduct during the recruitment phase and the code of conduct document will be signed. ALOIZ will ensure that the contractors establish the code of conduct and check that the workers have received training on communication with the public before starting work. To avoid the negative impacts of any workforce influx, ALOIZ will give priority to the local people in recruitment, and this will be added to the terms of the contracts of the Contractor and possible subcontractors in order to ensure this.

As a result, no change in the population is expected due to the project.

#### 7.2.1.2 Operation Phase

In the operation phase, 11 workers are expected to be employed by Aliaga OIZ. As a result, no change in the population is expected due to the project.

### 7.2.2 Cultural Heritage

The project area is within the boundaries of Aliaga OIZ. Necessary assessments were made by the authorized institutions and organizations related to Cultural Assets during the selection of the OIZ location. Therefore, the project will not cause alteration, damage or removal of any known cultural heritage assets and constrain access to cultural sites for the communities.



If any cultural property is found during construction (excavation) works ("chance find"), the Chance Find Procedure will be implemented, and any findings will be reported to the local authorities. Chance Finds Procedure is given in Annex 7. In such cases, construction works will be stopped immediately, the area will be taken under protection, and the Izmir No. 2 Cultural Heritage Conservation Regional Board Directorate will be notified. The construction works will not resume unless permitted by the relevant authority.

### **7.2.3 Economy/Employment**

#### **7.2.3.1 Construction Phase**

It is foreseen that the Project will create temporary employment. The construction of the wastewater treatment plant is planned to take twelve (12) months from the date of project approval. The construction activities do not require additional/skilled labour from outside the locality and will employ forced labour and/or child labour. Downsizing of the current labour force is not expected. During the construction phase, it is planned to employ 50 people. Priority will be given to local people.

Regarding procurements of goods and services, priority will be given to contributing to the local economy through the use of local materials during the construction period and paying attention to procuring various goods and services locally.

Work permits of the workers to be employed within the operational scope of the Project will be monitored by Aliağa OIZ and recruitment will be carried out within the framework of the LMP of the project. Legal work permits will be checked, and recruitment will be carried out to ensure the working conditions detailed in Section 7.2.6 during construction and operation phases. Unregistered, child or forced labour will not be allowed.

#### **7.2.3.2 Operation Phase**

In the operation phase, 11 workers are expected to be employed by Aliağa OIZ. It is expected that additional jobs will not arise directly in the facility but in the factories that will benefit from the facility and that will create economic development in the region. Improving the Wastewater Treatment Plant and increasing its capacity will increase the interest in the OIZ and attract new investments.

The project will provide benefits for local communities through new employment opportunities during the construction phase and, to a lesser extent, at the operating phase, and opportunities for local businesses.

### **7.2.4 Vulnerable/Disadvantaged Groups**

Vulnerable groups according to the information provided by the headman of neighborhoods are presented in Section 6.5. Construction works for the Project will have a short-term and temporary impact. The Project does not require any relocation or land acquisition.

The project does not involve access restriction, resettlement, or physical displacement of any persons. No damage to livelihood income for the vulnerable groups is foreseen. Therefore, vulnerable/disadvantaged groups within the Project impact area are not expected to be adversely affected by the Project. Considering the social benefits (e.g. increased employment opportunities, prevention of environmental pollution) of the Project, the Project has the potential to benefit vulnerable/disadvantaged groups.

### **7.2.5 Working Conditions and Labour Management**



Labor Management Procedures (LMP) have been prepared for Türkiye Organized Industrial Zones Project. It aims to protect workers' rights and ensure the management and control of activities that may pose labour-related risks. It describes how MoIT will comply with the requirements of World Bank Environmental and Social Standard 2 (ESS 2), "Labor and Working Conditions", and with Turkish labour, employment and occupational health and safety laws.

Labour relations are governed by the provisions of the Turkish Labor Law (4857 numbered). The Law of Turkish on Occupational Health and Safety (numbered 6331) provides for provisions on occupational health and safety and applies to direct and contracted workers, including foreign workers. Social Security and General Health Insurance Law (Law No: 5510) regulates social insurance and general health insurance.

Aliağa OIZ will be responsible for human resources during the construction and operation phases. The Project will comply with national labour, social security and occupational health and safety laws and the principles and standards of the International Labour Organization convention. The Project Owner is responsible for full compliance with all Turkish Laws and International Labor Organization Conventions regarding child labour, forced labour, discrimination, freedom of association, collective bargaining, working hours and minimum wages.

Aliağa OIZ will be responsible for the followings:

- Not use or employment of children during the construction phase under 18 years of age,
- Not use or employment of forced labour and ensure a Human Resources Policy in compliance with the European Convention on Human Rights and the Turkish Constitution,
- Elimination of discrimination based on language, race, sex, political opinion, philosophical belief, and religion in labour relations,
- Ensuring workers' access to the right to collective bargaining (Law No. 6356 on Trade Unions and 4857 Labour Law on Collective Bargaining),
- Ensure access to an effectively functioning Project grievance mechanism.
- Ensure workers are provided with written contracts containing i.a. job description, working hours, wages, information about their rights and duties, code of conduct and information of workers' GM.
- To reduce the possible impacts on the neighbourhoods, facilities such as food, sanitary facilities and resting areas will be provided within the Project Area in accordance with the use of the employees.
- Review and approve the contractor's labour management plan that should be in line with the LMP prior to the construction phase,
- Review and approve the contractor's OHS plan prior to the construction phase,
- Monitor that contractors/subcontractors fulfil their obligations to contracted workers as set out in relevant procurement documents in accordance with ESS2, national labour and OHS laws,
- Keeping records of recruitment and employment processes of direct reports,
- Monitor the potential risks of child labour, forced labour and serious safety issues in relation to primary support workers, • Monitor the training of relevant project staff,
- Ensure that a grievance mechanism for project workers is established and implemented and that workers are informed about it,
- Monitor the training of employees on Code of Conduct and to monitor their compliance,



- Monitor that occupational health and safety standards are met in workplaces in line with national occupational health and safety legislation, ESS2 OHS requirements, occupational health and safety plan,
- Monitoring employees' compliance with work behaviour rules,
- Establish and implement a procedure for documenting specific project-related incidents such as occupational accidents, illnesses and time-loss accidents.
- In cases of severe, fatal and mass accidents, informing law enforcement, Labor Inspectorate and MoIT,

In addition to legal requirements and the Labor Management Procedure, the contractor will be responsible for the followings:

- Employ or engage qualified social, labour and occupational safety experts to implement the project-specific labour management procedure, occupational health and safety plans and manage the performance of subcontractors,
- Develop a labour management plan for review and approval of Aliğa OIZ,
- Develop an OHS plan for review and approval of Aliğa OIZ,
- Ensure labour management plan and OHS plan are in place and applied by all contract and subcontracted workers,
- Supervise subcontractors' adherence to the labour management plan and OHS plans,
- Keeping records of the recruitment and employment processes of contracted employees,
- Follow up the employment process of subcontracted workers to ensure that it is carried out in accordance with the labour management procedure and national labour law,
- Developing and implementing a grievance mechanism for employees, evaluating complaints from contracted and subcontracted workers,
- Provide written contracts to the contracted workers with job descriptions, wages, working hours, rights and duties fully described,
- Provide regular induction training to employees, including but not limited to OHS, social familiarization, Code of Conduct, Sexual Harassment/Sexual Abuse prevention training,
- Ensure that all contractor and subcontractor employees understand and sign the Code of Conduct before starting work,
- Establish and implement a procedure for recording/ documenting specific project-related incidents such as occupational accidents, illnesses and time-loss accidents,
- Notify law enforcement, Labor Inspectorate and OIZ in case of severe, fatal and mass accidents.

#### **7.2.5.1 Construction Phase**

Personnel will be employed by the Contractor during the construction phase of the Project. During the project construction, it is anticipated that 50 workers will be mobilized. Where possible, employment of local labour will be prioritized. Child labor and forced labor shall be prohibited. All Turkish Laws and International Labor Organization (ILO) Conventions on child labour, forced labour, discrimination, freedom of association and the right to collective bargaining will be complied with.

A labour force of fifty personnel shall be required during the construction phase of the project. However, since the number of personnel to work on the project is quite low, no labour inflow is expected. To the extent possible, labour and other employees shall be recruited locally. However, there may be employees who are experts in their fields and come from outside the city, and they will require accommodation. Rental accommodation residences in the city centre will be considered.



### 7.2.5.2 Operation Phase

A labour force of 11 personnel shall be required during the operation phase of the project.

#### 1.1.1.1 Training

On-the-job and OHS training of all employees will be given and recorded within the scope of the Regulation on the Procedures and Principles of Occupational Health and Safety Trainings of Employees published in the Official Gazette numbered 30430 and dated 05.2018.

According to LMP, project workers will receive OHS training at the beginning of their employment, as induction, and regularly thereafter, to cover legislative requirements. Training will cover the relevant aspects of OHS associated with daily work, including the ability to stop work without imminent danger and respond to emergencies.

The consultant will also provide training to the personnel about environmental and social standards of the project, ESMP and SEP. The Contractor shall inform its personnel, subject to the supervision of the Aliğa OIZ, on the implementation of all measures to prevent and/or minimize environmental and social impacts during construction.

Training in the code of conduct will be provided to workers. The scope of the Code of Conduct will be

- General conditions
- Human rights and labour rights
- International humanitarian law
- Protection of the environment
- Anti-corruption
- Gender-Based Violence (GBV), Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH)
- Grievance Mechanism

The contractor will also provide GBV, SEA/SH and GM trainings to the employees. The scope of this training will be:

- Prevention of Gender-Based Violence (GBV), Sexual Exploitation and Abuse/Sexual Harassment, • Grievance Mechanism.

Training will be repeated at regular intervals, taking into account the changing and emerging new risks specified in the Regulation on the Procedures and Principles of Occupational Health and Safety Trainings of Employees. Information and training activities will be carried out not only for employees but also on measures to be taken for public health and safety.

Measurement and evaluation should be carried out at the end of the training. According to the results of the evaluation, it can be determined whether the training is effective or not and if necessary, changes can be made to the training programme or trainers, or the training can be repeated.

Training records will be kept on file. These records will include a description of the training, the number of hours of training provided, training attendance records, and results of evaluations. In addition,

### 7.2.6 Community Health and Safety



Community Health and Safety is covered under the WB ESF ESS4. ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable.

#### 7.2.6.1 Construction Phase

Public health and safety issues are associated with risk factors that may arise from the construction and operation periods of the Project. The following potential impacts were identified during the construction phase of the Project.

- Increased traffic and road traffic accidents and injuries,
- Impact of the project area on accessibility for the community
- Damage to existing infrastructure, increased demand on existing infrastructure and disruption of services,
- Noise and vibration,
- Threat to community culture, safety and security linked to the presence of construction workers and business opportunists
- Risk of infectious diseases such as sexually transmitted diseases due to labour flows and interaction of temporary workers with host communities,

İzmir Çanakkale State Road and/or Menemen Aliağa Çandarlı Motorway and OIZ internal roads will be used for transportation and traffic to the project area. Local roads used to access settlements will not be used. Therefore, negative impacts related to transportation and traffic will not be caused.

The project does not cause access restrictions, and therefore, the project will not have an impact on accessibility for the community.

The project area is within the OIZ and the OIZ has a strong infrastructure, there is no situation that will disrupt public services in the project area.

The Project activities within the construction phase are associated with a range of activities that generate noise. Since the planned WWTP is in an industrial area, the nearest settlement to the WWTP construction site is 3.4 km. There exists Nemrut Small Industry Site about 150 m away. There are no sensitive receptors such as health centres, schools, or mosques near the Project Area.

There will be no impact on community culture and safety as there will be no interaction with society and no impact on community transportation and sensitive groups is expected. As the Project area is located within the OIZ and the OIZ is currently surrounded by fences, warning signs and additional security measures will be implemented so that access and negative impacts on public health will be prevented.

As mentioned above, the contractor will also provide GBV, SEA/SH and GM trainings to the employees. Besides, awareness-raising activities will be organized for workers and security personnel to prevent cultural problems due to rude behaviour of workers and/or security personnel towards the population of the area related to gender-based violence (GBV) and sexual exploitation and abuse and sexual harassment and attitudes that disrupt the environment such as noise.

#### 7.2.6.2 Operation Phase



During the operation phase of the project, there will be no potential impact. Entry to the project area will be prevented except for authorized persons. Wire fences will be erected for this purpose and regularly checked. Thus, the negative effects that may occur due to uncontrolled entry will be prevented.

During the operation phase of the project, it is not expected to be an activity will create emissions. On the other hand, as suitable operating conditions are not provided, odor problems may occur.

According to PID, Aliağa OIZ administration did not receive complaints related to odor during the operation of the existing WWTP. The prevailing wind direction in İzmir is southeast and west. Therefore, the odor might affect the businesses and service facility building to be built. If odor generation is observed in future operation staff will check and revise operational conditions.

## **7.2.7 Traffic and Transportation**

İzmir Çanakkale State Road and/or Menemen Aliağa Çandarlı Motorway and OIZ internal roads will be used for transportation and traffic to the project area. Local roads used to access settlements will not be used. Considering the current traffic and capacity of the state road and motorway, the project will not bring additional traffic load to the state highway. Therefore, negative impacts related to transportation and traffic will not be caused. However general measures such as driver training, speed limits, limiting unnecessary use of noisy equipment, etc. will be implemented.

### **7.2.7.1 Construction Phase**

İzmir Çanakkale State Road and/or Menemen Aliağa Çandarlı Motorway and OIZ internal roads will be used for transportation and traffic to the project area. Local roads used to access settlements will not be used. Therefore, negative impacts related to transportation and traffic will not be caused. However general measures such as driver training, speed limits, limiting unnecessary use of noisy equipment, etc. will be implemented. Maintenance of the construction machinery will be followed and the contractor will install all signs, barriers and control devices need to ensure the safe use of the road by traffic and pedestrians.

### **7.2.7.2 Operation Phase**

In the operation phase, 11 workers are expected to be employed by Aliağa OIZ. no traffic impact is expected during the operation phase of the Project.

## **7.2.8 Occupational Health and Safety**

For the construction period, emergency plans and procedures will be implemented by the Contractor according to the national legislation. The OIZ will prepare its emergency plans to support the establishments for the operation phase.

National laws/ regulations and international conventions/ standards related with Occupational Health and Safety are

- Law on Occupational Health and Safety (No. 6331), Published on Official Gazette dated: 30.06.2012,)
- Law on Occupational Health and Safety (No. 6331, Published on Official Gazette dated: 30.06.2012),



- Labor Law (No. 4857, Published on Official Gazette dated: 10.06.2003),
- Law of Obligations (No. 6098, Published on Official Gazette dated: 04.02.2011)
- General Health Law (No. 1593, on Official Gazette dated: 06.05.1930)
- Social Insurance and General Health Insurance Law (No. 5510, Published on Official Gazette dated: 16.06.2006)
- Regulation on Occupational Safety and Health Services (Published on Official Gazette dated: 29.12.2012, No: 28512)
- Regulation on Duties, Rights and Responsibilities of OSEs (Published on Official Gazette dated: 29.12.2012, No: 28512),
- Regulation on Occupational Health and Safety in Construction Works (Published on Official Gazette dated: 05.10.2013, No: 28786),
- Regulation on the Use of Personal Protection Equipment at Workplaces (Published on Official Gazette dated: 02.07.2013, No: 28695),
- Regulation on Emergency Situations in Workplaces (Published on Official Gazette dated: 18.06.2013, No: 28681),
- Regulation on the Procedures and Principles of Occupational Health and Safety Training of Employees (Published on Official Gazette dated: 15.05.2013, No: 28648),
- Regulation on Health and Safety Precautions Regarding Working with Chemicals (Published on Official Gazette dated: 12.08.2013, No: 28733),
- Regulation on the Protection of Workers from Noise Related Risks (Published on Official Gazette dated: 28.07.2013, No: 28721),
- Regulation on the Protection of Workers from Vibration Related Risks (Published on Official Gazette dated: 22.08.2013, No: 28743),
- Regulation on Protection of Workers from Explosive Hazards (Published on Official Gazette dated: 30.04.2013, No: 28633)
- Regulation on Management of Dust (Published on Official Gazette dated: 05.11.2013, No: 28812),
- Regulation on Health and Safety Signs (Published on Official Gazette dated: 11.09.2013, No: 28762),
- Regulation on the Occupational Health and Safety for Temporary or Fixed Term Jobs (Published on Official Gazette dated: 23.08.2013, No: 28744),
- First Aid Regulation (Published on Official Gazette dated: 29.07.2015, No: 29429),
- Regulation on Personal Protection Equipment (Published on Official Gazette dated: 01.05.2019, No: 30761),
- Manual Handling Operations Regulation (Published on Official Gazette dated: 24.07.2013, No: 28717),
- Regulation on the Procedures and Principles of Employment of Children and Young Workers (Published on Official Gazette dated: 06.04.2004, No: 25425),
- Regulation on Risk Assessment for Occupational Health and Safety (Published on Official Gazette dated: 29.12.2012, No: 28512),
- Regulation on Health and Safety Conditions Regarding Use of Work Equipment (Published on Official Gazette dated: 25.04.2013, No: 28628),



- Communiqué on Occupational Health and Safety Hazard Classes List (Published on Official Gazette dated: 26.12.2012, No: 28509),
- ILO Conventions including Occupational Safety and Health Convention (No. 155), Occupational Health Services Convention (No. 161), and Safety and Health in Construction Convention (No. 167),
- WB ESS2,
- WB EHS Guidelines for Water and Sanitation,
- WB EHS Guidelines for Waste Management Facilities,
- Türkiye Organized Industrial Zones Project Labor Management Procedure.

#### 7.2.8.1 Pre-Construction Phase

During the pre-construction phase (before construction works start), the contractor will prepare a Risk Assessment Report, Emergency Preparedness and Response Plan and Occupational Health and Safety Management Plan in accordance with Law on Occupational Health and Safety, Regulation on Occupational Safety and Health Services, Regulation on Risk Assessment for Occupational Health and Safety, Regulation on Duties, Rights and Responsibilities of OSEs, WB ESS 2 and WB EHS Guidelines for Water and Sanitation and ILO Declaration on Fundamental Principles and Rights at Work.

Occupational Health and Safety Management Plan shall be prepared for the elimination of risks and necessary precautions shall be taken.

Specifically, the objectives associated with the Occupational Health and Safety Management Plan are:

- Minimize the risk of occupational health and safety hazards to the workers,
- Prevention of work-related accidents, reporting near misses, personnel injuries, and occupational illnesses,
- Ensure compliance with all applicable occupational health and safety regulations and other legal and contractual requirements,
- Integrate health and safety procedures and safe work practices into every operational activity,
- Encourage employees to maintain a healthy and safe workplace through periodic reviews of operational procedures, and provision of training,
- Ensure the availability of resources to fully implement the Health and Safety policy.

According to the relevant provision of the national laws/ regulations and international conventions/ standards, all contractors and sub-contractors shall manage the construction site in such a way that the workers and communities are properly protected against possible OHS risks. The following OHS standard requirements should as a minimum be included in the OHS Plan to be prepared by the contractors:

- Risk Assessment Procedure,
- Work permitting for hazardous work (working at heights, hot work, work on energized lines, work within confined spaces),
- Golden rules for life-threatening works,
- Emergency response procedure,
- Fall prevention and working at heights procedure,



- Excavations safety, ladders and scaffolders safety; welding and cutting safety; Cranes, Derricks, and forklifts safety; power and hand tools safety,
- Respiratory prevention of chemical and airborne hazards (including dust, silica and asbestos); electrical safety (hazardous energies control, lock out tag out, energy verification, safe distance work, wiring and design protection, grounding, circuit protection, arc fault protection,
- Electrical safety procedure, PPE and dielectric tools);
- Hazards communication procedure; noise and vibration safety; steel erection safety; fire safety; material handling safety; concrete and masonry safety,
- Using PPE procedure
- Accident investigation and root cause analyses procedure,
- Permit to work procedure,
- Lock out tag out procedure, □ OHS training procedure, and □ Refuse to work policy.

The Occupational Health and Safety Management Plan shall be periodically revised whenever there is a major accident, changes in organization, processes, procedures, approved materials (including risk assessment), legislation, and work patterns. In addition, the Occupational Health and Safety Management Plan will, among other issues, also include roles and OHS responsibilities. The contractor will appoint own full-time OHS staff that will be responsible for the implementation and supervision of the OHS.

For a possible accident and emergency, an Emergency Preparedness and Response Plan shall be prepared, emergency teams shall be established, and drills and trainings shall be conducted in accordance with emergency scenarios. The emergency Preparedness and Response Plan should include;

- Emergency scenarios and relevant emergency preparedness and response actions with the allocations of responsibilities to local communities and authorities where appropriate,
- First aid training, special trainings to be given to extinguishing, rescue and protection teams,
- Specific stakeholder engagement based on consultation and participation with government and communities regarding the nature and potential consequences of the Project-related risks,
- Training of the personnel for the response to emergencies in accordance with the requirements outlined in the specifications,
- Emergency drills to be conducted, at least once a year frequency and in formats according to Regulation on Emergencies in Workplaces,
- Evaluation of findings and lessons learnt from drills and corrective actions.

#### **7.2.8.2 Construction Phase**

##### **Working at Height**

Work at height is the biggest single cause of fatal and serious injury in the construction industry, particularly on smaller projects. Working from a level difference and the possibility of injury as a result of falling are considered for the employees as “working at height”.

Ladders, scaffolds, mobile elevating work platforms and suspended access equipment will be used during the construction and falls occur from them.



The risk related to working at height will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

### **Working with Chemicals**

Many products used at construction sites consist of chemicals. Workers may be exposed to dangerous chemicals during construction activities. These include lead, silica, carbon monoxide, and paints. The chemicals can exist in several forms and can enter the body in a variety of different ways including inhalation (breathed in), ingestion, absorption and injection. Chemical exposure causes acute and chronic health problems.

The risk related to working with chemicals will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

### **Fire and Explosion**

Flammable materials, electrical equipment and heat sources will be present at the construction site. This means that there's a multitude of sources for fires or explosions. Hazards that can cause fires and explosions during the construction period are given below:

- There will be many dangers of high heat and sparks on construction sites. Equipment, such as those used in welding, cutting, and grinding, may create sparks when being used that can catch fire.
- Electrical errors i.e. electrical wires short-circuit, are insufficient ground fault protection causes fires.
- Defective equipment for example tools, heating equipment, and electrical wiring can cause a fire when being used.
- Sources of fuel, such as propane, gas lines, and acetylene on construction sites can cause a fire if they come in contact with a heat source.
- Chemical explosions (open solvents/fuels, fuel tanks and chemical tanks or drums), fires (open solvents and vehicles/heavy equipment), pressurized container explosions (vehicle tires, pipes/pipelines and water tanks) and arc flashes/blasts (switchboards, circuit breakers, transformers, other electrical wiring and parts) might cause to construction site explosions.
- Temporary lighting and lamps - where necessary the illumination of work areas is from temporary lighting installed or from specific task lighting. The hazards from such lighting come from placing light units too close to combustible items not allowing the lamps to cool or from broken lamp units where hot surfaces are exposed. Lighting units should be secured in a position away from combustible material to prevent them from being dislodged. Halogen and halide lights should not be used due to their high operating temperatures. Lamp holders should be provided to ensure bulbs of different operating voltages cannot be interchanged and those not fitted with a bulb should be capped off. Light units should be inspected periodically, and broken units should be removed immediately.
- Portable heaters should only be permitted where necessary and then portable heaters should be regarded in the same category as 'hot work' and an assessment should be made of the suitability of the heater and its location; the most hazardous types of portable heaters should be avoided.

The risk related to fire and explosion will be mitigated by the implementation of the mitigation measures presented in Chapter 8 and in accordance with EU ATEX directives.



## Noise

During the construction phase, noise will be generated due to excavation and construction works. This impact can be mitigated with general measures such as arranging the working hours during which the noisy activities will be carried out and providing the necessary information to the enterprise. Besides, measures (e.g., regular maintenance of the equipment, selection of low noise machines, use of personnel protective equipment etc.) will be taken to reduce the noise to acceptable limits. No employee should be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection in accordance with the IFC's Environmental, Health, and Safety (EHS) Guidelines: Occupational Health and Safety. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).

Employer ensures that employees are subject to health surveillance;

- No. 6331,
- 1) In cases required according to Article 15 of the Occupational Health and Safety Law
  - 2) When deemed necessary according to the results of the risk assessment carried out in the workplace,
  - 3) At regular intervals to be determined by the workplace physician,

These impacts will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

## Vibration

Workers will be exposed to vibration when using grinders, polishers, strimmer's, chainsaws, power drills, breakers, crashers and concrete vibrators. Vibration can lead to permanent injury of the hands and arms. The vibration effect will be low for the workers.

In all applications limits mentioned in regulation on the Protection of Workers from Vibration Related Risks and IFC's Environmental, Health, and Safety (EHS) Guidelines: Occupational Health and Safety will be complied with. Daily exposure action value for an eight-hour working period (the value that, if exceeded, requires controlling the risks that may arise from the employee's exposure to vibration) 2.2 m/s<sup>2</sup> for hand-arm vibration; 0.5 m/s<sup>2</sup> for whole body vibration. The daily exposure limit value for an eight-hour working period (the value to which employees should never be exposed to vibration above this value) is 5 m/s<sup>2</sup> for hand-arm vibration; 1.15 m/s<sup>2</sup> for whole body vibration. Vibration level will be measured according to methodology described by American Conference of Governmental Industrial Hygienists (ACGIH).

## Rotating and Moving Equipment

Rotating and moving equipment will be used during construction. Injury or death can occur from being trapped, entangled, or struck by machinery parts due to unexpected starting of equipment or unobvious movement during operations.

The risk related to rotating and moving equipment will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

## Electrical

Several electrical machines will be used during the construction phase, therefore there will be panels, cables, and cords at the construction site. Exposed or faulty electrical devices, such as circuit breakers, panels, cables, cords and hand tools can pose a serious risk to workers. Overhead wires can be struck by metal devices, such as poles or ladders, and by vehicles with metal booms. Vehicles or grounded metal objects brought into close proximity to overhead wires may result in arcing between the wires and the object, without actual contact.



The risk related to electricity will be mitigated by implementation of the mitigation measures presented in Chapter 8.

### **Eye Hazards**

Solid particles from a wide variety of industrial operations, and / or a liquid chemical spray may strike a worker in the eye causing an eye injury or permanent blindness.

The risk related to eye hazards will be mitigated by implementation of the mitigation measures presented in Chapter 8.

### **Welding/ Hot Work**

Welding creates an extremely bright and intense light that may seriously injure a worker's eyesight. In extreme cases, blindness may result. Additionally, welding may produce noxious fumes to which prolonged exposure can cause serious chronic diseases.

The risk related to welding/hot work will be mitigated by implementation of the mitigation measures presented in Chapter 8.

### **Construction Vehicle Driving and Site Traffic**

Construction vehicles have risk of accident with other vehicles, pedestrians, and equipment.

The risk related to construction vehicle driving and site traffic will be mitigated by implementation of the mitigation measures presented in Chapter 8.

### **Working Environment and Temperature**

Exposure to hot or cold working conditions in indoor or outdoor environments can result temperature stress-related injury or death. Use of personal protective equipment (PPE) to protect against other occupational hazards can accentuate and aggravate heat-related illnesses. Extreme temperatures in permanent work environments should be avoided through implementation of engineering controls and ventilation.

The risk related to working environment and temperature will be mitigated by implementation of the mitigation measures presented in Chapter 8.

### **Ergonomics, Repetitive Motion, Manual Handling**

Injuries due to ergonomic factors, such as repetitive motion, over exertion, and manual handling, take prolonged and repeated exposures to develop, and typically require periods of weeks to months for recovery. Manual handling is hazardous manual handling if it involves:

- repeated or sustained application of force,
- sustained awkward posture,
- single or repeated use of high force,
- exposure to sustained vibration,
- handling live people or animals,
- handling loads that are unstable, unbalanced or hard to hold or grasp.



The risk related to ergonomics, repetitive work, manual handling will be mitigated by implementation of the mitigation measures presented in Chapter 8.

### **Illumination**

The work area light intensity should be adequate for the location and type of activity, and should be supplemented with dedicated workstation illumination, as needed.

The risk related to illumination will be mitigated by implementation of the mitigation measures presented in Chapter 8.

### **Air Quality**

Poor air quality due to the release of contaminants into the workplace can result in possible respiratory irritation, discomfort, or illness to workers. Employers should take appropriate measures to maintain air quality in the work area.

The risk related to air quality will be mitigated by implementation of the mitigation measures presented in Chapter 8.

### **Personal Protective Equipment (PPE)**

Personal Protective Equipment (PPE) provides extra protection to workers exposed to workplace hazards in conjunction with other facility controls and safety systems. PPE is considered a last resort that is above and beyond the other facility controls and provides the worker with an extra level of personal protection. Safety glasses, helmets, hearing protectors, safety shoes, gloves made of rubber or synthetic materials, facemasks, insulating clothes are general examples of occupational hazards and types of PPE available for different purposes.

#### **7.2.8.3 Operation Phase**

At least, below mentioned key testing and commissioning items should be completed to be ensure safe operation after the construction.

- Testing:
  - Hydrostatic testing
  - CCTV & ovality
  - Plug insertion
  - Chlorination
  - Water quality sampling
- Commissioning:
  - Bypass
  - Connection to existing asset
  - Complete commissioning checklist.

#### **Working at Height**

Although necessary precautions will be implemented at the working areas at height by covering ground-mounted safety railing and compliant handrail systems, lifelines, and working/maintaining platforms. There is a risk of falling due to working at height during monitoring, maintenance and repair. Although the risk is low, the risk will be mitigated by the implementation of the mitigation measures presented in Chapter 8.



## Working with Chemicals

The names of chemicals used for the chemical treatment unit in the plant and their hazard class are given below;

- Iron (III) Chloride (H302 - Harmful if swallowed, H315 - Causes skin irritation, H318 Causes serious eye damage),
- Flocon 744 (R 38: Irritating to skin, S 24/25: Avoid contact with eyes and skin),
- Sodium Hypochlorite (H 314 - Skin Corrosion/Irritation, Harmful, H400 - Harmful to the aquatic environment - Acute hazard and H411 Harmful to the aquatic environment Chronic hazard),
- Antifoam 10 A (H 319 - Causes serious eye irritation).

These chemicals present potential hazards that can be detrimental to human health and the environment. Therefore, the chemicals will be stored indoors by taking sealing precautions and only experienced personnel will handle chemicals, while employees will have minimal contact with them in terms of quantity and duration.

Adequate ventilation systems will be installed in all areas where chemicals are stored or used to ensure that air quality standards are maintained, and the risk of exposure is minimized.

Chemical management procedures will be prepared by Aliğa OIZ to be implemented during the operation phase.

## Fire and Explosion

In the operation phase, the fire risks will be mainly related to contact of a very strong oxidizer (disinfectant) with a flammable substance, as a result of improper storage of chemicals, human error, sudden release from process piping, etc. Confined spaces containing sewage can sometimes be deficient in oxygen due to organic oxidation and displacement by carbon dioxide. They can also contain flammable gases such as methane and toxic gases such as carbon monoxide and hydrogen sulphide. Explosion hazard, in the event of contact between ozone (a very strong oxidizer) and organic chemical and strong reduction agents.

The risk related to fire and explosion will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

## Noise

The following types of operational noise associated with treatment facilities and/or pump stations will be:

- Noise from the operation of mechanical equipment, including pumps, blowers, fans, centrifuges, and cogeneration engines or turbine generators,
- Noise from standby electrical generation equipment (e.g., backup generators for treatment facilities or pump stations during a power outage),
- Noise from electrical power substations,
- Noise from water flowing.

Equipment generating noise during the operation of the plant will be located in isolated closed buildings and some of them will be submerged in wastewater. Besides, measures (e.g., regular maintenance of the equipment, selection of low noise machines, use of personnel protective equipment etc.) will be taken to reduce the noise to acceptable limits. No employee should be exposed



to a noise level greater than 85 dB(A) for more than 8 hours per day without hearing protection in accordance with the IFC's Environmental, Health, and Safety (EHS) Guidelines: Occupational Health and Safety. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).

No significant noise is expected to be generated during the operation of the WWTP. Hearing tests will be performed by the employer for employees who are exposed to noise exceeding the highest exposure action values. Employer ensures that employees are subject to health surveillance;

1) In cases required according to Article 15 of the Occupational Health and Safety Law No. 6331,

2) When deemed necessary according to the results of the risk assessment carried out in the workplace,

3) At regular intervals to be determined by the workplace physician,

### **Vibration**

Vibration may occur from the operation of mechanical equipment at treatment facilities and pump stations. While these activities are not anticipated to pose significant risks to occupational health, appropriate protective equipment will be provided to all personnel involved.

In all applications limits mentioned in the regulation on the Protection of Workers from Vibration Related Risks will be complied with. Daily exposure action value for an eight-hour working period (the value that, if exceeded, requires controlling the risks that may arise from the employee's exposure to vibration) 2.5 m/s<sup>2</sup> for hand-arm vibration; 0.5 m/s<sup>2</sup> for whole body vibration. The daily exposure limit value for an eight-hour working period (the value to which employees should never be exposed to vibration above this value) is 5 m/s<sup>2</sup> for hand-arm vibration; 1.15 m/s<sup>2</sup> for whole body vibration.

### **Rotating and Moving Equipment**

Rotating and moving equipment will be used during operation and maintenance. Injury or death can occur from being trapped, entangled, or struck by machinery parts due to unexpected starting of equipment or unobvious movement during operations.

The risk related to rotating and moving equipment will be mitigated by the implementation of the mitigation measures presented in Chapter 8.

### **Electrical**

Electrical machines will be used during the maintenance works, operation phase, therefore there will be panels, cables, and cords at the site.

The risk related to electricity will be mitigated by implementation of the mitigation measures presented in Chapter 8.

### **Eye Hazards**

During maintenance and operation solid particles from a wide variety of industrial operations, and / or a liquid chemical spray may strike a worker in the eye causing an eye injury or permanent blindness.

The risk related to eye hazards will be mitigated by implementation of the mitigation measures presented in Chapter 8.



## **Welding/ Hot Work**

During maintenance works welding will be used. Welding creates an extremely bright and intense light that may seriously injure a worker's eyesight. In extreme cases, blindness may result. Additionally, welding may produce noxious fumes to which prolonged exposure can cause serious chronic diseases.

The risk related to welding/hot work will be mitigated by implementation of the mitigation measures presented in Chapter 8.

## **Vehicle Driving and Site Traffic**

During maintenance works high-capacity construction vehicles will be used, these vehicles have risk of accident with other vehicles, pedestrians, and equipment.

The risk related to vehicles will be mitigated by implementation of the mitigation measures presented in Chapter 8.

## **Working Environment and Temperature**

During the operation phase exposure to hot or cold working conditions can result temperature stress-related injury or death. Use of personal protective equipment (PPE) to protect against other occupational hazards can accentuate and aggravate heat-related illnesses. Extreme temperatures in permanent work environments should be avoided through implementation of engineering controls and ventilation.

The risk related to working environment and temperature will be mitigated by implementation of the mitigation measures presented in Chapter 8.

## **Ergonomics, Repetitive Motion, Manual Handling**

Injuries due to ergonomic factors, such as repetitive motion, over exertion, and manual handling, take prolonged and repeated exposures to develop, and typically require periods of weeks to months for recovery. These can be

- Musculoskeletal injuries caused by awkward working postures during the cleaning/inspection of the pipe system and/or the of installation,
- Overexertion while moving or handling heavy and bulky equipment or big packages of chemicals may affect various systems of the body.

The risk related to ergonomics, repetitive work, manual handling will be mitigated by implementation of the mitigation measures presented in Chapter 8.

## **Illumination**

Permanent lighting will be provided as needed during the operation phase.

## **Air Quality/ Odor**

Wastewater treatment plants produce a variety of odors, including hydrogen sulfide (H<sub>2</sub>S), mercaptans, ammonia, and amines. These odors can be unpleasant and even harmful to human health. Wastewater odor control is important to protect public health and the environment.

The risk related to air quality will be mitigated by implementation of the mitigation measures presented in Chapter 8.



## **8 ENVIRONMENTAL AND SOCIAL ASPECTS, AND BEST PRACTICE MITIGATION MEASURES**

This chapter presents cost effective and feasible measures to reduce adverse environmental and social impacts to an acceptable level. The mitigation measures listed below are presented in Table 8.1, Table 8.2 and Table 8.3. During the implementation of the mitigation plan, Project Standards as described in Chapter 3 will be complied with.

Within the scope of ESMP, an impact and risk assessment have been carried out and appropriate mitigation measures have been presented. Within the scope of the HSE Plan, it is aimed to ensure the safety of people and the protection of the environment and facilities by everyone involved in the Project. Mitigation Measures are proposed in accordance with Turkish legislation and WB ESSs.





## 8.1 Mitigation Plan for the Pre-Construction Phase

Table 8.1 Mitigation Measures for the Pre-Construction Phase

Issue	Potential Impact	Impact Significance Before Mitigation	Mitigation Measure	Impact Significance After Mitigation	Cost of Mitigation (if substantial)	Responsible Party/Parties
<b>Physical Environment</b>						
Air Quality: Dust Emissions	Reducing air quality surrounding the Project Area, Temporarily reduced line of sight on nearby roads and highways, Possible health hazards due to extended exposure to high dust emissions in the Project Area. Possibility of erosion with strong winds.	Low	<ul style="list-style-type: none"> <li>ALOIZ will ensure that the contractor will prepare and implement an Air Quality and Emissions Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific). The Air Quality and Emissions Management Plan will be prepared by the Contractor 30 days prior to commencement of the works to ensure;The employees will be trained on the Air Quality and Emissions Management Plan;</li> <li>Dust will be minimized from open area sources, including storage piles, by using control measures such as installing enclosures and covers and increasing the moisture content;</li> <li>Speed limitations will be defined and obeyed for construction vehicles;</li> <li>The drop height of potentially dust generating materials will be kept as low as possible;</li> <li>Dust suppression methods will be applied at construction sites to mitigate Projectrelated dust emissions. In this respect, the upper layers of the work sites/materials will be kept at a humidity level of about 10%. Watering will be applied at any time necessary including night time, weekends or off-days by using pressurized distribution or spraying systems that would ensure even distribution of water;</li> <li>If there is traffic flow on the existing roads near the work sites, dust suppression measures will be continuously applied to ensure traffic safety. If there is no traffic existing in the local roads, dust suppression measures will be applied only at local residential areas;</li> <li>All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic. Vehicle speeds are proposed to be limited to 30 km/h on unpaved surfaces;</li> <li>When there will be windy weather conditions (wind speed is above 30 km/hour) in the Project Area, excavation will not be carried out or additional measures such as placement of wind shields/barriers will be taken to prevent dust dispersion;</li> <li>Loading and unloading operations will be performed without throwing/scattering;</li> <li>Wind shields/barriers will be placed at work sites such as material storage areas to prevent dust dispersion where necessary;</li> <li>Solid screens or barriers that are at least as high as any stockpiles on site will be erected at the boundaries of the construction site adjacent to the crops and/or field;</li> <li>Any damage caused by insufficient or lack of dust suppression (transportation of dust to a residential area, wind borne dust deposits etc.) measures will be compensated by the contractor.</li> <li>The asphalt roads will be used as much as possible,</li> <li>Compliance with the air emission limit values stipulated in national legislation and WBG General EHS Guidelines will be ensured.</li> <li>Dust measurements will be conducted if any grievance regarding dust generation is received and mitigation measures will be enhanced in this respect such as increasing wet suppression/watering activities, further reducing speed/traffic if deemed necessary, considering both national and WBG EHS Guidelines limit values.</li> <li>Compliance with the air emission limit values stipulated in national legislation and WB Compliance with the air emission limit values stipulated in national legislation and WB</li> </ul>	Low	Included in preconstruction cost	Contractor ALOIZ Construction Consultant
Air Quality: Exhaust Emissions	Reducing air quality surrounding the Project Area, Possible health hazards due to extended exposure to high emissions in the Project Area. Increase in SO <sub>2</sub> , TOC, NO <sub>x</sub> CO and dust emissions. Increase in GHG emissions	Low	<ul style="list-style-type: none"> <li>All vehicles to be used in transportation activities will be issued an emission control stamp which is renewed every year by measuring the emissions from the exhausts;</li> <li>Relevant provisions of the Regulation on Air Pollution Control Sourced from Industry, the Regulation on Exhaust Gas Emission Control and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from construction machinery and trucks;</li> <li>Vehicles that can provide European Euro VI standards will be selected;</li> <li>Relevant provisions of the Regulation on Air Pollution Control Sourced from Industry and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from construction machinery and trucks;</li> <li>Exhaust systems of the vehicles (daily and periodically) will be controlled regularly. Daily maintenance will be carried out in each shift; and the working time of each vehicle will be registered by the operator in order to follow the total working hours for periodic maintenance.</li> <li>Vehicle speed will be controlled when passing through public transport areas, thus minimizing dust dispersion from vehicle transportation.</li> </ul>	Low	Included in preconstruction cost	Contractor ALOIZ Construction Supervision Consultant



			<input type="checkbox"/> Optimal utilization of the available construction equipment and materials in such a way that reduces greenhouse gas emissions; <input type="checkbox"/> Speed restrictions will be adopted by construction vehicles and optimal use of equipment to optimize fuel efficiency; <input type="checkbox"/> Regular maintenance of construction vehicles and equipment will be applied; <input type="checkbox"/> Idling of vehicles and machinery will be avoided. <input type="checkbox"/> Energy uses associated with construction vehicles and equipment will be monitored; <input type="checkbox"/> Training will be performed for project personnel regarding energy efficiency.			
Soil Environment: Preserving Topsoil	Loss of topsoil, Possibility of increased risk of erosion	Low	<input type="checkbox"/> ALOIZ will ensure that the contractor will prepare and implement a Soil Management Plan that is in line with the WB ESS1 and WBG General EHS Guidelines (both general and sector specific). The Soil Management Plan will be prepared by the Contractor 30 days prior to commencement of the works and the employees will be trained on the Soil Management Plan; <input type="checkbox"/> Where there is topsoil, topsoil will be stripped to a sufficient depth (15- 30 cm, depending on the topsoil depth) prior to the start of the land preparing activities. To avoid soil compaction, stripping operation will not be done when soil is wet. The average height of top soil stacks will be 1.5 meters. The side slope of these stacks will not exceed 3:1 (h:v); <input type="checkbox"/> Stripping of topsoil will not be conducted earlier than required to prevent the erosion of soil (wind and water); <input type="checkbox"/> At the end of the land preparing phase, the stored topsoil will be used for landscaping; The stripped topsoil will not be used for agribusiness.	Low	Included in preconstruction cost	Contractor ALOIZ/PIU Construction Consultant  Supervision
Soil Environment: Erosion Potential	Possibility of increased risk of erosion, Possibility of increased dust emissions caused by wind erosion.	Low	<input type="checkbox"/> The contractor will take additional mitigation measures, such as soil sampling, in case of a requirement revealed by the monitoring and/or any complaint. By establishing a suitable drainage system in the field, the potential impact of surface runoff will be minimized. In this context, drainage channels will be constructed in accordance with the topographical conditions of the site; <input type="checkbox"/> Pre-construction activities will be undertaken in the dry weather condition as much as possible to avoid surface runoff effects on stripped topsoil; <input type="checkbox"/> Stripping of topsoil will not be conducted earlier than required to prevent the erosion of soil (wind and water); <input type="checkbox"/> Circulation of heavy machinery to In the Project Area will be limited; <input type="checkbox"/> The disturbed areas and soil stock piles will be kept moist to avoid wind erosion of soil and the pile height will not be higher than 2 m; <input type="checkbox"/> Once the work is completed, construction areas will be quickly covered with topsoil and revegetated. Mulch, sod or compacted soil will be used to stabilize exposed areas.	Low	Included in preconstruction cost	Contractor ALOIZ Construction Consultant  Supervision

Soil Environment: Soil Contamination	Contamination of soil, Possibility of contamination of underground waters close to the surface, Scatter/dispersion of contaminated soil due to improper handling, transferring and disposal of the contaminated soil, Improper reuse of contaminated soil as landscaping,	Medium	<ul style="list-style-type: none"> <li>☐ ALOIZ will ensure that the Contractor will prepare and implement Oil and Chemical Spill Contingency Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific). The Oil and Chemical Spill Contingency Management Plan will be prepared by the Contractor 30 days prior to commencement of the work and employees will be trained on the Oil and Chemical Contingency Management Plan;</li> <li>☐ In order to minimize the impacts on soil environment, the amount of soil that could be subject to compaction and contamination/pollution will be minimized by ensuring the use of only the designated work sites and routes for the construction machinery and equipment and field personnel;</li> <li>☐ The fuel required for the construction equipment and vehicles to be used within the site during pre-construction phase will be supplied primarily from the nearest station; if deemed necessary, fuels that may possibly be stored at site will be stored in the areas where necessary impermeability precautions (including secondary containment) are taken;</li> <li>☐ Machinery and equipment will be checked regularly for leaking oil and fuel;</li> <li>☐ The provisions of the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes shall be complied with during pre-construction phase of the Project. Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources shall be complied with within the scope of the Project; Wastes and wastewater to be generated during the pre-construction phase of the Project will be stored and disposed in a controlled manner in accordance with the Waste Management Regulation and Regulation on the Control of Excavation, Construction and Demolition Wastes, WB ESS1, WBG General EHS Guidelines and in line with the management practices described in this report;</li> <li>☐ According to requirements specified in the Regulation on the Control Soil Pollution and Sites Contaminated by the Point Source, in terms of a possible soil contamination in the area, ALOIZ is obliged to notify the MoEUCC on possible soil pollution in the Project Area according to the procedure defined in the regulation. Based on the inspections that will be carried out by the MoEUCC, if the site will be defined as a contaminated site that needs to be cleaned up, the site will be cleaned up by firms authorized by the MoEUCC and ALOIZ will be the responsible entity to ensure clean up. Within the scope of cleanup activities, the following measures will be taken for the contaminated areas during the pre-construction phase: <ul style="list-style-type: none"> <li>○ Vehicles containing any stripped soil will be suitably covered to limit potential</li> </ul> </li> </ul>	Low	Included in preconstruction cost	Contractor ALOIZ Construction Consultant	Supervision
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			<ul style="list-style-type: none"> <li>○ dust emissions and truck bodies and tailgates will be sealed to prevent any discharge during transport;</li> <li>○ Only licensed waste haulers will be used to collect and transport contaminated soil to an appropriate treatment/disposal site and illegal disposal of the soil will be prohibited;</li> <li>○ Speed control for the trucks carrying contaminated soil will be enforced;</li> </ul> <ul style="list-style-type: none"> <li>☐ The use of contaminated soil for landscaping will be prohibited.</li> </ul>				
Water Resources: Quality Change in Water Bodies	Possibility of leakage of generated municipal wastewater that may cause to degradation in surface water and groundwater qualities, Increased possibility of surface runoff occurrence, Deterioration of quality in nearby water bodies due to wastes carried by surface runoff, erosion, waste dispersion or improper waste storage, handling and transfer.	Medium	<ul style="list-style-type: none"> <li>☐ ALOIZ will ensure that the contractor will prepare and implement a Water Resources Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific). The Water Resources Management Plan will be prepared by the Contractor 30 days prior to commencement of the works and employees will be trained in the Water Resource Management Plan;</li> <li>☐ Surface runoff resulted from rain/storm water or wastewater generation due to dust suppression activities will be prevented;</li> <li>☐ Stripping of topsoil will not be conducted earlier than required to prevent the erosion of soil (wind and water);</li> <li>☐ Pre-construction activities may pose the potential for accidental release/leakages of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. All chemical storage containers, including diesel fuel and hazardous liquid waste drums/containers will be placed in secondary containment in temporary storage area so as to minimize the risk of soil, surface water and groundwater contamination during the pre-construction;</li> <li>☐ For a case of possible breakdown and natural disaster situation, ALOIZ will ensure that that contractor will prepare, implement and monitor an Emergency Preparedness Plan and the employees will be trained on the plan.</li> <li>☐ The flow of natural waters should not be obstructed or diverted to another direction, which may lead to drying up of river beds or flooding of settlements.</li> </ul> <p>Activities should not affect the availability of water for drinking and hygienic purposes. No polluted substances, solid waste, toxic or hazardous substances will be stored, spilled or disposed of in water bodies for dilution or disposal.</p>	Low	Included in preconstruction cost	Contractor ALOIZ Construction Consultant	Supervision



Noise Management	<p>Possible health hazards due to extended exposure to high noise and vibration in/around the Project Area.</p> <p>Over exposure to increased noise and vibration levels may disturb routine life of human and animal populations nearby.</p>	Low	<ul style="list-style-type: none"> <li>□ ALOIZ will ensure that the contractor will prepare and implement a Noise Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) prior to the pre-construction works and the employees will be trained on the Plan. This condition will be included within Contractor's contract.</li> <li>□ The machinery and equipment to be used during the pre-construction phase (e.g. pile drivers, jackhammers, excavators, generators, compactors, drilling rigs, compressors, pumps) will not be operated at the same point/location but homogeneously distributed in the site if possible;</li> <li>□ During vehicle and equipment procuring/leasing process for the Project, item with lower noise levels than equivalent ones will be preferred, if feasible;</li> <li>□ The maintenance of the construction machinery and equipment will be carried out regularly and periodically. Daily maintenance will be carried out in each shift; and the working time of each vehicle will be registered by the operator in order to follow the total working hours for periodic maintenance. Periodic maintenance will be conducted at every 50, 250, 500, 1000, 2000 working hours. Maintenance forms will be filled out regularly;</li> <li>□ All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic;</li> <li>□ Noise measurements will be conducted by an authorized environmental laboratory in case of any grievance and mitigation measures will be enhanced in this respect such as use of noise barriers;</li> <li>□ Pre-construction works will be performed between 07:00 - 19:00 hours. Unless absolutely necessary, no pre-construction activities will be done at night. In case night operations are deemed necessary and the noise levels would be high, the public will be informed 1 week in advance about the time of construction activities; All pre-construction activities will be carried out in compliance with the noise limits set out in the Regulation on Environmental Noise Control (RENC) and WBG EHS Guidelines and the contractor will take additional mitigation measures in case of a requirement revealed by the monitoring;</li> <li>□ A grievance redress mechanism will be established to manage noise related grievances as well.</li> </ul> <p>The work schedule will be adjusted by communicating with sensitive receptors so that noisiest activities are undertaken during periods that will result in least disturbance.</p>	Low	Included in preconstruction cost	<p>Contractor ALOIZ Construction Consultant</p> <p>Supervision</p>
Resource Management	Resources used/consumed during works	Low	<ul style="list-style-type: none"> <li>□ ALOIZ will supervise the construction contractor via construction supervision consultant to select the most appropriate raw materials and resources by evaluating clean production options.</li> </ul>	Negligible	Included in preconstruction cost	<p>Contractor ALOIZ Construction Consultant</p> <p>Supervision</p>



Waste Generation	<p>Inefficient management of resources and increased amount of waste due to not separating waste and/or storing, handling or transferring wastes improperly.</p> <p>Possibility of increased public health hazard risks, deterioration of surface water, underground water and air quality, and/or soil contamination due to improper storage, handling and transfer of hazardous wastes,</p> <p>Possibility of air and/or soil pollution risk due to unauthorized burial and burning of waste on the site.</p>	Low	<ul style="list-style-type: none"> <li>ALOIZ will ensure that the contractor will prepare and implement a Waste Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific). The Waste Management Plan will be prepared by the Constructor 30 days prior to the commencement of the works and the employees will be trained on the plan;</li> <li>Waste to be generated within the scope of the Project will be managed in accordance with the waste management hierarchy;</li> <li>Waste will be separated (i.e., hazardous / non-hazardous, recyclable / non-recyclable) and stored in designated temporary storage areas;</li> <li>All kinds of implementations that may threaten personnel or public health will be avoided in all activities involving collection, temporary storage, transport and disposal of waste throughout the Project;</li> <li>Waste recycling, transport and disposal will be carried out by means of licensed companies and/or relevant Aliağa Municipality's vehicles;</li> <li>Incineration or burying of waste by any means at site and/or dumping of waste to nearby roads or water resources will not be allowed;</li> <li>Waste to be temporarily stored on site will be delivered to licensed transport vehicles appropriate to the type of waste for disposal. Information related to the operations in this context will be recorded and the records will be kept in the administrative building;</li> <li>Waste oils originating from machinery and vehicles will be stored in impervious tanks and containers that would be situated on impervious foundation in accordance with the "Regulation on Control of Waste Oils". Tanks and containers will be equipped with apparatus that would prevent over filling and will be filled till the designated level mark. Tanks and containers will have a red color and will be labeled as "waste oil". Disposal of waste oils will be controlled by the ALOIZ;</li> <li>Waste batteries from construction site and accumulators from vehicles will be disposed of in compliance with the consumer responsibilities specified in Article 13 of the "Regulation on Control of Waste Batteries and Accumulators". Accordingly, used batteries will be collected separately (from municipal wastes) and transferred to the TAP battery collection center;</li> <li>All other hazardous materials will be disposed of in accordance with the Waste Management Regulation;</li> <li>Hazardous waste to be temporarily stored on site will be delivered to licensed transport vehicles appropriate to the type of waste for disposal. Information related to the operations in this context will be recorded and the records will be kept in the administrative building;</li> <li>Hazardous or non-hazardous inscription, waste code, stored waste amount and storage date will be indicated/labelled on waste temporarily stored by classifying according to their properties. The reaction of waste with each other will be prevented by the measures taken in the Temporary Storage Area. The OIZ already has a Temporary Storage area, with impermeable ground, proper drainage for accidental leaks/spills, top cover and designated rooms for different types of waste, etc. However, if there is a need to establish a new temporary storage area for any reason, the necessary permit for the temporary Waste Storage Area will be taken from the Provincial Directorate of Environment, Urbanization and Climate Change.</li> <li>Spill kits will be available at the Temporary Storage Area and necessary precautions will be taken against possible fires such as provision of appropriate firefighting equipment.</li> <li>Workers will be trained in the proper transfer and handling of fuels and other materials and will require the use of gloves, boots, aprons, goggles and other protective equipment for protection when handling highly hazardous materials.</li> <li>After each construction site is decommissioned, all debris and waste shall be cleared.</li> </ul>	Low	Included in pre-construction cost	<div>Contractor</div> <div>ALOIZ</div> <div>Construction Consultant</div> <div>Supervision</div>
<b>Biological Environment</b>						
Terrestrial Habitats and Flora Species	Damage or loss of habitat and flora species	Low	<ul style="list-style-type: none"> <li>The working area will be clearly defined before vegetation clearance, where construction activities will occur.</li> <li>Access roads and associated facilities working areas will be clearly defined before the onset of construction activities so as not to harm flora elements outside the construction sites.</li> <li>Project construction sites and access roads will be separated from other areas with appropriate signboards, signs, and fences.</li> </ul>	Low	Included in construction cost	<div>Contractor</div> <div>ALOIZ</div> <div>Construction Consultant</div> <div>Supervision</div>
Terrestrial Fauna Species	Disturbing/harming populations	Low	<ul style="list-style-type: none"> <li>Topsoil stripping works will occur gradually, especially during breeding (April-May-June), so fauna elements can leave construction sites.</li> <li>Before land preparation works, fauna observations will be made in the area, species will be expected to escape, and species that cannot escape will be translocated to similar habitats around the Project Area.</li> </ul>	Negligible	Included in construction cost	<div>Contractor</div> <div>ALOIZ</div> <div>Construction Consultant</div> <div>Supervision</div>
Aquatic Biodiversity	Damage or loss of habitat	Low	<ul style="list-style-type: none"> <li>The riparian vegetation outside the project area will not be damaged.</li> </ul>	Negligible	Included in construction cost	<div>Contractor</div> <div>ALOIZ</div>



						Construction Consultant	Supervision
Pesticide Use and Management	Possibility of previous pesticides use in the project area	Negligible	<ul style="list-style-type: none"> <li>Conducting and evaluating pesticide measurements in the project area within the scope of pesticide management measures.</li> <li>Actions to be taken in case pesticides are unexpectedly detected at levels that threaten human health are: <ul style="list-style-type: none"> <li>Halt operations in the project area,</li> <li>Isolate contaminated areas</li> <li>Notify authorities (Provincial Directorate of the MoEUCC)</li> </ul> </li> <li>Conduct Health Monitoring</li> </ul>	Negligible	Included in pre-construction cost	Contractor ALOIZ Construction Consultant	Supervision
<b>Socio-economic Environment</b>							
Stakeholder Engagement	<p>Objections and obstruction efforts during the project/design phase due to lack of information to the people who are likely to be affected by the project</p> <p>Suspension of the project due to lack of Stakeholder Engagement Process and not receiving suggestions and complaints</p> <p>Insufficient stakeholder engagement activities and public consultation</p>	Low	<ul style="list-style-type: none"> <li>Before the start of construction works, the local people and all relevant stakeholders will be informed of the works to be performed and the measures to be taken.</li> <li>Comprehensive information on stakeholder engagement is provided in the SEP of the Project and the SEP will be updated and implemented throughout the Project.</li> <li>Informing the persons or organizations likely to be affected by the project about the project</li> <li>Establishing a grievance and suggestion mechanism in order to inform the persons and organizations that are likely to be affected by the Project as specified in the SEP, about any adverse environmental and social risks and how to submit any grievances, if required.</li> <li>Collection and evaluation of suggestions and complaints about the project</li> </ul>	Low	Included in pre-construction cost	Contractor ALOIZ Construction Consultant	Supervision
Occupational Health and Safety	<p>Risk of occupational health and safety hazards to the workers</p> <p>Work-related accidents (near misses, personnel injuries and occupational illnesses, fatalities)</p> <p>Noncompliance with all applicable occupational health and safety regulations and other legal and contractual requirements</p> <p>GBV and SEA/SH related incidents</p>	High	<ul style="list-style-type: none"> <li>Preparation of the following plans and procedures for the approval of the OIZ and the Construction Supervision Consultant by the Contractor before the commencement of construction works: <ul style="list-style-type: none"> <li>Occupational Health and Safety (OHS) Plan based on construction site OHS risk assessment, including work procedures (such as permit to works etc.), checklists and daily record forms</li> <li>Emergency Preparedness and Response Plan,</li> <li>Labor Management Plan (LMP) (including Worker Code of Conduct) in line with the LMP</li> </ul> </li> <li>Grievance Mechanism Procedure including Grievance Register</li> <li>Accident investigation and root cause analyze</li> <li>GM, GBV, SEA/SH trainings will be given to whole personnel before the construction.</li> <li>Contractors will address the risk of gender-based violence, through: <ul style="list-style-type: none"> <li>Mandatory training and awareness raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women.</li> <li>Informing workers about national laws that make sexual harassment and gender-based violence a punishable offence which is prosecuted</li> <li>Adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence;</li> <li>Developing a system to capture gender-based violence, sexual exploitation and workplace sexual harassment related complaints/issues.</li> </ul> </li> </ul>	Low	Included in pre-construction cost	ALOIZ Contractor	
Labour and Working Conditions	Labour Relations	Medium	<ul style="list-style-type: none"> <li>Contractors will need to maintain labour relations with local communities through a Code of Conduct (CoC).</li> <li>The CoC should be written in plain language and signed by each worker to indicate that they have: <ul style="list-style-type: none"> <li>received a copy of the CoC as part of their contract</li> <li>had the CoC explained to them as part of induction process</li> <li>acknowledged that adherence to this CoC is a mandatory condition of employment; and</li> <li>understood that violations of the CoC can result in serious consequences, up to and including dismissal, or referral to legal authorities</li> </ul> </li> <li>A copy of the CoC shall be displayed in a location easily accessible to the community and project affected people.</li> </ul>				
Community Health and Safety	Risk of health and safety hazards to the community members such as access from outside etc.	Low	<ul style="list-style-type: none"> <li>Preparation and implementation of the Community Health and Safety Plan such as <ul style="list-style-type: none"> <li>Informing community about the risks</li> </ul> </li> </ul>				

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Installing warning signs, fence/curtain for the perimeter of the construction site

## 8.2 Mitigation Plan for the Construction Phase

Table 8.2 Mitigation Measures for the Construction Phase



Issue	Potential Impact	Impact Significance Before Mitigation	Mitigation Measure	Impact Significance After Mitigation	Cost of Mitigation (if substantial)	Responsible Party/Parties
<b>Physical Environment</b>						
Air Quality: Dust Emissions	Reducing air quality surrounding the Project Area, Temporarily reduced line of sight on nearby roads and highways, Possible health hazards due to extended exposure to high dust emissions in the Project Area. Possibility of erosion with strong winds.	Low	<ul style="list-style-type: none"> <li>• ALOIZ will ensure that the contractor will prepare and implement an Air Quality and Emissions Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific). The Dust Management Plan will be prepared by the Contractor 30 days prior to commencement of the works to ensure;</li> <li>• The employees will be trained on the an Air Quality and Emissions Management Plan;</li> <li>• Dust will be minimized from open area sources, including storage piles, by using control measures such as installing enclosures and covers and increasing the moisture content;</li> <li>• Speed limitations will be defined and obeyed for construction vehicles;</li> <li>• The drop height of potentially dust generating materials will be kept as low as possible;</li> <li>• Dust suppression methods will be applied at construction sites to mitigate Project-related dust emissions. In this respect, the upper layers of the work sites/materials will be kept at a humidity level of about 10%. Watering will be applied at any time necessary including night time, weekends or off-days by using pressurized distribution or spraying systems that would ensure even distribution of water;</li> <li>• If there is traffic flow on the existing roads near the work sites, dust suppression measures will be continuously applied to ensure traffic safety. If there is no traffic existing in the local roads, dust suppression measures will be applied only at local residential areas;</li> <li>• All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic. Vehicle speeds are proposed to be limited to 30 km/h on unpaved surfaces;</li> <li>• When there will be windy weather conditions (wind speed is above 30 km/hour) in the Project Area, excavation will not be carried out or additional measures such as placement of wind shields/barriers will be taken to prevent dust dispersion;</li> <li>• Loading and unloading operations will be performed without throwing/scattering;</li> <li>• During transportation, excavated materials will be covered with nylon canvas or materials with grain size larger than 10 mm;</li> <li>• Wind shields/barriers will be placed at work sites such as material storage areas to prevent dust dispersion where necessary;</li> <li>• Solid screens or barriers that are at least as high as any stockpiles on site will be erected at the boundaries of the construction site adjacent to the crops and/or field;</li> <li>• Any damage caused by insufficient or lack of dust suppression (transportation of dust to a residential area, wind borne dust deposits etc.) measures will be compensated by the contractor.</li> <li>• The asphalt roads will be used as much as possible,</li> <li>• Compliance with the air emission limit values stipulated in national legislation and WBG General EHS Guidelines will be ensured.</li> <li>• Dust measurements will be conducted if any grievance regarding dust generation is received and mitigation measures will be enhanced in this respect such as increasing wet suppression/watering activities, further reducing speed/traffic if deemed necessary, considering both national and WBG EHS Guidelines limit values.</li> </ul>	Low	Included in construction cost	Contractor ALOIZ/PIU Construction Supervision Consultant
Air Quality: Exhaust Emissions	Reducing air quality surrounding the Project Area, Possible health hazards due to extended exposure to high emissions in the Project Area. Increase in SO <sub>2</sub> , TOC, NO <sub>x</sub> , CO, and dust emissions. Increase in GHG emissions	Low	<ul style="list-style-type: none"> <li>• All vehicles to be used in transportation activities will be issued an emission control stamp which is renewed every year by measuring the emissions from the exhausts;</li> <li>• Relevant provisions of the Regulation on Air Pollution Control Sourced from Industry, the Regulation on Exhaust Gas Emission Control and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from construction machinery and trucks;</li> <li>• Vehicles that can provide European Euro VI standards will be selected;</li> <li>• Relevant provisions of the Regulation on Air Pollution Control Sourced from Industry and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from construction machinery and trucks;</li> <li>• Exhaust systems of the vehicles (daily and periodically) will be controlled regularly. Daily maintenance will be carried out in each shift; and the working time of each vehicle will be registered by the operator in order to follow the total working hours for periodic maintenance.</li> <li>• Optimal utilization of the available construction equipment and materials in such a way that reduces greenhouse gas emissions;</li> <li>• Speed restrictions will be adopted by construction vehicles and optimal use of equipment to optimize fuel efficiency;</li> <li>• Regular maintenance of construction vehicles and equipment will be applied; <input type="checkbox"/> Idling of vehicles and machinery will be avoided.</li> <li>• Energy uses associated with construction vehicles and equipment will be monitored;</li> </ul>	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
			<input type="checkbox"/> Training will be performed for project personnel regarding energy efficiency.			



Soil Environment: Erosion Potential	Possibility of increased risk of erosion, Possibility of increased dust emissions caused by wind erosion.	Low	<ul style="list-style-type: none"> <li>□ By establishing a suitable drainage system in the field, the potential impact of surface runoff will be minimized. In this context, drainage channels will be constructed in accordance with the topographical conditions of the site;</li> <li>□ Construction activities (especially excavation works) will be undertaken in the dry weather condition as much as possible to avoid surface runoff effects on excavated soil;</li> <li>□ Circulation of heavy machinery to In the Project Area will be limited;</li> <li>□ The disturbed areas and soil stock piles will be kept moist to avoid wind erosion of soil and the pile height will not be higher than 2 m;</li> <li>□ Topography will be restored to provide stabilization immediately after the completion of construction at each location.</li> </ul>	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Soil Environment: Soil Contamination	Contamination of soil, Possibility of contamination of underground waters close to the surface, Scatter/dispersion of contaminated soil due to improper handling, transferring and disposal of the contaminated soil, Improper reuse of contaminated soil as landscaping,	Medium	<ul style="list-style-type: none"> <li>□ ALOIZ will ensure that the Contractor will continue to comply with the Oil and Chemical Spill Contingency Management Plan that was prepared in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) before the commencement of the works. The Contractor will ensure all the employees are trained on the Oil and Chemical Spill Contingency Management Plan and renew the training if necessary;</li> <li>□ In order to minimize the impacts on soil environment, the amount of soil that could be subject to compaction and contamination/pollution will be minimized by ensuring the use of only the designated work sites and routes for the construction machinery and equipment and field personnel;</li> <li>□ The fuel required for the construction equipment and vehicles to be used within the site during construction phase will be supplied primarily from the nearest station; if deemed necessary, fuels that may possibly be stored at site will be stored in the areas where necessary</li> <li>□ impermeability precautions (including secondary containment) are taken;</li> <li>□ Machinery and equipment will be checked regularly for leaking oil and fuel;</li> <li>□ The provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources shall be complied with within the scope of the Project;</li> <li>□ Wastes and wastewater to be generated during the construction phase of the Project will be stored and disposed in a controlled manner in accordance with the Waste Management Regulation and Regulation on the Control of Excavation, Construction and Demolition Wastes, WB ESS1, WBG General EHS Guidelines and in line with the management practices described in this report;</li> <li>□ According to requirements specified in the Regulation on the Control Soil Pollution and Sites Contaminated by the Point Source, in terms of a possible soil contamination in the area, ALOIZ is obliged to notify the MoEUCC on possible soil pollution in the Project Area according to the procedure defined in the regulation. Based on the inspections that will be carried out by the MoEUCC, if the site will be defined as a contaminated site that needs to be cleaned up, the site will be cleaned up by firms authorized by the MoEUCC and ALOIZ will be the responsible entity to ensure clean up. Within the scope of cleanup activities, the following measures will be taken for the contaminated areas during the construction phase: <ul style="list-style-type: none"> <li>○ Vehicles containing any excavated soil will be suitably covered to limit potential dust emissions and truck bodies and tailgates will be sealed to prevent any discharge during transport;</li> <li>○ Only licensed waste haulers will be used to collect and transport contaminated soil to an appropriate treatment/disposal site and illegal disposal of the soil will be prohibited;</li> <li>○ Speed control for the trucks carrying contaminated soil will be enforced; The use of contaminated soil for landscaping will be prohibited.</li> </ul> </li> </ul>	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Water Resources: Quality Change in Water Bodies	Possibility of leakage of generated municipal wastewater that may cause to degradation in surface water and groundwater qualities, Increased possibility of surface runoff occurrence, Deterioration of quality in nearby water bodies due to wastes carried by surface runoff, erosion, waste dispersion or improper waste storage, handling and transfer.	Medium	<ul style="list-style-type: none"> <li>• ALOIZ will ensure that the Contractor will continue to comply with the Water Resources Management Plan that was prepared in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) before the commencement of the works. The Contractor will ensure all the employees are trained on the Water Resources Management Plan and renew the training if necessary;</li> <li>• Surface runoff resulted from rain/storm water or wastewater generation due to dust suppression activities will be prevented;</li> <li>• The water to be used for dust suppression will be monitored and recorded in m³;</li> <li>• Discharge of wastewater, residues or other waste into groundwater or into surface water will be avoided. Portable toilets will be supplied for the workers at the construction sites. The limited amount of domestic wastewater generated at the construction site will be collected into the impervious septic tanks and then discharged into the nearest WWTP (Aliağa OIZ WWTP) by licensed sewer trucks;</li> <li>• Construction activities may pose the potential for accidental release/leakages of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. All chemical storage containers, including diesel fuel and hazardous liquid waste drums/containers will be placed in secondary containment in temporary storage area so as to minimize the risk of soil, surface water and groundwater contamination during the construction;</li> <li>• Construction activities may pose the potential for accidental release/leakages of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. All chemical storage containers, including diesel fuel and hazardous liquid waste drums/containers will be placed in secondary containment in temporary storage area so as to minimize the risk of soil, surface water and groundwater contamination during the construction;</li> </ul>	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant



			<ul style="list-style-type: none"> <li>For a case of possible breakdown and natural disaster situation, ALOIZ will ensure that that contractor will prepare, implement and monitor an Emergency Preparedness Plan and the employees will be trained on the plan.</li> <li>It will be ensured that the facility is designed and constructed to be resistant to natural disasters.</li> <li>In addition to all these mitigation measurements, it should be noted that treatment of the previously treated wastewater (by Aliağa WWTP itself) will not be treated for a while since the demolishing and reconstruction of the settling tanks. For this reason, some extra mitigation measures should to be taken specifically for this project. These measures are given below with their explanations:</li> <li>The duration of the demolition and reconstruction works of the sedimentation tanks should be determined. While determining this period, it vital that the settling tanks are not demolished before it is necessary and before preparing the necessary wastewater management processes for this period.</li> <li>The volume/amount of wastewater that needs to be managed will be determined by the demolish-reconstruction period. According to this calculated amount, the wastewater management options of storing wastewater in an interim storage, installment of portable/package treatment plants or diversion/transportation of the wastewater to other WWTPs should be evaluated.</li> <li>As a result of the evaluation, one or more of the the wastewater management options given should be selected and the planning, financing and allocating required workforce for its/their implementation should be planned.</li> <li>A WWTP start-up plan (for the Aliağa WWTP) should be prepared to enable the rapid transition to the WWTP after the construction works are completed since all given temporary wastewater management options are demanding in terms of finance and manpower,</li> <li>Finally, demolition-reconstruction works and the implementation of the decided temporary wastewater management option(s) should be initiated.</li> <li>Activities should not affect the availability of water for drinking and hygienic purposes.</li> <li>No polluted substances, solid waste, toxic or hazardous substances will be stored, spilled or disposed of in water bodies for dilution or disposal.</li> <li>The flow of natural waters should not be obstructed or diverted to another direction, which may lead to drying up of river beds or flooding of settlements.</li> </ul>			
Noise Management	<p>Possible health hazards due to extended exposure to high noise and vibration in/around the Project Area.</p> <p>Over exposure to increased noise and vibration levels may disturb routine life of human and animal populations nearby.</p>	Low	<ul style="list-style-type: none"> <li>ALOIZ will ensure that the contractor will prepare and implement a Noise Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) prior to the construction works and the employees will be trained on the Plan.</li> <li>The machinery and equipment to be used during the construction phase (e.g. pile drivers, jackhammers, excavators, generators, compactors, drilling rigs, compressors, pumps) will not be operated at the same point/location but homogeneously distributed in the site if possible;</li> <li>During vehicle and equipment procuring/leasing process for the Project, item with lower noise levels than equivalent ones will be preferred, if feasible;</li> <li>The maintenance of the construction machinery and equipment will be carried out regularly and periodically. Daily maintenance will be carried out in each shift; and the working time of each vehicle will be registered by the operator in order to follow the total working hours for periodic maintenance. Periodic maintenance will be conducted at every 50, 250, 500, 1000, 2000 working hours. Maintenance forms will be filled out regularly;</li> <li>All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic;</li> <li>Noise measurements will be conducted by an authorized environmental laboratory in case of any grievance and mitigation measures will be enhanced in this respect such as use of noise barriers;</li> <li>Construction works will be performed between 07:00 - 19:00 hours. Unless absolutely necessary, no construction activities will be done at night;</li> <li>All construction activities will be carried out in compliance with the noise limits set out in the Regulation on Environmental Noise Control (RENC) and WBG EHS Guidelines and the contractor will take additional mitigation measures in case of a requirement revealed by the monitoring;</li> <li>A grievance redress mechanism will be established to manage noise related grievances as well.</li> <li>The work schedule will be adjusted by communicating with sensitive receptors.</li> </ul>	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Resource Management	Resources used/consumed during works	Low	<ul style="list-style-type: none"> <li>ALOIZ will supervise the construction contractor via construction supervision consultant to select the most appropriate raw materials and resources by evaluating clean production options.</li> </ul>	Negligible	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant



Waste Generation	Inefficient management of resources and increased amount of waste due to not separating waste and/or storing, handling or transferring wastes improperly.  Possibility of increased public health hazard risks, deterioration of surface water,	Low	<ul style="list-style-type: none"> <li>□ ALOIZ will ensure that the Contractor will continue to comply with the Waste Management Plan that was prepared in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) before the commencement of the works. The Contractor will ensure all the employees are trained on the Waste Management Plan and renew the training if necessary;</li> <li>□ Waste to be generated within the scope of the Project will be managed in accordance with the waste management hierarchy;</li> </ul>	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
	underground water and air quality, and/or soil contamination due to improper storage, handling and transfer of hazardous wastes,  Possibility of air and/or soil pollution risk due to unauthorized burial and burning of waste on the site.		<ul style="list-style-type: none"> <li>□ Waste will be separated (i.e., hazardous / non-hazardous, recyclable / non-recyclable) and stored in designated temporary storage areas;</li> <li>□ All kinds of implementations that may threaten personnel or public health will be avoided in all activities involving collection, temporary storage, transport and disposal of waste throughout the Project;</li> <li>□ Waste recycling, transport and disposal will be carried out by means of licensed companies and/or relevant municipality's vehicles;</li> <li>□ Incineration or burying of waste by any means at site and/or dumping of waste to nearby roads or water resources will not be allowed;</li> <li>□ Waste to be temporarily stored on site will be delivered to licensed transport vehicles appropriate to the type of waste for disposal. Information related to the operations in this context will be recorded and the records will be kept in the administrative building;</li> <li>□ Excavated materials, construction and/or demolition debris will not be used for backfilling. In addition to that removal of the excavated materials, construction and/or demolition debris from the site will be performed at regular intervals without waiting. These materials will be transferred to the nearest licensed landfill facility by licensed transportation companies;</li> <li>□ Waste oils originating from machinery and vehicles will be stored in impervious tanks and containers that would be situated on impervious foundation in accordance with the "Regulation on Control of Waste Oils". Tanks and containers will be equipped with apparatus that would prevent over filling and will be filled till the designated level mark. Tanks and containers will have a red color and will be labeled as "waste oil". Disposal of waste oils will be controlled by the ALOIZ;</li> <li>□ Waste batteries from construction site and accumulators from vehicles will be disposed of in compliance with the consumer responsibilities specified in Article 13 of the "Regulation on Control of Waste Batteries and Accumulators". Accordingly, used batteries will be collected separately (from municipal wastes) and transferred to the TAP battery collection center;</li> <li>□ All other hazardous materials will be disposed of in accordance with the Waste Management Regulation;</li> <li>□ Hazardous waste to be temporarily stored on site will be delivered to licensed transport vehicles appropriate to the type of waste for disposal. Information related to the operations in this context will be recorded and the records will be kept in the administrative building;</li> <li>□ Hazardous or non-hazardous inscription, waste code, stored waste amount and storage date will be indicated/labelled on waste temporarily stored by classifying according to their properties. The reaction of waste with each other will be prevented by the measures taken in the Temporary Storage Area. The OIZ already has a Temporary Storage area with impermeable ground, proper drainage for accidental leaks/spills, top cover, and designated rooms for different types of waste, etc. However, if there is a need to establish a new temporary storage area for any reason, the necessary permit will be taken from the Provincial Directorate of Environment, Urbanization and Climate Change.</li> <li>□ After construction is completed, all debris and waste will be cleared.</li> <li>□ Spill kits will be available at the Temporary Storage Area and necessary precautions will be taken against possible fires such as provision of appropriate firefighting equipment.</li> <li>□ If asbestos or asbestos-containing materials (ACM) are found on a construction site, they will be clearly marked as hazardous waste and disposed of accordingly.</li> </ul>			
<b>Biological Environment</b>						
Terrestrial Habitats and Flora Species	Damage or loss of habitat and flora species	Low	<ul style="list-style-type: none"> <li>□</li> <li>□ The construction area will be clearly defined where construction activities will occur. Access roads and associated facilities working areas will be clearly defined before the onset of construction activities so as not to harm flora elements outside the construction sites.</li> </ul>	Negligible	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Terrestrial Species Fauna	Disturbing/harming populations	Low	<ul style="list-style-type: none"> <li>□ Construction works will occur gradually, especially during breeding (April-May-June), so fauna elements can leave construction sites.</li> <li>□ Before construction works, fauna observations will be made in the area, species will be expected to escape, and species that cannot escape will be translocated to similar habitats around the Project Area.</li> <li>□ The speed of the vehicles on site will be limited, and the use of construction vehicles at night will be avoided to minimize the risk of traffic collisions with fauna.</li> <li>□ The construction sites will be fenced to prevent the entry of fauna species.</li> </ul>	Negligible	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant



Aquatic Biodiversity	Damage or loss of habitat	Low	<input type="checkbox"/> Excavation materials and any kind of waste will not be dumped onto a riverbed. The <input type="checkbox"/> riparian vegetation will be preserved.	Negligible	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Pesticide Use and Management	Possibility of previous pesticides use in the project area	Negligible	<input type="checkbox"/> Conducting and evaluating pesticide measurements in the project area within the scope of pesticide management measures. <input type="checkbox"/> Actions to be taken in case pesticides are unexpectedly detected at levels that threaten human health are: <ul style="list-style-type: none"> <li>• Halt operations in the project area,</li> <li>• Isolate contaminated areas</li> </ul>	Negligible	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
			<input type="checkbox"/> Notify authorities (Provincial Directorate of the MoEUCC) <input type="checkbox"/> Conduct Health Monitoring			
<b>Socio-economic Environment</b>						
Stakeholder Engagement	Insufficient stakeholder engagement activities and public consultation.	Low	<input type="checkbox"/> Adequate timing will be planned for interaction/communication with communities and for engagement. <input type="checkbox"/> Regular consultations will be carried out with the authorities and communities regarding the project management and current progress of the project <input type="checkbox"/> Information about current progress of the Project <input type="checkbox"/> Implementation of project-specific Grievance Mechanism (GM) <input type="checkbox"/> Grievance mechanisms and tools other than project-specific GM implementations.	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Cultural Heritage	Loss of cultural heritage	Low	<input type="checkbox"/> Any cultural asset found during the construction works will be indicated and recorded as “chance finds”. A “Chance Find Procedure” has been prepared for the steps to be followed and implemented after the chance finding. Annex 7 shows Chance Find Procedure. <input type="checkbox"/> The Cultural and Natural Assets Conservation Boards will be informed about the chance finds and the approval of the Conservation Board, which is responsible for the area where the construction site is located, will be required. No demolition/construction work will be carried out when awaiting the said approval.	Low	Included in construction cost	Contractor ALOIZ Construction Consultant Supervision
Grievance mechanism	Unoperational or insufficient mechanism	Low	<input type="checkbox"/> An efficient Grievance mechanism will be initiated to allow potentially affected individuals to voice their concerns on the Project. <input type="checkbox"/> GM will also serve as a mechanism, beside submitting grievances, that is a tool to raise opinions, ask questions, and information requests etc	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Employment / Economy	Contribution to economy	Low	<input type="checkbox"/> Care will be taken to contribute to the local economy through the use of local materials and to procure various goods and services from local resources. <input type="checkbox"/> Priority should be given to the local labour where possible and practical. <input type="checkbox"/> Efforts will be exercised to allocate employment opportunities to the local parties and the settlements within the Aol.	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Social Life	Potential Community Disturbance	Low	<input type="checkbox"/> The OIZ will ensure that contractors establish the code of conduct and will check that workers will be given training, especially on communication with local people of foreign nationality public before starting work, so that local people of foreign nationality will not be adversely affected by external workers. <input type="checkbox"/> The operations to be carried out during construction works will be performed not to restrict/hinder the social and economic life of local people. To avoid any impact on the safety and daily life of communities, safety and information signs will be placed on site before the work.	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Community Health and Safety	Access from outside and accidents that may occur due to lack of security in the project area	Low	<input type="checkbox"/> The perimeter of the construction areas will be blocked with a wire fence and warning signs will be hung.	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Labour and Working Conditions	Improper Working Conditions, Child labour, forced labour and unregistered employment	High	<input type="checkbox"/> Implementing LMP, <input type="checkbox"/> Workers will be informed about the Grievance mechanism and will be required to be aware of this Mechanism. <input type="checkbox"/> All workers will be given training on discrimination and codes of conduct. The training given to the employees will be explanatory about the concepts of sexual harassment and abuse, gender-based violence, abuse, and intervention with harassment. <input type="checkbox"/> Minimum legal labour standards will be met (child/forced labour, anti-discrimination, working hours, minimum wages) as per International Labor Organization (ILO) regulations. <input type="checkbox"/> At the same time, national laws/ regulations and international conventions/ standards will be complied with in terms of the working conditions. Discrimination based on language, race, gender, political thought, philosophical belief and religion will be avoided in business relations.	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant



Labour and Working Conditions	Work suspension due to legal noncompliance in Human Resources and Workforce Management and LMP	Medium	<ul style="list-style-type: none"> <li>□ Concluding written contracts with workers upon recruitment, including terms and conditions of employment, wages, working hours, and rights in accordance with national legislation</li> <li>□ Keeping personnel data files including contracts, training records, signed codes of conduct, health reports</li> </ul>	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
Occupational Health and Safety (OHS)	<p>Inadequate workers' health and safety conditions</p> <p>Risk of occupational health and safety hazards to the workers</p> <p>Work-related accidents (near misses, personnel injuries and occupational illnesses, fatalities)</p> <p>Noncompliance with all applicable occupational health and safety regulations and other</p>	High	<ul style="list-style-type: none"> <li>□ The PMU will include an OHS expert with a Class A specialization certificate who will take part full-time and effectively control the implementation of the Project. She/he shall monitor the site implementations.</li> <li>□ The consultant and the OIZ will make sure that the measures provided below are taken by the contractor and enforce necessary actions/sanctions in case of lack of these measures on-site. In accordance with the Occupational Health and Safety Regulation in Construction Works, the required person, information, plan, and organization will be provided.</li> <li>□ An Emergency Response Plan will be prepared and shared with all employees.</li> <li>□ Technical and OHS training, including the code of conduct indicating the possible risks regarding the work site and works to be carried will be given to workers by the contractor. Implementing OHS Plan, Emergency Preparedness and Response Plan, Accident/incident Investigation and Reporting and Root Cause Analysis Procedure, and Non-Conformity / Non-Compliance and Corrective / Preventive Action Procedure.</li> </ul>	Low	Included in construction cost	Contractor ALOIZ Construction Supervision Consultant
			<ul style="list-style-type: none"> <li>□ The contractor will have a full-time Occupational Health and Safety Expert with relevant certification and experience in charge of occupational health and safety and s/he will control and monitor the site implementations.</li> <li>□ Conducting occupational safety meetings/toolbox talks with workers before starting work every day.</li> <li>□ Legal periodic inspection of work equipment at the construction site by an authorized expert.</li> <li>□ Daily control of work equipment by its operators.</li> <li>□ Inform all workers about the required safety rules, risks, and related regulations to be followed at the construction site throughout the construction period.</li> <li>□ Establish emergency teams and carry out training/drills according to the emergency scenarios</li> <li>□ Record all accidents and incidents (fatalities, lost time incidents, any significant events including spills, fire, pandemic outbreak or infectious diseases, social unrest, etc.) as well as near misses. The project owner will ensure that all OHS measures are taken by the Contractor and enforce necessary actions/sanctions in case of lack of these measures on sites.</li> <li>□ The Contractor will promptly notify the OIZ in case of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public and workers such as OHS accidents or that result in threatening community health and safety and the OIZ will immediately (not later than 48 hours) inform MoIT, and MoIT will inform the World Bank. In such cases, the OIZ will provide sufficient details regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervising entity/consultant, as appropriate. The OIZ will submit the incident report, including root cause analysis, precautions and compensation measures taken, to MoIT within 30 business days. MoIT will forward the incident report to the Bank immediately upon receipt from the OIZ.</li> </ul>			

### 8.3 Mitigation Plan for the Operation Phase

Table 8.3 Mitigation Measures for the Operation Phase

Issue	Potential Impact	Impact Significance Before Mitigation	Mitigation Measure	Impact Significance After Mitigation	Cost of Mitigation (if substantial)	Responsible Party/Parties
<b>Physical Environment</b>						
Air Quality: Odorous Emissions          Gas	Odor problems around WWTP.	Medium	<ul style="list-style-type: none"> <li>ALOIZ will prepare and implement an Odor Management Plan that is in line with the WB ESS1 and WBG General EHS Guidelines (both general and sector specific) and the employees will be trained on the plan.</li> <li>The first level measures for odor problem are as follows: <ul style="list-style-type: none"> <li>Prevention of wastewater influents which exceed treatment plant capacity;</li> <li>Reduction of solid waste and activated sludge amounts;</li> <li>Increasing disposal frequency of screenings;</li> <li>Proper and timely disposal of sludge in order to prevent flies and odor;</li> <li>Increasing aeration rate in biological treatment process;</li> <li>Addition of lime to activated sludge;</li> <li>Keeping water level under control in order to prevent turbulence as a result of instant decrease of water,</li> <li>Increasing ventilation rate in solar drying unit.</li> </ul> </li> <li>If odor nuisance prevails after the proper implementation of first level measures, the second level measures shall be taken. These are: <ul style="list-style-type: none"> <li>Addition of oxidizing material (such as hydrogen peroxide, sodium hypochlorite) (oxidizing materials, prevent the generation of especially hydrogen sulfide). Addition of sodium hydroxide can also be considered. Sodium hydroxide will dissolve hydrogen sulphur gas in water.</li> <li>Preventing anaerobic bacteria with control of pH levels or disinfection.</li> <li>Oxidizing odorous compounds by the help of chemicals.</li> <li>Planting trees in the project area and the buffer zone around the treatment plant for the prevention of odor distribution.</li> </ul> </li> <li>If nuisance still prevails after implementation of first and second measures, the final measure shall be determined as: <ul style="list-style-type: none"> <li>Enclosing the Preliminary Treatment Units</li> </ul> </li> <li>As a general measure: an operating grievance redress mechanism will be established to manage odor related grievances.</li> </ul>	Low	Included in operation cost	ALOIZ
Air Quality: Exhaust Emissions Dust generation	Reducing air quality surrounding the Project Area, Possible health hazards due to extended exposure to high emissions in the Project Area. Increase in SO <sub>2</sub> , TOC, NO <sub>x</sub> , CO, and dust emissions Increase in GHG emissions	Low	<ul style="list-style-type: none"> <li>Well and adequately maintained vehicles will be used. Regular maintenance of machinery and equipment will be ensured;</li> <li>Exhaust systems of the vehicles will be controlled regularly(daily and periodically);</li> <li>All vehicles to be used in transportation activities will be issued an emission control stamp;</li> <li>Operation phase vehicles will not be permitted to keep engines running while waiting or standing by for duty.</li> <li>Relevant provisions of the Regulation on Air Pollution Control Sourced from Industry, the Regulation on Exhaust Gas Emission Control and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from machinery, equipment, and vehicles that are used in operation phase;</li> <li>Speed restrictions will be adopted by operation phase vehicles and optimal use of operation phase equipment to optimize fuel efficiency;</li> <li>Regular maintenance of operation phase vehicles and equipment will be applied;</li> <li>Energy uses associated with operation phase vehicles and equipment will be monitored;</li> <li>Regular maintenance of WWTP machinery, and equipment will be applied;</li> <li>Energy uses associated with WWTP units and utility facilities will be monitored; □ Training will be performed for project personnel regarding energy efficiency.</li> <li>Dust in exposed work areas will be minimized by regularly applying water to the ground during the dry season.</li> <li>The aggregate material stockpile will be covered on windy days to prevent fine soil particles from being suspended or scattered or stray animals from being disturbed</li> </ul>	Low	Included in operation cost	ALOIZ



Soil Environment: Soil Contamination	Contamination of soil, Possibility of contamination of underground waters close to the surface, Scatter/dispersion of contaminated soil due to improper handling, transferring and disposal of the contaminated soil,	Low	<ul style="list-style-type: none"> <li>The staff will be trained in proper management of liquid waste to avoid soil contamination during maintenance and repair works;</li> <li>The amount of soil that could be subject to contamination will be minimized by ensuring the use of only the designated worksites and routes for the machinery and equipment and field personnel during maintenance and repair works;</li> <li>Machinery and equipment will be checked regularly for leaking oil and fuel;</li> <li>In the event of an accident, leak or spill, necessary repair works and/or replacement of parts will be performed promptly in accordance with the standards;</li> <li>Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources will be complied with; and</li> <li>After dewatering, the sludge cake will be transferred to the solar drying unit for further removal of its water content. After this process, remaining sludge will be transferred to a covered and appropriate container. After that, the excess sludge will be sent to licensed facility with the licensed vehicles (after determining its waste class status by an accredited laboratory). The sludge dried in the licensed facility will be sent to cement factories as fuel.</li> </ul>	Negligible	Included in operation cost	ALOIZ
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	Improper reuse of contaminated soil as landscaping,					
Soil Environment Soil erosion	Erosion of soil Loss of topsoil vegetation	Low	<input type="checkbox"/> After construction is completed, construction areas will be quickly covered with topsoil and revegetated. Mulch, sod or compacted soil will be used to stabilize exposed areas.	Negligible	Included in operation cost	ALOIZ
Water Resources: Quality Change Water Bodies  in	Improving water quality of Kunduz Creek.	Positive	<input type="checkbox"/> The effluent water quality of the WWTP will be consistent with the limit values stipulated in the Regulation on Water Pollution Control Table-19, at minimum; <input type="checkbox"/> If the water lines will be periodically flushed to remove accumulated sediments or other impurities that have accumulated in the pipe, the water will be flushed into the existing wastewater collection system of the Aliğa OIZ. <input type="checkbox"/> Activities should not affect the availability of water for drinking and hygienic purposes. <input type="checkbox"/> No polluted substances, solid waste, toxic or hazardous substances will be stored, spilled or disposed of in water bodies for dilution or disposal. <input type="checkbox"/> The flow of natural waters should not be obstructed or diverted to another direction, which may lead to drying up of river beds or flooding of settlements.	Positive	Included in operation cost	ALOIZ
Noise Control	Increase in background noise.	Low	<input type="checkbox"/> During the procurement of equipment and machinery, sound levels given in the technical specifications/data sheet will be taken into consideration; <input type="checkbox"/> Relevant provisions and limit values of Regulation on the Environmental Noise Emissions Caused by Equipment Used Outdoors and Regulation on Environmental Noise Control (RENC) and WBG General EHS Guidelines and Sectorial Guidelines will be complied with during the operation phase; <input type="checkbox"/> If necessary noise-control methods such as fences, barriers or deflectors will be used Equipment generating noise during the operation of the plant will be located in isolated closed buildings and some of them will be submerged in wastewater, if necessary. A grievance redress mechanism will be established to manage noise related grievances as well. The work schedule will be adjusted by communicating with sensitive receptors.	Low	Included in operation cost	ALOIZ
Resource Management	Resources used/consumed during works	Low	<input type="checkbox"/> Starting from the operation phase, ALOIZ will seek assistance from technical consultants to reduce energy consumption and related costs through optimization of the following: <ul style="list-style-type: none"> <li>Energy conservation, o Process efficiency,</li> <li>Aeration devices and oxygen transfer, o Process flow configuration, o Biogas quantities, o Biogas utilization, o</li> <li>Time of day consumption of energy.</li> </ul>	Negligible	Included in operation cost	ALOIZ



Waste Wastewater and Management: Waste Generation	Inefficient management of resources and increased amount of waste due to not separating waste and/or storing, handling or transferring wastes improperly. Possibility of increased public health hazard risks, deterioration of surface water, underground water and air quality, and/or soil contamination due to improper storage, handling and transfer of hazardous wastes, Possibility of air and/or soil pollution risk due to unauthorized	Low	<ul style="list-style-type: none"> <li>❑ Waste Management Plan will be updated by ALOIZ to reflect the operation phase conditions before commencement of the operation phase. Relevant measures defined for the construction phase also apply also to the operation phase. The updated plan will provide procedures for the management of waste other than sludge;</li> <li>❑ Waste to be generated within the scope of the Project will be managed in accordance with the waste management hierarchy;</li> <li>❑ Waste recycling, transport and disposal will be carried out by means of licensed companies and/or Aliğa Municipality; Domestic waste will be collected by Aliğa Municipality and transferred to Izmir Metropolitan Municipality Harmandalı Storage Facility. Other wastes generated will be given to licensed organizations within the framework of the legislation.</li> <li>❑ Incineration or burying of waste by any means on site and/or dumping of waste to nearby roads or water resources will absolutely not be in question;</li> <li>❑ All kinds of implementations that may threaten personnel or public health will be avoided in all activities involving collection, temporary storage, transport and disposal of waste throughout the Project;</li> <li>❑ . Information related to waste that temporarily stored on site and sent to disposal will be recorded and the records will be kept in the administrative building;</li> <li>❑ Waste will be separated (i.e., hazardous / non-hazardous, recyclable / non-recyclable) and stored in designated temporary storage areas;</li> <li>❑ Temporary storage of waste will be labelled with an indication of hazardous or non-hazardous inscription, waste code, stored waste amount and storage date and classification according to their properties. The reaction of wastes with each other will be prevented by the measures taken in the Temporary Storage Area; and Hazardous wastes will be stored in designated impermeable waste storage areas.</li> <li>❑ Impermeability will be provided on the floors of the Temporary Storage Area and a suitable drainage system will be installed. Spill kits will be available at the Temporary Storage Area and necessary precautions will be taken against possible fires such as provision of appropriate firefighting equipment.</li> <li>❑ On-site storage of waste before final disposal will be at least 300 meters away from rivers, streams, lakes and wetlands.</li> </ul> <p>Workers will be trained in the proper transfer and handling of fuels and other materials, and if handling of highly hazardous materials becomes necessary, the use of gloves, boots, aprons, goggles and other protective equipment will be mandatory for protection.</p>	Low	Included in operation cost	ALOIZ
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	burial and burning of waste on the site.		<ul style="list-style-type: none"> <li>• If ACM is to be stored temporarily, it should be securely placed inside closed containers and clearly labeled.</li> <li>• Asbestos-containing waste will be transported and disposed of in accordance with Regulation on the Road Transportation of Hazardous Goods by signing a contract with a waste transport company licensed by the Ministry of Environment, Urbanization and Climate Change and an authorized waste disposal organization.</li> <li>• Prior to removal, if removal is necessary, ACM should be treated with a wetting agent to minimize asbestos dust.</li> <li>• The asbestos should be appropriately contained and sealed to minimize exposure.</li> </ul>			
Waste and Wastewater Management: Wastewater Generation	Wastewater generation in the WWTP, Deterioration of quality in nearby water bodies due to wastes carried by waste dispersion or improper solid waste storage, handling and transfer.	Low	<ul style="list-style-type: none"> <li>❑ ALOIZ will prepare and implement monitor a Water Resources and Effluent Management Plan that is in line with WB ESS1 and WBG EHS Guidelines (both general and sector specific) should be prepared and the employees will be trained on the plan, prior to the operation phase to ensure that:</li> <li>❑ The effluent water quality of the WWTP will be consistent with Water Pollution Control Regulation and Urban Wastewater Treatment Regulation requirements or internationally accepted standards;</li> <li>❑ System overflows will be prevented as much as possible by using level-meters;</li> <li>❑ Since the water system leaks and loss of pressure is rather significant for the operation phase of WWTP, ○ Regular inspection and maintenance should be conducted; <ul style="list-style-type: none"> <li>○ A leak detection and repair program should be implemented (including records of past leaks and unaccounted-for water to identify potential problem areas);</li> <li>○ Mains having a greater potential for leaks because of their location, pressure stresses, and other risk factors should be replaced.</li> </ul> </li> <li>❑ Machinery and equipment will be checked regularly for leaking oil and fuel; to prevent contamination of near surface water and groundwater resources during operation and maintenance activities.</li> </ul> <p>Establish safe delivery/storage/handling procedures in accordance with material safety data sheets (MSDSs), Immediately contain and cleanup any spilled material.</p>	Low	Included in operation cost	ALOIZ



Waste Management: Sludge Generation	Generation of sludge at the end of the water treatment process.	Medium	<input type="checkbox"/> ALOIZ will prepare and implement a Sludge Management Plan in line with WB ESS1 and WBG General EHS Guidelines (both general and sector specific) and the employees will be trained on the plan; <input type="checkbox"/> The Sludge Management Plan will determine more sustainable alternatives than landfilling. If there is no option other than final disposal, the procedure to be followed for disposal should be defined within the scope of the management plan; <input type="checkbox"/> Final sludge will be stored in special containers designated for this purpose only; <input type="checkbox"/> Dried sludge will be sent to nearest appropriate licensed company (after determining its waste class status by an accredited laboratory) with licensed trucks.	Low	Included in operation cost	ALOIZ
<b>Socio-economic Environment</b>						
Grievance mechanism	Operational GM	Low	<input type="checkbox"/> The sustainability of the GM will be ensured by the OIZ management Communication channels will be open <input type="checkbox"/>	Low	Included in operation cost	ALOIZ
Stakeholder Engagement	Insufficient stakeholder engagement	Low	<input type="checkbox"/> Interaction/communication will be established with communities, and adequate timing will be planned for engagement activities. Additionally, regular consultations will be carried out with the authorities and communities regarding the project management.	Low	Included in operation cost	ALOIZ
Community Health and Safety	Community health and safety risks	Low	<input type="checkbox"/> The public, nearby institutions and organizations, and hospitals and schools will be informed at least two days before starting repair/maintenance works that may cause disturbance. <input type="checkbox"/> The grievance mechanism officer will be introduced to the local people and updated information about the grievance mechanism will continue to be provided. In case of an update in the documents, the updated information will be announced to the local people through the relevant headman's office.	Low	Included in operation cost	ALOIZ
Labour and Working Conditions	Improper Working Conditions Child Labor, forced Labor and unregistered employment	Low	<input type="checkbox"/> Workers will be familiar with the grievance mechanism officer and will be enabled to have access to and be aware of the Grievance mechanism. <input type="checkbox"/> Minimum legal labour standards will be met (child/forced labour, anti-discrimination, working hours, minimum wages) as per ILO regulations. <input type="checkbox"/> At the same time, national laws/ regulations and international conventions/ standards will be complied with in terms of the working conditions. <input type="checkbox"/> Concluding written contracts with workers upon recruitment, including job description ,working hours, wages ,terms and conditions of employment and rights in accordance with national legislation and Code of Conduct.	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS)	Inadequate workers' health and safety conditions	Medium	<input type="checkbox"/> Upon completion of the WWTP, ALOIZ will prepare a new Emergency Preparedness and Response (EPR) Plan for a possible accident and emergency and emergency teams will be established, and drills and trainings will be carried out in line with the emergency scenarios, <input type="checkbox"/> Before starting work, employees will be knowledgeable about job descriptions, responsibilities, relationships with the local people, and risks that may threaten occupational health and safety. <input type="checkbox"/> Workers will be provided with appropriate induction, health and safety training and information. <input type="checkbox"/> All equipment used during the operation phase will be kept in good working condition. <input type="checkbox"/> Emergency Plans" will be prepared for a potential accident or emergency. Emergency teams will be formed, and	Low	Included in operation cost	ALOIZ

			drills and training programs will be carried out in line with emergency scenarios. <input type="checkbox"/> Employees will have a good command of emergency plans, and the grievance will be reported to the authorized teams and resolved if they require urgent action. <input type="checkbox"/> In case of any potential accident involving injury during the operation phase, the equipment for first aid will be kept available at the rehabilitation centre, taking into account that first aid response may be required before the casualty is referred to the nearest healthcare provider. <input type="checkbox"/> The OIZ formally agrees that all work will be carried out in a safe and disciplined manner and is designed to minimize risks to neighboring residents and the environment. <input type="checkbox"/> All activities will be implemented in line with both the Law on Occupational Health and Safety and its relevant regulations, and also the WBG's EHS Guidelines. <input type="checkbox"/> Both training and incidents (fatalities, lost time incidents, outbreak of pandemic or communicable diseases, social unrest, etc.) will be recorded. <input type="checkbox"/> In the event of any significant incident (e.g. environmental, social, labour or lost-time incidents) the OIZ shall inform the MoIT and WB within 48 hours. Then, within 30 days, a report on the root causes of the incident and the corrective actions to be taken will be presented to the MoIT and WB.			
Occupational Health and Safety (OHS): Working at Height	Falling from height	Medium	<input type="checkbox"/> Fall protection equipment will be used when working at height, <input type="checkbox"/> Necessary precautions will be implemented at the working areas at height by covering ground-mounted safety railing and compliant handrail systems, lifelines, working/maintaining platforms. Work areas will be maintained to minimize slipping and tripping hazards <input type="checkbox"/>	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Working with Chemicals	Exposure to toxic, corrosive, sensitizing or oxidative substances.	Medium	<input type="checkbox"/> ALOIZ will install safety showers and eye wash stations near the chlorine and ammonia equipment and other areas where hazardous chemicals are stored or used; and also provide areas for all workers to shower and change clothes before leaving works, <input type="checkbox"/> ALOIZ will conduct training for operators who work with chemicals regarding safe handling practices and emergency response procedures, <input type="checkbox"/> Escape plans from areas where there might be a chlorine or ammonia emission will be prepared, Adequate ventilation systems will be installed in all areas where chemicals are stored or used to ensure that air quality standards are maintained, and the risk of exposure is minimized. <input type="checkbox"/> The chemicals will be stored indoors by taking sealing precautions and only experienced personnel will handle chemicals, while employees will have minimal contact with them in terms of quantity and duration. Replacement of the hazardous substance with a less hazardous substitute	Low	Included in operation cost	ALOIZ



Occupational Health and Safety (OHS): Fire and Explosion	Risk of fires and or explosions	Medium	<input type="checkbox"/> Fire and explosion prevention measures will be implemented, <input type="checkbox"/> Appropriate ventilation systems will be installed to avoid accumulation of excess gas in enclosed processing areas for protecting employee health and preventing explosion risk	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Noise	Risk of exposed to high level noise, deafness, temporary deafness	Medium	<input type="checkbox"/> Periodic medical hearing checks should be performed on workers exposed to high noise levels	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Vibration	Risk of exposure to hand-arm, body vibration	Medium	<input type="checkbox"/> Vibration exposure levels should be controlled based on daily exposure time and data provided by equipment manufacturers, <input type="checkbox"/> Exposure to hand-arm vibration from equipment such as hand and power tools, or whole-body vibrations from surfaces on which the worker stands or sits, should be controlled through choice of equipment, installation of vibration dampening pads or devices, and limiting the duration of exposure	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Rotating and Moving Equipment	Risk of injury or death from being trapped, entangled, or struck by machinery parts	Medium	<input type="checkbox"/> Ensuring moving equipment with restricted rear visibility is outfitted with audible back-up alarms, <input type="checkbox"/> Moving areas where the discharge of solid fragments, liquid, or gaseous emissions can reasonably be predicted away from places expected to be occupied or transited by workers or visitors. Where machine or work fragments could present a hazard to transient workers or passers-by, extra area guarding or proximity restricting systems should be implemented, or PPE required for transients and visitors, <input type="checkbox"/> Designing and installing equipment, where feasible, to enable routine service, such as lubrication, without removal of the guarding devices or mechanisms,	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Electrical	Risk of electric shock	Medium	<input type="checkbox"/> Conducting detailed identification and marking of all buried electrical wiring prior to any excavation work, <input type="checkbox"/> Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas, <input type="checkbox"/> Checking all electrical cords, cables, and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools, Locking out (de-charging and leaving open with a controlled locking device) and tagging-out (warning sign placed on the lock) devices during service or maintenance, Marking all electrical devices and lines with warning signs, <input type="checkbox"/> After the plant is completed, necessary electrical tests will be carried out to check that the electrical connections and other related equipment are made properly before the plant is taken into operation	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Eye Hazards	Eye hazards	Medium	<input type="checkbox"/> Provision of proper eye protection such as welder goggles and/or a full-face eye shield for all personnel involved in, or assisting, welding operations. Devices to extract and remove noxious fumes at the source may also be required.	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Welding/Hot Work	Risk of injury worker's eyesight or blindness	Medium	<input type="checkbox"/> Provision of proper eye protection such as welder goggles and/or a full-face eye shield for all personnel involved in, or assisting, welding operations. Devices to extract and remove noxious fumes at the source may also be required.	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Construction Vehicle Driving and Site Traffic	Risk of occupational health and safety hazards to the workers	Medium	<input type="checkbox"/> Reduction of allowed vehicle speeds in work zones, <input type="checkbox"/> Training and licensing industrial vehicle operators in the safe operation of specialized vehicles such as forklifts, including safe loading/unloading, load limits	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Working Environment and Temperature	Exposure to hot or cold working conditions in indoor or outdoor	Medium	<input type="checkbox"/> ALOIZ will ensure the compliance of all the activities within the treatment plant with national standards and WBG General EHS Guidelines. <input type="checkbox"/>	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Ergonomics, Repetitive Motion, Manual Handling	Risk of Injuries due to ergonomic factors	Medium	<input type="checkbox"/> Implementing quality control and maintenance programs that reduce unnecessary forces and exertions, <input type="checkbox"/> Selecting and designing tools that reduce force requirements and holding times, and improve postures, <input type="checkbox"/> Taking into consideration additional special conditions such as left handed persons	Low	Included in operation cost	ALOIZ



Occupational Health and Safety (OHS): Illumination	Work-related accidents (near misses, personnel injuries and fatalities)	Medium	<input type="checkbox"/> For night work, provision of proper illumination for the work space, while controlling glare so as not to blind workers and passing motorists, <input type="checkbox"/> Undertaking measures to eliminate glare / reflections and flickering of lights, <input type="checkbox"/> Use of energy efficient light sources with minimum heat emission	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Air Quality / Odor	Inadequate workers' health and safety conditions	Medium	<input type="checkbox"/> Implement odor control: liquid phase and vapor phase. <input type="checkbox"/> ALOIZ will advise individuals with asthma, diabetes, or suppressed immune systems not to work at the treatment plant due to risk of infection, <input type="checkbox"/> Air quality in work areas will be monitored continuously and also periodically for hazardous conditions, <input type="checkbox"/> Maintaining levels of contaminant dusts, vapors and gases in the work environment at concentrations	Low	Included in operation cost	ALOIZ
Occupational Health and Safety (OHS): Personal Protective Equipment (PPE)	Inadequate workers' health and safety conditions	Medium	<input type="checkbox"/> ALOIZ will install safety showers and eye wash stations near the chlorine and ammonia equipment and other areas where hazardous chemicals are stored or used; and also provide areas for all workers to shower and change clothes before leaving works, <input type="checkbox"/> ALOIZ will distribute sufficient number of appropriate personal protective equipment (including, for example, self-contained breathing apparatus, personal gas detection equipment regarding chemical exposure and hazardous atmospheres, rubber gloves and waterproof shoes for field workers) and training on proper use and maintenance, <input type="checkbox"/> Personal flotation device will be used when working near waterways, <input type="checkbox"/> Proper maintenance of PPE, including cleaning when dirty and replacement when damaged or worn out. Proper use of PPE should be part of the recurrent training programs for employees, <input type="checkbox"/> Active use of PPE if alternative technologies, work plans or procedures cannot eliminate, or sufficiently reduce, a hazard or exposure, <input type="checkbox"/> Provision of proper eye protection such as welder goggles and/or a full-face eye shield for all personnel involved in, or assisting, welding operations. Devices to extract and remove noxious fumes at the source may also be required. Equipment that meets international standards in terms of performance and safety will be used in the Project	Low	Included in operation cost	ALOIZ

## 9 ENVIRONMENTAL AND SOCIAL MONITORING PLAN

In order to ensure the continuity, compliance with and effectiveness of the implementation of mitigation management measures defined, monitoring plays a key role. The main objective of the Monitoring Plan is to assess the implementation of the prescribed mitigation measures and requirements of this ESMP.

Information collected with the monitoring can be used to improve management plans during all phases of the Project. While impact assessment attempts to encompass all relevant potential impacts to identify their significance and include appropriate responses for these impacts, unanticipated impacts may still arise, which can be managed or mitigated before they become a problem using the information obtained through monitoring. Therefore, monitoring will facilitate the successful implementation of the mitigation/management plans and optimize environmental protection through good practice at each and every stage of the Project.

Consequently, monitoring studies will provide data on impact mitigation measures and enable optimization of environmental protection by using best practices at all stages of the Project.

Some of the monitoring parameters are determined in the scope of engineering design studies. Monitoring will verify project compliance with the relevant legislation, contract necessities and implementation of impact mitigation measures.

Monitoring activities are submitted in tabular form in Table 9.1, Table 9.2 and Table 9.3 for pre-construction and construction, and operation phases, respectively.





**Table 9.1 Monitoring Plan for the Pre-Construction Phase**

Issue	Parameters to be monitored (What parameter is to be monitored?)	Target/Threshold Value*	Monitoring location (Where the parameter is to be monitored?)	Monitoring Method (How is the parameter to be monitored/ type of monitoring equipment?)	Timing/Frequency of Monitoring (When is the parameter to be monitored- frequency of measurement or continuous?)	Cost of Monitoring (What is the cost of equipment or contractor charges to perform monitoring?)	Responsible Party/Parties	Supervision observation and comments to be filled out during supervision with reference to adequate measuring reports
Air quality	Settled dust, PM <sub>10</sub> and PM <sub>2.5</sub>	Below the project standards: PM10:  1-Year: 20 µg/m3 24-Hour: 50 µg/m3 (99th percentile (i.e.3-4 exceedance days per year)  PM2.5:  1-Year: 10 µg/m3 24-Hour: 25 µg/m3 (99th percentile (i.e.3-4 exceedance days per year)  No air quality related grievance received	In case of a complaint, in the relevant area	Sampling/analysis via an authorized environmental laboratory  Visually, on the basis of irritation of the respiratory system	One monitoring from the start of the preconstruction phase (land preparation, topsoil stripping)  Upon grievance	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
	Maintenance and exhaust decal records of all machinery and equipment	Below the Project Standards:  CO: 50 kg/h Dust: 1 kg/h NOx: (as NO2) 4 kg/h SOx: 6 kg/h TOC: 3 kg/h	Administration office of Contractor for the follow-up of records	Maintenance records	Monthly during the preconstruction phase	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Storage and usage of topsoil	Amount of stripped and reused topsoil by indicating reuse locations  Storage conditions of topsoil (humidity and pile height)	No loss of topsoil	Construction site and storage areas	Visual observation Records	Once in a week starting from the initialization of pre-construction phase	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Storage and usage of chemicals including fuels	Conditions of the storage area Number of leaks, spills, etc.	No chemical spill incident	Entire Project Area and chemical storage locations	Visual observation Site inspections Environmental incident registry	Once in a week starting from the initialization of pre-construction phase	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Water resources	Surface water / groundwater quality analysis and measurements that include spill-related pollutants including the parameters of pH, BOD, COD, TSS, TDS, TP, TKN, nitrate, nitrite, TN, salinity, etc.	Prevention of water quality deterioration compared to current surface water and groundwater quality  COD: 250 mg/L TSS: 200 mg/L Oil and grease: 20 mg/L Total Phosphorus (P): 2 mg/L Total Chrome: 2 mg/L Chrome (Cr <sup>+6</sup> ): 0.5	At the upstream and downstream of Kunduz Creek  At related water resources (wells, fountains, etc.)	Sampling and in situ / laboratory measurements via an authorized environmental laboratory Spill notices/correspondences to authorities in case of major spills	In case of a major spill In case of a leak/spill reaches water bodies	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	

		mg/L Lead (Pb): 2 mg/L Total Cyanide (CN-): 1 mg/L Cadmium (Cd): 0.1 mg/L Ferrous (Fe): 10 mg/L Fluoride (F-): 15 mg/L Copper (Cu): 3 mg/L Zinc (Zn): 5 mg/L Mercury (Hg): 0.05 mg/L Sulphate (SO <sub>4</sub> <sup>-2</sup> ): 1500 mg/L Total Kjeldahl Nitrogen (TKN): 20 mg/L Fish Bioassay (TDF): 10 Color: 280 Pt-Co pH:6-9						
Noise	Noise levels	Not exceeding the limit values defined in project standards	In case of a complaint, in the relevant area	At least 24-hr noise measurements via an authorized environmental laboratory	Monthly starting from the initialization of preconstruction phase when the all machineries (scheduled to work that month) are operating Upon grievance	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
	Number of complaints	No noise related grievance received	Administration office of Contractor for the follow-up of records	Grievance Registration	Monthly during the preconstruction phase	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Waste	Type and amount of waste generated	Adhering to the TurkStat estimation of 1.13 kg/person/day waste generation  Minimizing the amount of waste to be sent for disposal and implementing waste management hierarchy	Treatment plant site, storage areas	Visual inspection regarding proper collection and temporary storage of waste and records kept regarding their coordinated recycle / disposal via licensed firms Waste Records Site inspections Disposal truck register	Once in a month starting from the initialization of the preconstruction phase	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Resources	Types and amounts of materials/resources used	Use of recycled materials whenever possible Reducing energy consumption	Administration office	Material/resource procurement/consumption records	Quarterly during the pre-construction phase	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Infrastructure Damage	Number and nature of cases and amount of compensation paid	No infrastructure cases	Administration office	Incident records Receipts of compensation payments	Monthly during the preconstruction phase	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Trespassing	Trespassing cases	No trespassing	Administration office	Security reports Visitor logs	Weekly during the preconstruction phase	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
	Condition of CCTV system			System checks	Daily during the preconstruction phase			



Community Health and Safety	Health and safety signs and traffic signs placed in	All cases that cause health and safety problems to	Project Area	Visual observation Site inspection	Daily basis	Included in preconstruction	Contractor,	
	appropriate locations	be prevented			Upon grievance	cost	ALOIZ, Construction Supervision Consultant	
Working Conditions	Workers' grievances	100 percent of satisfactorily resolved grievances within stipulated time	Administration office	Grievance records	Weekly during the preconstruction phase	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Occupational Health and Safety	Number of incidents	No OHS incidents occurred	Construction site	Incident records	Daily basis starting from the initialization of the pre-construction phases	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
	Incident investigation	No OHS incidents occurred		Incident investigation records	Daily basis starting from the initialization of the pre-construction phases			
	Period of disease occurrence	No infectious disease is recorded		Disease follow-up register	Daily basis starting from the initialization of the pre-construction phases			
	Number of personnel who are infected with an infectious disease	No infectious disease occurred		Training records	Monthly during the preconstruction phase			
	Training requirements	Every training defined in the Annual ESHS is completed		Annual Environmental, Social Health, and Safety (ESHS) training plan	Annually during the preconstruction phase			
	Adequate OHS organizational structure.	There will always be an adequate OHS organizational structure on site.		Site implementation Site inspection	Quarterly during the pre-construction phase			
	Total hours worked by employee	Total hours worked should be less than 11 hours/worker/day The total of overtime working hours cannot exceed 270 hours in a year.		Timesheets, Grievance records	Monthly, yearly			
Protecting the Workforce	Age of candidate employee	No case of child labor and forced labor	Administration office and Project Area	Age verification with National ID Grievance records	Before each recruitment Upon relevant grievances	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Workers Engaged by Third Parties and the Supply Chain	Contractor and sub-contractor agreements	No nonconformity is observed with the ESMP	Administration office	Contract reviews by ESHS expert(s)	Before each agreement made	Included in preconstruction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	GBV and SEA/SH related incidents GBV and SEA/SH related grievances GM, GBV, SEA/SH trainings	No GBV and SEA/SH related issues Minimum 1 annual refresher training for SEA/SH and GBV	Administration office and Project Aol	Document review Review of grievance logs Review of training records	Quarterly Upon relevant grievances Yearly	Included in preconstruction cost	Contractor, ALOIZ/PIU, Construction Supervision Consultant	



Grievance Mechanism	Number and nature of Grievance Number of closed grievances Percent of closed grievances Average days taken to close	100 percent of satisfactorily resolved grievances within stipulated time	Project Aol	Data on complaints are collected in a database and reported	Monthly	Included in preconstruction cost	Contractor, ALOIZ Construction Supervision Consultant	
Stakeholder Engagement	Number of meetings Total number of participants by used method	Include all stakeholder	Project Aol	Stakeholder records	Monthly	Included in preconstruction cost	Contractor, ALOIZ Construction Supervision	
							Consultant	

*\*In cases where the Turkish requirements differ from the levels and measures presented in the WBG's EHS Guidelines, the more stringent one (such as the most stringent discharge and emission standards) will be applied in the project specifications.*



**Table 9.2 Monitoring Plan for the Construction Phase**

Issue	Parameters to be monitored (What parameter is to be monitored?)	Target/Threshold Value*	Monitoring location (Where the parameter is to be monitored?)	Monitoring Method (How is the parameter to be monitored/ type of monitoring equipment?)	Timing/Frequency of Monitoring (When is the parameter to be monitored- frequency of measurement or continuous?)	Cost of Monitoring (What is the cost of equipment or contractor charges to perform monitoring?)	Responsible Party/Parties	Supervision observation and comments to be filled out during supervision with reference to adequate measuring reports
Air quality	Settled dust, PM <sub>10</sub> and PM <sub>2.5</sub>	Below the project standards: PM10:  1-Year: 20 µg/m3 24-Hour: 50 µg/m3 (99th percentile (i.e.3-4 exceedance days per year)  PM2.5:  1-Year: 10 µg/m3 24-Hour: 25 µg/m3 (99th percentile (i.e.3-4 exceedance days per year)  No air quality related grievance received	In case of a complaint, in the relevant area	Sampling/analysis via an authorized environmental laboratory  Visually, on the basis of irritation of the respiratory system	Monthly starting from the initialization of construction phase Upon grievance	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
	Maintenance and exhaust decal records of all machinery and equipment	Below the Project Standards:  CO: 50 kg/h Dust: 1 kg/h NOx: (as NO2) 4 kg/h SOx: 6 kg/h TOC: 3 kg/h	Administration office of Contractor for the follow-up of records	Maintenance records	Quarterly during the construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Soil contamination	Amount of contaminated soil	No soil contamination resulting from project activities	Project Area	Visual observation	After each incident	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Storage and usage of chemicals including fuels	Conditions of the storage area Number of leaks, spills, etc.	No chemical spill incident	Entire Project Area and chemical storage locations	Visual observation Site inspections Environmental incident registry	Once in a week starting from the initialization of construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Storage and use of excavation waste	Amount of refilled, stored and disposed excavation materials	Proper management of excavation wastes	Construction site and storage areas	Visual observation Records	Once in a week starting from the initialization of construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	



Water resources	Surface water / groundwater quality analysis and measurements that include spill-related pollutants including the parameters of pH, BOD, COD, TSS, TDS, TP, TKN,	Prevention of water quality deterioration compared to current surface water and	At the upstream and downstream of Kunduz Creek	Sampling and in situ / laboratory measurements via an authorized environmental laboratory Visual observation for wastewater discharge without being treated	In case of a major spill In case of a leak/spill reaches water bodies	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
	nitrate, nitrite, TN, salinity, etc.	groundwater quality COD: 250 mg/L TSS: 200 mg/L Oil and grease: 20 mg/L Total Phosphorus (P): 2 mg/L Total Chrome: 2 mg/L Chrome (Cr <sup>6+</sup> ): 0.5 mg/L Lead (Pb): 2 mg/L Total Cyanide (CN <sup>-</sup> ): 1 mg/L Cadmium (Cd): 0.1 mg/L Ferrous (Fe): 10 mg/L Fluoride (F <sup>-</sup> ): 15 mg/L Copper (Cu): 3 mg/L Zinc (Zn): 5 mg/L Mercury (Hg): 0.05 mg/L Sulphate (SO <sub>4</sub> <sup>-2</sup> ): 1500 mg/L Total Kjeldahl Nitrogen (TKN): 20 mg/L Fish Bioassay (TDF): 10 Color: 280 Pt-Co pH:6-9	At related water resources (wells, fountains, etc.)	Spill notices/correspondences to authorities in case of major spills				
Noise	Noise levels	Not exceeding the limit values defined in Project Standards:  Receptor: Industrial, commercial:  Day time (07:00-19:00): LA <sub>eq, 5 min.</sub> < 65 dB(A) Evening time (19:00-23:00): LA <sub>eq, 5 min.</sub> < 60 dB(A) Night time (23:00-07:00): LA <sub>eq, 5 min.</sub> < 55 dB(A)	In case of a complaint, in the relevant area	At least 24-hr noise measurements via an authorized environmental laboratory	Monthly starting from the initialization of construction phase when the all machineries (scheduled to work that month) are operating Upon grievance	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
	Number of complaints	No noise related grievance received	Administration office of Contractor for the follow-up of records	Grievance Registration	Quarterly during the construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	



Waste	Type and amount of waste generated	Adhering to the TurkStat estimation of 1.13 kg/person/day waste generation  Minimizing the amount of waste to be sent for	Treatment plant site, storage areas	Visual inspection regarding proper collection and temporary storage of waste and records kept regarding their coordinated recycle / disposal via licensed firms Waste Records Site inspections	Once in a month starting from the initialization of the construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
		disposal and implementing waste management hierarchy		Disposal truck register				
Resources	Types and amounts of materials/resources used	Use of recycled materials whenever possible Reducing energy consumption	Administration office	Material/resource procurement/consumption records	Quarterly during the construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Infrastructure Damage	Number and nature of cases and amount of compensation paid	No infrastructure cases	Administration office	Incident records Receipts of compensation payments	Monthly during the construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Trespassing	Trespassing cases	No trespassing	Administration office	Security reports Visitor logs	Weekly during the construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
	Condition of CCTV system			System checks	Daily during the construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Community Health and Safety	Health and safety signs and traffic signs placed in appropriate locations	All cases that cause health and safety problems to be prevented	Project Area	Visual observation Site inspection	Daily basis Upon grievance	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Working Conditions	Workers' grievances	100 percent of satisfactorily resolved grievances within stipulated time	Administration office	Grievance records	Weekly during the construction phase	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
Occupational Health and Safety	Number of incidents	No OHS incidents occurred	Construction site	Incident records	Daily basis starting from the initialization of the construction phases	Included in construction cost	Contractor, ALOIZ, Construction Supervision Consultant	
	Incident investigation	No OHS incidents occurred		Incident investigation records	Daily basis starting from the initialization of the construction phases			
	Period of disease occurrence	No infectious disease is recorded		Disease follow-up register	Daily basis starting from the initialization of the construction phases			
	Number of personnel who are infected with an infectious disease	No infectious disease occurred		Training records	Monthly during the construction phase			
	Training requirements	Every training defined in the Annual ESHS is completed		Annual Environmental, Social Health, and Safety (ESHS) training plan	Annually during the construction phase			



	Adequate OHS organizational structure.	There will always be an adequate OHS organizational structure on site.		Site implementation Site inspection	Quarterly during the construction phase			
	Number of workers,	Total hours worked should be less than 11 hours The total of overtime working		Timesheets, Grievance records	Monthly, yearly			
	Number of working hours both contractor and subcontractor,			Timesheets,	Monthly, yearly			
		hours cannot exceed 270 hours in a year.		Grievance records				
	Number of OSH meeting, toolbox			Timesheets, Grievance records Training records	Monthly, yearly			
Protecting the Workforce	Age of candidate employee	No case of child labor and forced labor	Administration office and Project Aol	Age verification with National ID Grievance records	Before each recruitment Upon relevant grievances	Included in construction cost	Contractor, ALOIZ Construction Supervision Consultant	
Workers Engaged by Third Parties and the Supply Chain	Contractor and sub-contractor agreements	No nonconformity is observed with the ESMP according to the LMP	Administration office	Contract reviews by ESHS expert(s)	Before each agreement made	Included in construction cost	Contractor, ALOIZ Construction Supervision Consultant	
Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	GBV and SEA/SH related incidents GBV and SEA/SH related grievances GM, GBV, SEA/SH trainings	No GBV and SEA/SH related issues Minimum 1 annual refresher training for SEA/SH and GBV	Administration office and Project Areas	Document review Review of grievance logs Review of training records	Quarterly Upon relevant grievances Yearly	Included in construction cost	Contractor, ALOIZ/ Construction Supervision Consultant	
Grievance Mechanism	Number of Grievance Number of closed grievances Percent of closed grievances Average days taken to close	100 percent of satisfactorily resolved grievances within stipulated time	Project Aol	Data on complaints are collected in a database and reported	Monthly	Included in construction cost	Contractor, ALOIZ Construction Supervision Consultant	
Stakeholder Engagement	Number of meetings Total number of participants by used method	Include all stakeholder	Project Aol	Stakeholder records	Monthly	Included in construction cost	Contractor, ALOIZ Construction Supervision Consultant	

\*In cases where the Turkish requirements differ from the levels and measures presented in the WBG's EHS Guidelines, the more stringent one (such as the most stringent discharge and emission standards) will be applied in the project specifications.

**Table 9.3 Monitoring Plan for the Operation Phase**

Issue	Parameters to be monitored (What parameter is to be monitored?)	Target/Threshold Value*	Monitoring location (Where the parameter is to be monitored?)	Monitoring Method (How is the parameter to be monitored/ type of monitoring equipment?)	Timing/Frequency of Monitoring (When is the parameter to be monitored- frequency of measurement or continuous?)	Cost of Monitoring (What is the cost of equipment or contractor charges to perform monitoring?)	Responsible Party/Parties	Supervision observation and comments  to be filled out during supervision with reference to adequate measuring reports
Soil and Contaminated Land	Number of spills/leaks	No soil contamination resulting from project activities	Entire Project area	Environmental incident reports	Monthly during the operation phase After each incident	Included in operation cost	ALOIZ	
	Amount of contaminated soil			Sampling and analysis by an authorized environmental laboratory	Upon grievance			
	Soil quality, including heavy metals, petroleum hydrocarbons, organic halogens							



Water quality of the receiving environment	Water quality analysis parameters including Ammonium, Oil and Grease, Biological Oxygen Demanded BOD, Dissolved Oxygen DO, Conductivity, Chemical Oxygen Demanded COD, Nitrate, pH, Total Phosphorus, TP, Orthophosphate, Total Kjeldahl Nitrogen, TKN, Total Nitrogen, TN, Floride, Manganese, Selenium, Sulphur	Prevention of water quality deterioration compared to current surface water COD: 250 mg/L TSS: 200 mg/L Oil and grease: 20 mg/L Total Phosphorus (P): 2 mg/L Total Chrome: 2 mg/L Chrome (Cr+6): 0.5 mg/L Lead (Pb): 2 mg/L Total Cyanide (CN-): 1 mg/L Cadmium (Cd): 0.1 mg/L Ferrous (Fe): 10 mg/L Fluoride (F-): 15 mg/L Copper (Cu): 3 mg/L Zinc (Zn): 5 mg/L Mercury (Hg): 0.05 mg/L Sulphate (SO4-2): 1500 mg/L Total Kjeldahl Nitrogen (TKN): 20 mg/L Fish Bioassay (TDF): 10 Color: 280 Pt-Co pH:6-9	Downstream and upstream of Kunduz Creek	In-situ measurements and laboratory measurements and analysis via an authorized environmental laboratory  Spill notices/correspondences to authorities in case of major spills	Quarterly during the operation phase	Included in operation cost	ALOIZ	
Effluent water quality	COD, TSS, Oil and grease,TP, Total Chromium, Chromium (Cr+6), Lead (Pb), Total Cyanide (CN-), Cadmium (Cd), Iron (Fe), Fluoride (F-), Copper (Cu), Zinc (Zn), Mercury (Hg), Sulphate ( SO4-2), Total Kjeldahl Nitrogen (TKN), Fish Bioassay (TDF), Colour, pH	Effluent discharge compliant with the discharge standards	Discharge location	Automatic measurement for relevant parameters and laboratory analysis for others via an authorized environmental laboratory	Continuous monitoring for the detectable by automatic measurement devices Twice a month for the others (at minimum 24 samplings in a year)	Included in operation cost	ALOIZ	
Noise	Noise level	Not exceeding the limit values defined in Regulation on Environmental Noise Control and	In case of a complaint, in the relevant area	At least 24-hr noise measurements via an authorized environmental laboratory	Upon grievance	Included in operation cost	ALOIZ	
		WB standards No noise related grievance received						
Odor	Odor Level	Limited number of grievances, resolved adequately, fast and to the satisfaction of the complainants.	Location of Grievance	Grievance records Measurement via an authorized environmental laboratory	Upon grievance	Included in operation cost	ALOIZ	



Waste	Type and amount of waste generated including sludge	Adhering to the TurkStat estimation of 1.13 kg/person/day waste generation  Minimizing the amount of waste to be sent for disposal and implement waste management hierarchy	Treatment plant site and storage areas	Visual observation Waste Records Site inspections Disposal truck register	Weekly basis starting from the initialization of the operation phase of the Project	Included in operation cost	ALOIZ	
Resources	Types and amounts of materials/resources used	Use of recycled materials whenever possible Reducing energy consumption	Administration office	Material/resource procurement/consumption records	Annually starting from the initialization of operation phase	Included in operation cost	ALOIZ	
Infrastructure Damage	Number and nature of cases and amount of compensation paid	No infrastructure cases	Administration office	Incident records Receipts of compensation payments	Monthly during the operation phase	Included in operation cost	ALOIZ	
Trespassing	Trespassing cases	No trespassing	Administration office	Security reports Visitor logs	Weekly during the operation phase	Included in operation cost	ALOIZ	
	Condition of CCTV system			System checks	Daily during the operation phase			
Community Health and Safety	Health and safety signs and traffic signs placed in appropriate locations	All cases that cause health and safety problems to be prevented	Project Area	Visual observation Site inspection	Daily basis Upon grievance	Included in operation cost	ALOIZ	
Working Conditions	Workers' grievances	Proper management of provisions given in ESMP	Administration office	Grievance records	Weekly during the operation phase	Included in operation cost	ALOIZ	
Occupational Health and Safety	Number of incidents	No OHS incidents occurred	Administration office	Incident records	Daily basis starting from the initialization of operation phase	Included in operation cost	ALOIZ	
	Incident investigation	No OHS incidents occurred		Incident investigation records	Daily basis starting from the initialization of operation phase			
	Period of disease occurrence	No infectious disease is recorded		Disease follow-up register	Daily basis starting from the initialization of operation phase			
	Number of personnel who are infected with an infectious disease	No infectious disease is occurred		Training records	Monthly during the operation phase			
	Number of workers,	Total hours worked should be less than 11 hours The total of overtime working hours cannot exceed 270 hours		Timesheets, Grievance records Timesheets, Grievance records	Monthly, yearly			
	Number of working hours both contractor and subcontractor,				Monthly, yearly			
	Number of OSH meeting, toolbox				Monthly, yearly			
		in a year.		Timesheets, Grievance records Training records				



	Training requirements	Every training defined in the Annual ESHS is completed		Annual ESHS training plan	Annually during the operation phase			
Protecting the Workforce	Age of candidate employee	Prohibit child labor	Administration office	Age verification with National ID	Before each recruitment	Included in operation cost	ALOIZ	
Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	GBV and SEA/SH related incidents GBV and SEA/SH related grievances GM, GBV, SEA/SH trainings	No GBV and SEA/SH related issues Minimum 1 annual refresher training for SEA/SH and GBV	Administration office	Document review Review of grievance logs Training records	Quarterly Upon relevant grievances Yearly	Included in operation cost	ALOIZ	
Grievance Mechanism	Number and nature of Grievance Number of closed grievances Percent of closed grievances Average days taken to close	100 percent of satisfactorily resolved grievances within stipulated time	Project Aol	Data on complaints are collected in a database and reported	Monthly	Included in operation cost	ALOIZ	
Stakeholder Engagement	Number of meetings Total number of participants by used method	Include all stakeholder	Project Aol	Stakeholder records	Monthly	Included in operation cost	ALOIZ	



## 10 INSTITUTIONAL ARRANGEMENT AND TRAINING

The main responsible organization for the implementation of this ESMP is Aliğa OIZ (ALOIZ). ALOIZ has the adequate ability and capacity to manage the implementation of the project and in particular the E&S. A PMU will be established by ALOIZ to carry out operational and administrative tasks. The PMU staff will be the Aliğa OIZ's own staff. Besides, on different phases of the Project, various parties (contractors, Construction Supervision Team, Ministry of Industry and Technology (MoIT), etc.) will take responsibility for various parts of the ESMP. All mentioned works will be coordinated by the ALOIZ. Mitigation and monitoring tables, which are given in this ESMP, summarize the relevant responsibilities.

In that scope, it is suggested to add below mentioned liabilities to tender documents of any possible contractor(s):

- Technical characteristics of the ESMP,
- Environmental, social and health and safety liabilities, □ Other environmental and social issues that can show-up.
- Additional management plans (have been listed Table 2.)

### 10.1 Roles and Responsibilities

MoIT Implementation Unit (PIU) will include an environmental specialist and social expert to supervise the implementation of the ESMP. The specialist will supervise the implementation of the ESMP by ALOIZ and document performance, recommendations and any further actions required. He/she will provide guidance to ALOIZ officials on WB procedures, consultation and disclosure requirements. In addition, ALOIZ will inform MoIT and WB on any project changes or unforeseen circumstances in the approved project documents.

ALOIZ will be responsible for providing technical and data support during the supervision of contractors and the preparation of technical and financial feasibility reports regarding projects. Moreover, ALOIZ holds ultimate responsibility for the environmental and social performance of the overall Project, including the performance of its contractors and any other contractors. A PMU will be established to carry out operational and administrative tasks. The PMU staff will be the ALOIZ's own staff.

The parties responsible for the monitoring progress are contractor, Construction Supervision Consultant and ALOIZ/PMU during the construction phase, while only ALOIZ/PMU is responsible for monitoring progress during the operation phase of the Project. Depending on the monitoring plan, the Contractor will prepare monthly Environmental and Social Monitoring Reports (ESMRs) to be submitted to ALOIZ; whereas ALOIZ will review and submit EMSRs to MoIT monthly. Environmental engineer/expert will appoint a representative on site to lead the development of this ESMP and its onsite implementation.

Regarding implementation of the ESMP, a team (project management unit) to be established by the OIZ management will be specified to include team members detailed as follows and indicated in the below chart.

#### ***Project Coordinator***

- Overall responsibility for the ESMP implementation,

#### ***Project Manager***



- Ensure that ESMP provisions are implemented to mitigate environmental and social impacts,
- Ensure that all workers participate in training sessions on ESMP. Maintain a record of training and conduct of awareness sessions for staff to ensure compliance with environmental and safety commitments stated in ESMP,
- Prepare monthly environmental and social monitoring reports for submission to MoIT PIU.

#### ***Environmental Specialist***

- Ensure that the environmental management systems of the project comply with the ESMP,
- Monitor the environmental impacts and risks of the construction activities on site.

#### ***Social Specialist***

- Adopt and implement Stakeholder Engagement Plan (SEP),
- Establish an easily accessible public and workers' grievance mechanism,
- Manage and ensure effective operationalization of the GM,
- Record grievances,
- Disclosure to complainant,
- Monitor the social impacts and risks of the construction activities on site.

#### ***OHS Specialist***

- Ensure that implementation and supervision of Occupational Health and Safety Management Plan,
- Preparedness and response to emergency situation according to Emergency Response Plan
- Notify MoIT PIU immediately about any contingencies such as labor issues, accidents and incidents. The incident report including root cause analysis, precautions and compensation measures taken, will be shared with MoIT PIU in 30 business days.

#### ***Technical Expert***

- Responsible for the project design,
- Coordinating the actions and evaluations in case of a change due to engineering/design changes.





**Figure 10.1** Organizational Chart of Project Management Unit (PMU)

A table defining the responsibilities for the MoIT PIU, OIZ PMU, E&S consultant, construction supervision consultant and contractor is given below. The roles and responsibilities of the relevant institutions which are involved in the management, monitoring, implementation and finalization of the Project in line with both national and WB ESF requirements are summarized in the table below

**Table 10.1 Parties Responsible for the Management of the Project in Accordance with World Bank ESF Requirements**

Institution	Responsibilities
<b>MoIT Project Implementation Unit (PIU)</b>	<ul style="list-style-type: none"> <li>• Providing guidance to OIZ and the consultant that is responsible for preparation of this ESMP and SEP considering WB's requirements (standards, guidelines and procedures),</li> <li>• Reviewing the documents related to the environmental and social assessment of the project, provide comments/revisions to the consultant in order to develop (performing overall quality assurance) the E&amp;S documents,</li> <li>• Guiding OIZ and the consultant on stakeholder consultation and announcement requirements within the scope of this ESMP,</li> <li>• Following of monitoring activities such as the implementation of this ESMP, other environmental and social mitigation measures, grievance process and Main Project's Labor Management Procedures (LMP),</li> <li>• Auditing the OIZ's ESMP practices and giving feedback on its performance, and further actions to be taken within the overall project audit,</li> <li>• Being open and responsive to concerns raised by affected groups and local environmental authorities regarding environmental aspects of sub-project implementation. Meet with these groups during site visits, as necessary,</li> <li>• In case of necessity, providing coordination and communication regarding the field visits</li> <li>• GM, GBV, Code of Conduct, SEA/SH training will be given to OIZ PMU, Supervision Consultant and Contractor's Environmental and Social Specialists and training records will be kept.</li> <li>• PIU will also be responsible for the Grievance Mechanism (GM). The PIU's responsibilities at GM are as follows:               <ul style="list-style-type: none"> <li>• Establishing a system for recording grievances from stakeholders and maintaining this system</li> <li>• Ensuring that all grievances are documented and followed up to resolution □ Escalating grievances to appropriate departments or personnel for further action..</li> <li>• Informing complainants about the status and consequences of their grievances.</li> <li>• Documenting all steps taken to address grievances and maintaining records for accountability and transparency.</li> <li>• Preparation of regular reports on complaint trends and resolution results for management and stakeholders</li> </ul> </li> </ul>

OIZ	Project	□ Assigning/hiring one environmental expert, one social expert and one OHS expert with sufficient
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Institution	Responsibilities
Management Unit (PMU)	<p>qualifications and skills</p> <ul style="list-style-type: none"> <li>• Implementation of this ESMP and related management plans and achieving of all commitments under these plans. Checking both the technical and administrative progress of contract packages and</li> <li>• Providing support to implementation of the mitigation measures and commitments given in the ESMP and SEP on site</li> <li>• Sharing the ESMP with the Contractor and Construction Supervision Consultant,</li> <li>• Guiding the Contractor in preparing and approving the sub-management plans,</li> <li>• Coordinating the actions and evaluations in case of a change due to engineering/design changes, route/location changes, legislative changes related to environmental and social issues, authorization provision changes, new environmental/social data, construction/operation strategy changes.</li> <li>• Updating the ESMP when necessary and sharing additional commitments with the Contractor,</li> <li>• Informing MoIT PIU via <b>monthly ES Monitoring Reports</b>, which will be prepared in line with ESMP and submitted by the consultant and contractor,</li> <li>• Auditing contractor activities in line with ESMP requirements,</li> <li>• Ensuring compliance with project standards, taking urgent action in case of non-compliance within the knowledge and approval of MoIT PIU,</li> <li>• Suspending work in any situation that threatens environment and community and occupational health and safety and informing MoIT PIU,</li> <li>• Analyzing and following-up the environmental (including OHS) and social accidents/incidents. <i>Specifically, for any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.), the OIZs will inform MoIT PIU in 3 business days,</i></li> <li>• Notify MoIT PIU immediately about any contingencies such as environmental, social and labor issues or accidents, incidents or loss of time that has or is likely to have a significant adverse impact on the environment, affected communities, the public or workers. The incident report including root cause analysis, precautions and compensation measures taken, will be submitted to MoIT in 30 business days,</li> <li>• GM, GBV, Code of Conduct, SEA/SH training will be given to OIZ PMU, Supervision Consultant and Contractor's personnel and training records will be kept.</li> <li>• PMU will also be responsible for the Grievance Mechanism (GM). The PMU's responsibilities at GM are as follows: <ul style="list-style-type: none"> <li>• Develop and update grievance mechanism policies and procedures.</li> <li>• Checking whether grievance mechanisms are implemented across projects or programs □</li> <li>• Coordinating with the PIU for consistent and effective grievance management.</li> <li>• Capacity building of PMU through training, guidance and support.</li> <li>• Provide resources and tools to improve grievance management.</li> <li>• Monitoring the performance of grievance mechanisms.</li> <li>• Evaluating the effectiveness of grievance resolution processes and making improvements.</li> </ul> </li> </ul>
E&S Consultant	<ul style="list-style-type: none"> <li>• Preparation and finalizing this ESMP and the SEP as per the concerns/opinions of the stakeholders of the Project for the approval of MoIT PIU and WB,</li> <li>• Supporting the PIU to organize and carry out the stakeholder consultation meeting for the draft version of this ESMP and SEP,</li> <li>• Organizing and delivering a training to the respective OIZ PMU on ESMP implementations, and commitments, which covers project related environmental and social impacts and risks, and corresponding measures applied to avoid, reduce, and mitigate the risks and potential adverse impacts, roles and responsibilities assigned to the relevant party, monitoring plan and reporting process prior to the construction activities are commenced.</li> </ul>



<b>Construction Supervision Consultant</b>	<ul style="list-style-type: none"> <li>• Supervision of construction and/or rehabilitation works and installation of equipment,</li> <li>• Identification and management of risks and impacts related to environmental, social and OHS issues,</li> <li>• Ensuring initiation of corrective actions where necessary, ensuring implementation of mitigation measures by the contractor, and sufficient capacity in the team (at least one Social Expert, one Environmental Expert and one full-time OHS Expert) to perform E&amp;S supervision effectively within the scope of this ESMP and SEP in accordance with the WB requirements,</li> <li>• The E&amp;S Team will be responsible for taking actions required to eliminate/minimize environmental and social impacts and risks in line with this ESMP and for putting monitoring plans into practice,</li> <li>• Preparing the bidding documents during the implementation, conducting bidding processes. <i>The requirements of the WB and the Construction Contract including this ESMP, SEP and LMP will be chased and cooperating with the MoIT PIU for the supervision of construction activities,</i></li> </ul>
<b>Institution</b>	<b>Responsibilities</b>
	<ul style="list-style-type: none"> <li>• Follow up and audit the contractor's activities on a daily basis in line with the measures and commitments given in this ESMP,</li> <li>• Ensuring and monthly report the E&amp;S performance of the contractor to the OIZ PMU,</li> <li>• Using the contractual authority and notifying MoIT PIU and the OIZ PMU on time if any noncompliances are encountered,</li> <li>• Monitoring and evaluating the performance of the services provided by the Contractor,</li> <li>• Providing guidance to the OIZ PMU and contractor on the WB's requirements (documents and procedures),</li> <li>• Any non-conformities found during the inspections will be managed by a process adapted to the severity of the case,</li> <li>• Chasing the penalties arising from the contract, checks the suitability of the work done by the Contractor, gives warnings and directions, and notifies the OIZ PMU in a timely manner if necessary.</li> </ul>
<b>Contractor</b>	<ul style="list-style-type: none"> <li>• Fulfillment of all requirements of ESMP and the relevant management plans,</li> <li>• Implementation of additional commitments to be included in the Construction Contract,</li> <li>• Preparation of its site-specific sub-management plans (mentioned above in the relevant sections and the mitigation measures Tables) in line with this ESMP, including OHS plans before construction, as part of their method statement and submit to the OIZ PMU and MoIT PIU for reviewing and approval,</li> <li>• Ensuring compliance with project standards, obtaining all relevant permits and licenses,</li> <li>• Implementing of the mitigation measures provided in this ESMP and monitoring of construction activities (including subcontractor activities) in compliance with the national legislation and WB standards,</li> <li>• Development of monitoring plans/procedures in accordance with the ESMP structure, implementation after the approval of OIZ and MoIT PIU,</li> <li>• Employment of competent Environmental, Social and OHS Experts (at least one Social Expert, one Environmental Expert and one full-time OHS Expert) within the scope of the project,</li> <li>• Train its own and subcontractor's staff on environmental, social and OHS issues,</li> <li>• Carrying out the environmental and social audits to monitor the ESMP practices on site and report on this to the construction supervision consultant,</li> <li>• Submission of Environmental and Social Progress Reports (ESPRs) for environmental and social issues, mitigation, results and findings throughout the construction period to the construction supervision consultant and OIZ PMU,</li> <li>• Notifying immediately of the contingencies such as environmental, social and labor issues or accidents, incidents or loss of time to construction supervision consultant and OIZ PMU and keeping an event log on site throughout the life of the Project. The incident report including root cause analysis and the corrective actions to be taken will be submitted to construction supervision consultant and OIZ PMU within 30 days,</li> <li>• In addition to the project's Labor Management Procedures, the Labor Management Plan which will be prepared by the contractor will also comply with the Labor Legislation (4857 Labor Law), Occupational Health and Safety Plan and Procedures (6331 Occupational Health and Safety Law) and 5510 Social Insurance Law.</li> <li>• Developing and implementing Labour Management Plan (based on Project's LMP) including working conditions, fair treatment, non-discrimination, equal opportunity, vulnerable/disadvantaged workers, GBV, SEA/SH, prevention of child labor and forced labor issues under the project's Labor and Employment Policy for construction phase.</li> <li>• Establishment and implementation of project specific grievance mechanism for the Project construction activities in coordination with OIZ PMU.</li> </ul>

## 10.2 Reporting

Reporting process that should be put into action during the implementation phase of the project is an important tool to record and chase project activities in compliance with the national and WB standards. Therefore, the requirements of such processes are presented in below table.

**Table 10.2 Requirements Of Such Processes**

Responsible Party	Roles & Responsibility
MoIT Project Implementation Unit (PIU)	<ul style="list-style-type: none"> <li>Quarterly inform the WB with Environmental and Social Reports (ESRs) to include summary of Environmental and Social Monitoring Reports (ESMRs) on the progress and updates. Quarterly ESRs will highlight any issues arising from non-compliance with ES requirements in the ESMP and how it has been/is being addressed from the ESF requirements point of view.</li> <li>Submitting the quarterly Grievance Mechanism Report (GMR) to WB</li> <li>Site visits will be carried out quarterly and environmental and social issues will be examined on site. Findings after site visit will be included in the quarterly ESRs.</li> <li>Recording every action taken to resolve grievances and keeping records to ensure accountability and transparency.</li> <li>Generating periodic reports on grievance patterns and resolution results for management and stakeholders.</li> </ul>
OIZ Project Management Unit (PMU)	<ul style="list-style-type: none"> <li>Review and submit monthly ESMRs to MoIT PIU</li> <li>Submitting the monthly GMR to cover both Consultant's GMR and Contractor GMR to MoIT PIU</li> <li>Compiling grievance information and creating detailed reports for senior management and external parties.</li> <li>To guarantee accountability and openness in the management and resolution of grievances.</li> </ul>
Construction Supervision Consultant	<ul style="list-style-type: none"> <li>Prepare and submit monthly ESMR to OIZ PMU including monthly Environmental and Social Progress Report (ESPR) from the contractor. Monthly ESMRs will highlight any issues arising from non-compliance with ESMP requirements and how it has been/is being addressed from the ESF point of view.</li> <li>Submit the monthly Grievance Mechanism Report to OIZ prepared in line with the complaint received and combine it with monthly the Grievance Mechanism Report prepared by the Contractor</li> </ul>
Contractor	<ul style="list-style-type: none"> <li>Prepare and submit monthly ESPRs covering the progress of the construction activities and environmental and social issues to the Construction Supervision Consultant</li> <li>Submit the monthly GMR to Construction Supervision Consultant</li> </ul>

Regarding the reporting process, workflow is summarized in the chart below.



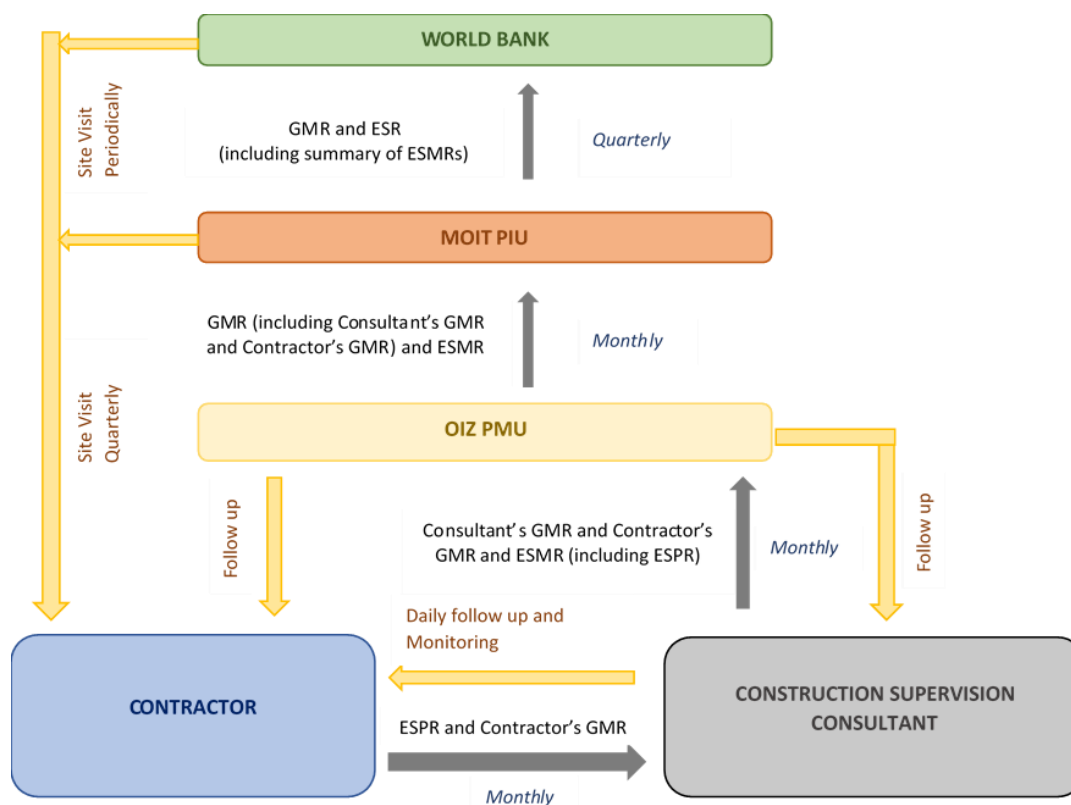


Figure 10.2 Reporting Process on ESMP Implementation

### 10.3 Training

One of the main necessities of the ESMP is training for the Project Owner's and contractor's top-level management and employees.

Necessary training will be given to the personnel immediately after the recruitment and will also be refreshed during the work period and conducted at different levels. Some short-term training is required for the Environment Manager, other staff members of the PIU and the contractor staff to raise their levels of environmental awareness. The training can be conducted by either some external experts or with the help of in-house expertise of the PIU and the consultants and help of MoIT and WB. In the long-term training, special environmental and social issues will be investigated and likely solutions provided to the PIU.

The mentioned training will take place within maximum two (2) days. This period will be determined by considering the responsible trainer's opinion on how many days it takes to explain the relevant subject the evaluation of the trainees' prior knowledge and capacities on the relevant subjects and the detailed scope of the syllabus that has been prepared. The PIU is also responsible for the monitoring of the Contractor's actions on training. The training will be given after signing the works contracts and refresher trainings will be held as needed depending on work progress and construction activities. Measurement and evaluation will be performed at the end of the training given to the personnel. This is to measure the effectiveness of the training and to measure the trainees' level of knowledge and competence. According to the review results, the training program can be modified, or trainers can be replaced, or training can be repeated, if needed, upon determining whether the training is effective.

The basic training that are planned to be given are as follows, but not limited to:

- Waste Management,

- Energy Efficiency,
- Safe Driving,
- Occupational Health and Safety,
- Chance Find Procedure,
- Induction training including Code of Conduct, GBV & SEA/SH, GM, EHS and ESMP Requirements, and
- First-Aid and Emergency Preparedness Measures
- Accident investigation
- Root cause analyze
- Code of Conduct

Table 10.3 provide examples of the basic training for the ESMP implementation. The training programs will be developed annually and delivered by the PMU.

**Table 10.3 Training Program**

Training Topics	Responsible Party (Trainer Party)	Target Group	Duration	Time	Cost
<input type="checkbox"/> Overview of potential impacts and mitigation measures <input type="checkbox"/> Requirements of environmental monitoring <input type="checkbox"/> Occupational Health and Safety Training <input type="checkbox"/> Role and responsibilities of the contractor <input type="checkbox"/> Content and methods of implementation of environmental mitigation measures <input type="checkbox"/> Response and risk control <input type="checkbox"/> Preparation and submission of report <input type="checkbox"/> Risk response and control <input type="checkbox"/> Other areas to be determined	PMU support of MoIT	Contractor, related authorities: On-site construction management staffs, environmental staffs of contractor, related authorities	Two (2) days of training twice a year to be repeated on a yearly basis depending on needs.	After signing the works contract	- Related to the construction personnel trainings will be Included in construction cost. On the other hand for the operation personnel training budget will be estimated as 20,000 dollars for the training purpose.-
<input type="checkbox"/> General environmental and social management relating to the Project <input type="checkbox"/> Requirements on environmental and social monitoring <input type="checkbox"/> Monitoring and implementation of mitigation measures <input type="checkbox"/> Guide and supervise contractor in implementation of the ESMP <input type="checkbox"/> Documentation and reporting	Environmental and Social Consultant	Environmental staff, technical staff and administrative staff of the PMU	Two (2) days of training twice a year to be repeated on a yearly basis until the end of the DLP.	Soon after the Project effectiveness but at least one (1) month before the construction of the contract. The follow-up training will be scheduled as needed.	- Related to the E&S Consultant personnel trainings will be Included in Project cost. On the other hand for the operation personnel training budget will be estimated as 20,000 dollars for the training purpose.-



<input type="checkbox"/> Code of conduct					
Training Topics	Responsible Party (Trainer Party)	Target Group	Duration	Time	Cost
<input type="checkbox"/> SEA/SH and GBV training/ awareness					
<input type="checkbox"/> Risk response and control					
<input type="checkbox"/> Chance Find Procedures					
<input type="checkbox"/> Other areas to be determined					

In addition, the training program/modules shall address a range of issues, including but not limited to:

- Purpose of ESMP regarding the Project activities,
- Requirements in management plans and monitoring activities to be performed within the scope of this plan,
- Understanding of the sensitive environmental and social receptors within the project area and its vicinity, and
- Awareness-raising about the potential risk and impacts from the project activities,
- Grievance redress mechanism developed within the scope of the project, grievance redress mechanism officer and employee rights,
- Community health and safety risks and measures,
- OHS, first aid, emergency preparedness,
- Code of conduct and clothing,
- Communication with the local community,
- Code of conduct training, including gender-based violence, sexual harassment, sexual exploitation and abuse,
- Traffic and road safety principles, and
- Training aiming at the sorting, storage and environmental planning of waste.

## 11 STAKEHOLDER MANAGEMENT

The project has a SEP. In this context, this section presents a brief explanation of the stakeholder engagement strategy to be followed during the implementation of the project.

### 11.1 Previous Stakeholder Engagement Activities

Aliağa OIZ Wastewater Reclamation Plant is a part of Türkiye Organized Industrial Zones main project developed by MoIT. Stakeholder engagement activities carried out during the development of the main project are presented in the project specific SEP. Stakeholder engagement efforts have included meetings with key stakeholders, including relevant ministries and other government agencies, OIZs, development agencies and other development partners.

ENCON, who prepared this ESMP and the SEP for the Project, is the E&S Consultant and provided necessary information to the Project Owner and took part in the organization of the stakeholder consultation meeting of the Project that was held on 12<sup>th</sup> of September 2024. In the meeting, the E&S Consultant made a presentation that provided information on project description, its potential environmental and social impacts and risks and then comments, suggestions and expectations of the stakeholders were received through a questions and answers session. This ESMP



was then revised based on the inputs from the engagement activities and comments received during the meeting.

## 11.2 Disclosure and Consultation of the ESMP

As part of the requirements of WB ESF, the ESMP is to be publicly disclosed and will be the responsibility of the Project Implementation Unit (PIU). The ALOIZ will ensure that the final approved ESMP is disclosed and made available locally at the ALOIZ offices, in places easily accessible to affected groups such as headmen offices and local NGOs, and published on both the OIZ's website ([www.alosbi.org.tr](http://www.alosbi.org.tr)) and MoIT PIU website ([yesilosb.sanayi.gov.tr](http://yesilosb.sanayi.gov.tr)).

A range of tools have been used for stakeholder engagement within this Project. Different engagement methods are proposed and cover different stakeholder needs for before construction, during construction and operation phases as stated below:

- Formal/ informal face-to-face meetings,
- Digital communication tools (including web pages, correspondence by phone/email, WhatsApp, short message service),
- Written materials,
- Grievance mechanism,
- Media promotions.

## 11.3 Stakeholder Consultation

Stakeholder consultation meeting of the Project was held on 12<sup>th</sup> of September 2024. Aliağa OIZ- Meeting Hall in Aliağa district of İzmir province was selected as the meeting venue. The meeting venue had enough capacity and facilities to ensure comfortable and efficient communication during the event.

Prior to the stakeholder consultation meeting, various information dissemination methods were used to inform relevant public authorities (including provincial and district governorates, municipal mayors, etc.), mukhtars, local communities, and local media agencies. In the process of announcing the stakeholder consultation meeting, announcements were published on the official website of Aliağa OIZ on September 2, 2024 and in the local newspaper (Yeni Asır) on September 3, 2024. The newspaper announcement and the Aliağa OIZ official website notice regarding the meeting are provided in Annex-10.1. In addition, prior to the start of the meeting, project information brochures were distributed to the participants. The brochure is provided in Annex-10.1.

The meeting was attended by representatives of Aliağa OIZ, public authorities and ENCON (E&S Consultant), as well as local communities. In addition, an Environmental Expert and a Social Expert from the Ministry of Industry and Technology (MoIT-PIU) also attended the meeting online. Photos from the meeting are presented in Annex-10.4.

The meeting started with an introduction and explanation of the purpose and scope of the meeting and followed by a presentation by ENCON and a final discussion session where questions, concerns and suggestions of the participants were received. The presentation used during the meeting is provided in Annex-10.1.

A total of 22 people attended the meeting in person for the Project. The representatives of MoIT participated via zoom. In accordance with the Personal Data Protection Law, the meeting list of participants will not be published and will be stored in the Project Implementation Unit archives for project management purposes only. The list of participants of the meeting held within the scope of the Project will be stored for the duration of the Project and will not be shared with third parties.. The meeting lasted for about one hour. The questions, issues, concerns and suggestions raised by the



participants during the SCM were categorized and a summary of the SCM findings is provided in Table 11.1.

**Table 11.1 Summary of Stakeholder Consultation Meeting Findings**

Party who Raised the Question/ Issue/Concern/ Suggestion	Question/Issue/Concern/ Suggestion Raised	Response of Project Sponsors/ Environmental Consultant
Participant 1* Aliağa Municipality Employee	You mentioned that some units of the existing treatment plant will be demolished. Will the quality of the current discharge change when the demolition is done and new units are under construction?	During the construction phase of the project, WWTP will be gradually stopped, the wastewater standard will not change and the wastewater will not be bypassed.
Participant 2* Open Penitentiary Institution Employee	Is it possible to treat and discharge the wastewater generated in the Open Penal Institution with this Project?	Since the project design is complete, it is not possible to change the project. In addition, since the project will serve the organized industrial zone, there will be no wastewater discharge outside the OIZ.
Participant 3* Employee in One of the OIZ Facilities	When will the construction of the project start?	Construction activities will begin after project approval.

\*The participation's name is not given because of the Law on Protection of Personal Data.

## 11.4 Grievance Mechanism

The main aim of the grievance mechanism is to assist in resolving complaints and grievances in a timely, effective, and efficient manner that satisfies all parties involved. The GM (and also workers' GM) will be effective during the lifespan of the project. It is intended to serve as a mechanism to:

- Allow identification and impartial, timely and effective resolution of issues affecting the project,
  - Strengthen accountability of the beneficiaries, including project-affected stakeholders, and
  - Provide channels for the stakeholders to provide feedback and raise concerns.
- Offer a consultation process that is clear, transparent, culturally sensitive, and easily accessible.
- Provide the option for anonymous complaints and feedback, particularly in cases related to Gender Based Violence (GBV), Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH).
- Recognize that grievances concerning community health, safety, and environmental risks may be urgent, especially in cases of accidents, communicable diseases, and pollution. Immediate actions must be taken to address and prevent further harm.



In addition to public GM, the ESS 2 requires the establishment of a Workers' Grievance Mechanism (WGM) for the project workers. Constitution of WGM will be under responsibility of the Contractor in accordance with its LM Plan which will be prepared in line with Project's LMP. The project workers will use the WGM to convey their concerns or suggestions regarding their working conditions and workplace.

The details such GM levels and steps of implementation on GM is presented in SEP.



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# ANNEXES

## ANNEX-1 INSTITUTIONAL OPINIONS





T.C.  
İZMİR VALİLİĞİ  
Yatırım İzleme ve Koordinasyon Başkanlığı

Sayı : 52921961-000-E.72739  
Konu : Kamulaştırma

19/12/2018

ALİAĞA ORGANİZE SANAYİ BÖLGESİ MÜDÜRLÜĞÜNE  
Çoraklar Mahallesi 5005 Sokak No:8 Aliağa/İZMİR

4562 Sayılı Organize Sanayi Bölgeleri Kanunun 5. Maddesinde OSB müteşebbis heyetin başvurusu üzerine Bakanlıkça verilen Kamu Yararı Kararı ve sınırları belirlenmiş yetki çerçevesinde kamulaştırma işlemleri yaptırabilen bir özel hukuk tüzelkişiliğidir.

OSB kamulaştırma işlemlerini "Valilik, İl Özel İdaresi, Belediye ve Yatırım İzleme Koordinasyon Başkanlığına yaptırabilir." hükmü, Yatırım İzleme ve Koordinasyon Başkanlığının görev ve yetki ve sorumlulukları başlıklı 5. Maddesinde ise "OSB Kanunun 12. Maddesinde verilen hak ve yetkileri kullanmak, mükellefiyetleri yerine getirmek" hükmü yer almaktadır.

Belirtilen hükümler doğrultusunda İzmir Valiliği Yatırım İzleme ve Koordinasyon Başkanlığımızca yürütülen Aliağa Organize Sanayi Bölgesinin yer alacağı saha içerisinde özel mülkiyet sahiplerine ait arsaların kamulaştırma işlemleri ile ilgili; Aliağa Organize Sanayi içerisinde var olan parselde ait taşınmaz hak sahibi 63 kişi ile temasa geçilmiş, önceliğinde 141 ada 12 parsel her yönü ile tespit edilmiştir.

İlçede var olan mahalle Muhtarlarıyla, Emlakçı, Maliye Müdürlüğü ve İlçe Belediyesinden rayiç değerler alınarak adaletli bir şekilde kıymet takdirleri hazırlanmıştır. Gerekli hesaplamaların ardından kamulaştırma iş ve işlemlerine 14.05.2018 tarihinde yapılan görüşmeler neticesinde 141 ada 12 parsel taşınmaz ve parsellerin maliki olan 63 kişi ile uzlaşma görüşmeleri için Yatırım İzleme ve Koordinasyon Başkanlığımıza davet edilmiş ve yaşlı olan vatandaşlarımız da evlerinde ziyaret edilerek hak sahiplerinin tamamı ile uzlaşma tutanağı imzalanmıştır. Uzlaşma tutanağını imzalayan 63 kişi hak sahibinin Tapu ve Kadastro Müdürlüğündeki işlemlerinin ardından Aliağa Organize Sanayi Bölgesi Müdürlüğü aracılığıyla hesaplarına kamulaştırma bedelleri ödenmiştir.

Sonuç olarak; İlçemize ait Aliağa Organize Sanayi Bölgesinde var olan taşınmaz sahipleriyle hakkaniyetli bir şekilde kamulaştırma işlemi uzlaşma ile tamamlanmıştır. Aliağa Organize Sanayi Bölgesi Müdürlüğü içerisinde özel mülkiyet sahiplerine ait arsaların kamulaştırma işlemleri 7 aylık süre zarfında sonuçlanmıştır.

Bilginizi ve gereğini rica ederim.

Uğur KOLSUZ  
Vali a.

\*Bu belge elektronik imzalıdır. imzalı suretinin aslını görmek için <https://www.e-imzalar.gov.tr/EvrakDogrulama> adresine girerek (qNOTGO-YoToH1-Su8r0L-Px6qRS-IZAn+ct2) kodunu yazınız.

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Bilgi için: Özgür BULUT  
TEKNİSYEN  
Telefon No:





T.C.  
ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI  
ÇED İzin ve Denetim Genel Müdürlüğü

**ÇEVRE İZİN BELGESİ**

Belge No	: 223406636.0.1
Başlangıç Tarihi	: 28.09.2022
Bitiş Tarihi	: 28.09.2027
Tesis Adı	: ALIĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Tesis Adresi	: ÇORAKLAR Mahallesi, 5001/1 SOKAK, No: 3 /18-, ALIĞA, İZMİR, Türkiye
İşletme Vergi No	: 520069145
Çevre İzin ve Lisans Konusu	: Atıksu Deşarjı

Yukarıda adı ve açık adresi belirtilen tesise Çevre İzin ve Lisans Yönetmeliği kapsamında ÇEVRE İZİN BELGESİ verilmiş olup 27.09.2022 tarihli ve 58003700-150/E.2317 sayılı yazı ile birlikte geçerlidir. Aynı kullanılmaz.

 e-imzalıdır  
Mehrali ECER  
Bakan a.  
Genel Müdür

5070 sayılı Elektronik İmza Kanunu gereği bu belge elektronik imza ile imzalanmıştır.

Figure- 2 Environmental Permit



T.C.  
İZMİR VALİLİĞİ  
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü



Sayı : E-48657465-220.03-5960871  
Konu : ALOSBI Atıksu Arıtma Tesisi Kapasite  
Artışı ÇED Muafiyet

ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ  
Çoraklar Mahallesi 5028 Sokak No:6 ALİAĞA / İZMİR

İlgi : 17.02.2023 tarih ve 5683643 sayılı yazımız.

İlgi'de kayıtlı başvuruda İlimiz Aliağa İlçesi, Çoraklar Mahallesi 5001/1 Sokak No:3 adresinde tapunun 141 ada 17 parselinde Bölge Müdürlüğünüze ait atık su arıtma tesisi kapasitesinin 18.000 m<sup>3</sup>/gün'e çıkarılmasının planlandığı belirtilerek atık su arıtma tesisinin ÇED Yönetmeliği çerçevesinde değerlendirilmesi talep edilmiştir.

Müdürlüğümüzce dosyasında yapılan incelemede; Bölge Müdürlüğünüze ait 3.500 m<sup>3</sup>/gün kapasiteli atık su arıtma tesisi için İl Müdürlüğümüzün 14.04.2015 tarih ve 12331 sayılı yazısıyla faaliyetin ÇED Yönetmeliği kapsamı dışında olduğuna dair görüş yazısının bulunduğu anlaşılmış olup, **"Atık Su Arıtma Tesisi Kapasite Artışı (3.500 m<sup>3</sup>/gün'den 18.000 m<sup>3</sup>/gün'e Çıkarılması)"** faaliyetinin 29.07.2022 tarih ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği'nin EK-1 Çevresel Etki Değerlendirmesi Uygulanacak Projeler Listesinin 15. Maddesinde **"15-Kapasitesi 50.000 m<sup>3</sup>/gün üzeri olan atık su arıtma tesisleri,"** ile EK-2 Çevresel Etkileri Ön İnceleme ve Değerlendirmeye Tabi Projeler Listesinin 51. Maddesi **"51-Kapasitesi 30.000 m<sup>3</sup>/gün ve üzeri olan atık su arıtma tesisleri,"** kapsamında değerlendirilmekle birlikte arıtma tesisi kapasitesinin Yönetmelikte belirtilen eşik değerin **"30.000 m<sup>3</sup>/gün"** altında kalması nedeniyle faaliyet hakkında ÇED Yönetmeliği hükümlerinin uygulanmasına gerek bulunmadığı anlaşılmıştır.

Bu görüş sadece ÇED Yönetmeliği çerçevesinde verilmiş bir görüş olup, nihai izin/onay niteliği taşımamaktadır. Faaliyetle ilgili değişiklik yapılmasının planlanması (unvan değişikliği, kapasite artışı, adres değişikliği vb) durumunda Müdürlüğümüze tekrar başvuru yapılması gerekmektedir.

Bilgilerinizi ve gereğini rica ederim.

Ömür ÖZDİL

Vali a.

Çevre, Şehircilik ve İklim Değişikliği İl Müdürü

Bu belge, güvenli elektronik imza ile imzalanmıştır.  
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2404

Figure- 3 EIA Exemption Certificate

## ANNEX-2 LEGAL FRAMEWORK



## **I. LEGAL FRAMEWORK**

This chapter is constructed to elucidate the main aspects of the legal and administrative framework followed in the design of this ESMP. Various national legislation and international conventions and standards explained in the following chapters are also to be complied with during different stages of the Project, including pre-construction, construction and operation.

The administrative structure in Türkiye is governed by central and local administrations. The central administration is organized so that the land mass of the country is divided into provinces and the provinces into further smaller divisions (i.e., districts, municipalities, villages/neighborhoods) according to geographic and economic conditions, and the need for public services. For the purpose of meeting collective local needs, the populations of provinces, municipalities, and villages/neighborhoods are administered by units of local government established by law (Toksoz, F., 2006).

Ministries are the units of central administration. Local branches of ministries are composed of provincial organizations attached to governors and district organizations attached to the district governors (Hacettepe University, Department of Political Science and Public Administration, April, 2015). At the local level, municipality mayors and the chief of the villages/neighborhoods (mukhtar) are the representatives of the administrative structure.

### **I.1. National Legislation**

The key national laws and regulations presented in this chapter include the legal requirements to reduce the potential environmental impacts that may arise from the pre-construction, construction and operational activities of the Project. National Legislation related to the Project is presented in the following chapters under relevant subtopics.

#### **I.1.1. National Environmental, Health and Safety Legislation**

Environmental Law No. 2872, which is ratified in August 1983 (Official Gazette dated 11.08.1983 and numbered 18132), is one of the principal legislations related to the Project. Several by-laws and decrees are enforced under the Environmental Law.

The Environmental Impact Assessment (EIA) Regulation (Official Gazette dated July 29, 2002 and numbered 31907) defines the administrative and technical procedures and principles to be followed throughout the EIA process and is largely in line with the EU Directive on EIA. When an activity (a Project) is planned, the Project developer is responsible for preparing an EIA Report along with many other permits required to realize the Project. However, facilities are subject to preparation of an EIA Report depending on the type of facility, its capacity, or the location of the activity. The activities that are subject to the provisions of the EIA Regulation are listed in Annex I and Annex II of the Regulation. For Annex I activities, a full EIA Report is required and those projects go through the full EIA process. For Annex II activities, a Project Identification File (PIF) is prepared in accordance with the outline given in the EIA Regulation and the relevant process has to be conducted. As a result of the submission of PIF, if “EIA is required” decision is given, a full EIA Report is prepared.

According to the EIA Regulation, if the capacity of the treatment plant is between 10,000-30,000 m<sup>3</sup>/day, it is included in the Annex-II list, and if it is between 30,000-50,000 m<sup>3</sup>/day, it is included in the Annex-I list. In Aliğa OIZ Wastewater Treatment Plant, the capacity of the plant will be increased by 8,500 m<sup>3</sup>/day. Therefore, the project will serve with a capacity of 12,000 m<sup>3</sup>/day. Thus, it is included in the Annex-II list in Turkish legislation. Annex-II Projects require a full Project Introduction File, but an EIA is not required.

The rest of the Turkish Legislation that the Project will comply with is presented in Table- 1.



**Table- 1 Turkish EHS Legislation Related to the Project**

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Phases
<b>National Environmental, Legal and Political Framework</b>			
<b>Waste Management</b>			
Regulation on the Control of Waste Batteries and Accumulators	August 31, 2004	25569	□ This regulation applies on battery and accumulator wastes that may occur as a result of office or vehicle use throughout the lifetime of the Project.
Regulation on the Control of Excavation Soil, Construction and Demolition Waste	March 18, 2004	25406	□ This regulation applies to activities that will cause to the generation of excavation soil, construction, and demolition wastes, especially during the construction phase of the Project.
Regulation on the Control of End-of-Life Tires	November 25, 2006	26357	□ This regulation applies on waste management of End-of-Life Tires generated during all phases of the project.
Regulation on the Control of End-of-Life Vehicles	December 30, 2009	27448	□ This regulation applies on waste management of End-of-Life Vehicles generated during all phases of the project.
Regulation on Waste Management	April 2, 2015	29314	□ This regulation is the main regulation applies on regarding the non-hazardous and hazardous wastes that will be generated as a result of all activities to be carried out throughout the lifetime of the Project.
Regulation on the Control of Waste Vegetable Oil	June 6, 2015	29378	□ This regulation applies on waste vegetable oils during especially the operation phase of the Project.
Regulation on the Control of Medical Waste	January 25, 2017	29959	□ This regulation applies for medical waste to be generated throughout the life of the Project.
Regulation on Zero Waste	July 12, 2019	30829	□ This regulation applies on the establishment of zerowaste management system that aims to protect the environment and human health and all resources regarding the wastes that will be generated as a result of all activities to be carried out throughout operation phase.
Regulation on the Management of Waste Oil	December 21, 2019	30985	□ This regulation applies on waste oils that may occur as a result of vehicle/equipment maintenance throughout the lifetime of the Project.
Regulation on the Control of Packaging Waste	June 26, 2021	31523	□ This regulation applies on packaging waste that will occur as a result of activities that can be carried out throughout the lifetime of the Project.
Regulation on Management of Waste Electrical and Electronic Equipment	December 26, 2022	32055	□ This regulation applies on electrical and electronic equipment waste as a result of activities to be carried out throughout the lifetime of the Project.
<b>Water Quality Control and Management</b>			
Regulation on Control of Water Pollution	December 31, 2004	25687	□ This regulation applies on discharge of treated effluent during operation phase, wastewater generated by the site staff during pre-construction and construction phases.
Regulation on the Water Intended for Human Consumption	February 17, 2005	25730	□ This regulation applies on the monitoring of the suitability for human consumption of water within the scope of the Project during all phases of the project.



Regulation on the Control of Pollution Caused by Hazardous Substances in and around Water Environment	November 26, 2005	26005	□ This regulation applies on the hazardous substance impacts on the water and its surroundings that may occur during the Project lifetime.
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Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Phases
Regulation on Urban Wastewater Treatment	January 8, 2006	26047	□ This regulation applies on effluent quality and treatment efficiencies to be met during the operation phases of planned WWTP.
Regulation on the Protection of Groundwater against Pollution and Deterioration	April 7, 2012	28257	□ This regulation applies on protection of groundwater sources against pollution during pre-construction, construction and operation phases.
Regulation on Surface Water Quality	November 30, 2012	28483	□ This regulation applies on discharge of treated effluent and monitoring of water quality at receiving body during operation phase.
Regulation on the Monitoring of Surface Waters and Groundwater	February 11, 2014	28910	□ This regulation applies on procedures and principles for revealing the current status of all surface waters and groundwater throughout the country in terms of quantity, quality and hydro morphological elements, monitoring waters with an approach based on ecosystem integrity, and ensuring standardization in monitoring and coordination between institutions and organizations that carry out monitoring during lifetime of Plan.
Regulation on Determination of Sensitive Water Bodies and the Areas Affecting these Bodies and Improvement of Water Quality	December 23, 2016	29927	□ This regulation applies on determination of the receiving body sensitivity during pre-construction phase and discharge of treated effluent during operation phase.
Communiqué on Technical Procedures in Wastewater Treatment Plants	March 20, 2010	27527	□ This Communiqué applies on the technical principles that will form the basis for wastewater treatment facility project design during pre-construction phase.
Communiqué on Technical Personnel Working in Wastewater Treatment Plants	May 23, 2019	30782	□ This Communiqué applies on the procedures and principles regarding the qualifications, certification, duties, authorities and responsibilities of the technical personnel to be employed in order to ensure that the wastewater treatment plants are operated effectively, efficiently and in accordance with the legislation during operation phase.

#### **Air Quality Control and Management**

Regulation on the Air Quality Assessment and Management	June 6, 2008	26898	□ This regulation applies on activities that may cause the deterioration of the air quality during the lifetime of the Project, especially the construction phase of the Project.
Regulation on Industrial Air Pollution Control	July 3, 2009	27277	□ This regulation applies on activities that may cause air pollution during the lifetime of the Project, especially the construction phase of the Project.
Regulation on the Control of Odor Causing Emissions	July 19, 2013	28712	□ This regulation applies on odor nuisance may occur due to activities arising from the WWTP throughout the life of the project.
Regulation on the Monitoring of Greenhouse Gas Emissions	May 17, 2014	29003	□ This regulation applies on greenhouse gas emissions during the lifetime of the Project.



Regulation on Exhaust Gas Emission Control	March 11, 2017	30004	<input type="checkbox"/> This regulation applies on exhaust gas emissions sourced from project vehicles, machinery and equipment during the lifetime of the Project.
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#### **Noise Control and Management**

Regulation on the Environmental Noise Emissions Caused by Equipment Used Outdoors	December 30, 2006	26392	<input type="checkbox"/> This regulation applies on the noise emissions caused by equipment used outdoors within the Project especially throughout the construction phase.
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Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Phases
Regulation on Environmental Noise Control	November 30, 2022	32029	<input type="checkbox"/> This regulation applies on the management of noise emissions during lifetime of the Project.

#### **Soil Quality Control and Management**

Regulation on Soil Pollution Control and Point Source Contaminated Fields	June 8, 2010	27605	<input type="checkbox"/> This regulation applies on the protection of soil against pollution during lifetime of the Project.
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#### **Environmental Management, Permitting and Planning**

Environmental Law No: 2872	August 11, 1983	18132	<input type="checkbox"/> This general law regulates the main environmental rules for all activities to be carried out during the lifetime of the Project.
Organized Industrial Zones Law No: 4562	April 15, 2000	24021	<input type="checkbox"/> This law regulates the principles for the establishment and operation of organized industrial zones should be followed at all phases of the project since the Project is Wastewater Treatment Plant Capacity Extension Project of OIZ.
Regulation on Environmental Permits and Licensing	September 10, 2014	29115	<input type="checkbox"/> This regulation applies on the required environmental permits and licenses at all phases of the Project.
Regulation on Wastewater Collection and Disposal Systems	January 6, 2017	29940	<input type="checkbox"/> This Regulation applies on the procedures and principles regarding the planning, design and projecting, construction and operation of wastewater collection and disposal systems during the lifetime of the Project.
Regulation on Environmental Impact Assessment	July 29, 2022	31907	<input type="checkbox"/> This regulation applies on the national environmental impact assessment processes of the Project including the basic infrastructure works of the OIZ.

#### **National Social, Legal and Political Framework**

#### **Community Health and Safety**

General Sanitation Law No: 1593	May 6, 1930	1489	<input type="checkbox"/> This law applies on take measures on health and sanitation during all phases of the Project.
Highways Traffic Law No: 2918	October 13, 1983	18195	<input type="checkbox"/> This law applies on ensuring traffic order on the highways during the all phases of the Project.
Regulation on Traffic Signs	June 19, 1985	18789	<input type="checkbox"/> This regulation applies on traffic sign for the purpose of ensuring traffic order and safety during all phases of the Project.
Regulation on Highway Traffic	July 18, 1997	23053	<input type="checkbox"/> This regulation applies on ensuring traffic order on the highways during the all phases of the Project.
Preparation, Completion and Cleaning Works Regulation	April 28, 2004	25446	<input type="checkbox"/> This regulation applies on the working conditions in the preparation, completion and cleaning works that must be carried out in order for the main work carried out in a workplace to be carried out in an orderly, healthy and safe manner during lifetime of the Project.



<b>Labor and Working Conditions</b>			
Labor Law No: 4857	June 10, 2003	25134	<input type="checkbox"/> This main law applies on the rights and responsibilities of the workers employed based on the labor contract with the employers, regarding the working conditions and working environment during the lifetime of the Project.
Regulation on the Procedures and Principles of Employment of Children and Young Workers	April 06, 2004	25425	<input type="checkbox"/> This regulation applies on determine the basis of the way children and young workers work without endangering their health and safety, physical, mental, moral and social development or education, and to prevent their economic exploitation during lifetime of the Project.
Social Security and General Health Insurance Law No: 5510	June 16, 2006	26200	<input type="checkbox"/> This law applies on health and safety measures to be taken during lifetime of the Project.
Regulation on the Protection of Buildings from Fire	December 19, 2007	26735	<input type="checkbox"/> This regulation applies on measures to be taken for fire protection during construction and operation phases.

<b>Legislation</b>	<b>Official Gazette Date</b>	<b>Official Gazette Number</b>	<b>Implications for the Project Phases</b>
Occupational Health and Safety Law No. 6331	June 30, 2012	28339	<input type="checkbox"/> This law applies on occupational health and safety measures to be taken during lifetime of the Project.
Communiqué on Occupational Health and Safety Hazard Classes List	December 26, 2012	28509	<input type="checkbox"/> This Communiqué applies on determination of hazard classes during lifetime of the Project.
Regulation on Risk Assessment for Occupational Health and Safety	December 29, 2012	28512	<input type="checkbox"/> This regulation applies on preparation of occupational health and safety risk assessment and all related principles to be followed during lifetime of the Project.
Regulation on Health and Safety Conditions Regarding Use of Work Equipment	April 25, 2013	28628	<input type="checkbox"/> This regulation applies on ensuring the health and safety conditions for the use of work equipment to be used during life of the Project.
Manual Handling Operations Regulation	July 24, 2013	28717	<input type="checkbox"/> This regulation applies on health and safety measures to be taken during manual handling activities at all phases of the Project.
Regulation on the Use of Personal Protection Equipment at Workplaces	July 2, 2013	28695	<input type="checkbox"/> This regulation applies on personal protection equipment to be used at lifetime of the Project.
Regulation on the Protection of Workers Against the Dangers of Explosive Environments	April 30, 2013	28633	<input type="checkbox"/> This regulation applies on measures to be taken in case the use of explosive usage during preconstruction and construction phases.
Regulation on Emergency Situations in Workplaces	June 18, 2013	28681	<input type="checkbox"/> This regulation applies on measures to be taken during emergency situations in workplaces during lifetime of the Project.
Regulation on Health and Safety Precautions Regarding Working with Chemicals	August 12, 2013	28733	<input type="checkbox"/> This regulation applies on chemical handling and necessary precautions in workplaces during lifetime of the Project.



Regulation on the Methods and Essentials of Occupational Health and Safety Trainings for Workers	May 15, 2013	28648	<input type="checkbox"/> This regulation applies on health and safety training to be performed during lifetime of the Project.
Regulation on the Protection of Workers from Noise Related Risks	July 28, 2013	28721	<input type="checkbox"/> This regulation applies on health and safety measures to be taken against the noise impacts during lifetime of the Project.
Regulation on the Protection of Workers from Vibration Related Risks	August 22, 2013	28743	<input type="checkbox"/> This regulation applies on health and safety measures to be taken against the vibration impacts during lifetime of the Project.
Regulation on Management of Dust	November 5, 2013	28812	<input type="checkbox"/> This regulation applies on management of to be generated dust during pre-construction and construction phases.
Regulation on Health and Safety Signs	September 11, 2013	28762	<input type="checkbox"/> This regulation applies on health and safety signs to be placed during lifetime of the Project.
Regulation on the Occupational Health and Safety for Temporary or Fixed Term Jobs	August 23, 2013	28744	<input type="checkbox"/> This regulation applies on health and safety measures to be taken for temporary workers during lifetime of the Project.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Phases
Regulation on the Occupational Health and Safety in Construction	October 5, 2013	28786	<input type="checkbox"/> This regulation applies on constructional health and safety measures to be taken during construction phase.
First Aid Regulation	July 29, 2015	29429	<input type="checkbox"/> This regulation applies on in case of a first aid requirement during construction and operation phases.
Regulation on Personal Protection Equipment	May 1, 2019	30761	<input type="checkbox"/> This regulation applies on personal protection equipment to be used during construction and operation phases.

#### **Management of Chemicals and Other Dangerous Substances**

Regulation on the Classification, Labelling and Packaging of Materials and Mixtures	December 11, 2013	28848	<input type="checkbox"/> This regulation applies on chemicals and mixtures to be used during lifetime of the Project.
Regulation on Material Safety Data Sheets on Hazardous Materials and Mixtures	December 13, 2014	29204	<input type="checkbox"/> This regulation applies on preparation and distribution of safety data sheets in order to ensure effective control and surveillance against the negative human health and the environment effects of hazardous substances and mixtures that may be used during lifetime of the Project.
Regulation on Health and Safety Measures in Working with Asbestos	January 1, 2013	28539	<input type="checkbox"/> This Regulation determines the limit values and other special measures to prevent the exposure of employees to asbestos dust in asbestos removal, demolition, repair, maintenance and removal works and to protect them from health risks arising from this exposure.
Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals	June 23, 2017	30105	<input type="checkbox"/> This regulation applies on to ensure a high level of protection of human health and the environment during the construction and operation phases, to evaluate the damages of the substances used, to have information on the registration, evaluation, permission and restriction of those chemicals.



Regulation on the Road Transportation of Hazardous Goods	June 18, 2022	31870	<input type="checkbox"/> This regulation applies on hazardous goods to be transported during lifetime of the Project.
<b>Land Use</b>			
Expropriation Law No: 2942	November 4, 1983	18215	<input type="checkbox"/> This law applies on management of Expropriation during the planning phase of the Project.
Soil Conservation and Land Use Law No: 5403	July 19, 2005	25880	<input type="checkbox"/> This law applies on management of change in the land use during the planning phase of the Project.
Regulation on the Protection, Usage and Planning of Agricultural Lands	December 9, 2017	30265	<input type="checkbox"/> This regulation applies on management of change in the land use during the planning phase of the Project.
<b>Stakeholder Engagement</b>			
Use of the Right to Petition Law No: 3071	November 10, 1984	18571	<input type="checkbox"/> This law applies on management of proposal/grievance during lifetime of the Project.
Right to Information Law No: 4982	October 24, 2003	25269	<input type="checkbox"/> This law applies on exercise of the right to information by individuals as a requirement of democratic and transparent governance.
Regulation on the Principles and Procedures for the Enforcement of the Law on the Right to Information	April 27, 2004	25445	<input type="checkbox"/> This regulation applies on people's usage of right to information in accordance with democratic and transparent management during lifetime of the Project.
<b>Others</b>			
<b>Legislation</b>	<b>Official Gazette Date</b>	<b>Official Gazette Number</b>	<b>Implications for the Project Phases</b>
Law on Conservation of Cultural and Natural Assets No. 2863	July 23, 1983	18113	<input type="checkbox"/> This regulation applies on measures to be taken during chance finds at the construction phase.
Regulation on the Implementation of the Law Concerning Private Security Services	October 7, 2004	25606	<input type="checkbox"/> This regulation applies on private security services to be used during construction and operation services.
Regulation on Contractors and Sub-contractors	September 27, 2008	27010	<input type="checkbox"/> This regulation applies on management of the conditions for the establishment of the principal employer-subcontractor relationship, the notification and registration of the workplace belonging to the subcontractor, the issues that should be included in the subcontractor agreement.
Regulation Concerning the Increase in the Efficiencies of Energy Consumption and Energy Resources	October 27, 2011	28097	<input type="checkbox"/> This regulation applies on the procedures and principles regarding the effective use of energy, prevention of energy waste, and increasing efficiency in the use of energy resources and energy to protect the environment during lifetime of the Project.
Protection of Personal Data Law No: 6698	April 7, 2016	29677	<input type="checkbox"/> This law applies on protection of fundamental rights and freedoms of individuals, especially the privacy of private life, in the processing of personal data during lifetime of the Project.
Regulation Concerning the Ozone Depleting Substances	April 7, 2017	30031	<input type="checkbox"/> This regulation applies on ozone depleting substances to be used during construction and operation phases.



Building Earthquake Regulation	March 18, 2018	30364	□ This regulation applies on necessary rules and minimum conditions for the design and construction of all or parts of building-type structures under the influence of earthquakes and for the evaluation and strengthening of the performances of existing buildings under the influence of earthquakes during pre-construction and construction phases.
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\*Relevant amendments of the listed legislation will be applicable.

İzmir Aliğa Organized Industry Zone (ALOIZ) shall comply with the requirements of the current national legislation and codes of practice and fulfill all other legal requirements. Therefore, during each stage of the planned Project and implementation of related management plans, all activities will be carried in accordance with certain standards and limits set by the above-mentioned laws and regulations and any license and/or permit required for the upcoming stages of the Project will be acquired accordingly.

## I.2. International Agreements and Standards

International financial institutions follow certain policies and procedures regarding assessment and management of environmental and social impacts/risks of the projects to be financed. As a requirement of international support for the Project, environmental and social impact assessment studies shall be undertaken to guarantee that the Project's design, construction and operation will be satisfactory for international environmental standards alongside national legislation.

### I.2.1. International Environmental Conventions that Türkiye is a Contracting Party

Turkish national policy on protection of cultural heritage and conservation of biological resources has been constituted on the base of relevant international agreements that Türkiye has ratified or acceded by laws or relevant legislation. In addition to these, there are various laws and regulations on protection and conservation of natural habitats, wildlife and cultural heritage.

The international agreements and conventions on biological, cultural heritage, environmental and wildlife conservation that Türkiye had ratified are:

- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (1972),
- Paris Convention on the Protection of the World Cultural and Natural Heritage (1975),
- Barcelona Convention on the Protection of the Mediterranean Sea Against Pollution (1976),
- The Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) (1981),
- Bern Convention on Protection of Europe's Wild Life and Living Environment (1982),
- Convention on Long Range Transboundary Air Pollution (CLRTAP) (1983),
- Convention on Long-Range Transboundary Air Pollution and the Cooperative Programme for Monitoring and Evaluation of the Long-Range Transmissions of Air Pollutants in Europe (EMEP) (1983),
- Vienna Convention for the Protection of the Ozone Layer (1988),
- Mediterranean Sea Protocol Concerning Specially Protected Areas and Biodiversity (1988), including related protocols,
- Montreal Protocol on Substances Depleting the Ozone Layer (1990),
- Convention on Biological Diversity (Rio Convention) (1992),
- The International Convention on the Established of an International Fund for Compensation for Oil Pollution Damage (FUND 1992),
- International Convention on Civil Liability for Oil Pollution Damage (1992),



- Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (RAMSAR) (1994),
- Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal (1994),
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1996),
- Kyoto Protocol (1997),
- UN Convention to Combat Desertification (CCD) (1998),
- United Nations Europe Economic Commission Convention on Transboundary Effects of Industrial Accidents (2000),
- European Landscape Convention (2001),
- Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) (2001),
- UN Framework Convention on Climate Change (UNFCCC) (2004),
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention) (2004),
- Stockholm Convention on Persistent Organic Pollutant (POPs),
- Convention for the Protection of the Black Sea Against Pollution (Bucharest) (1994) and its protocols including the Protocol for the Protection of Biological and Landscape Diversity in the Black Sea (2004),
- ILO Conventions; ○ ILO Convention on Forced Labor (1930), ○ ILO Convention on Freedom of Association and Protection of the Right to Organize (1948), ○ ILO Convention on Right to Organize and Collective Bargaining (1949), ILO Convention on Equal Remuneration (1951), ○ ILO Convention on Abolition of Forced Labor (1957), ○ ILO Convention on Discrimination (Employment and Occupation) (1958), ○ ILO Convention on Minimum Age (1973), ○ ILO Convention on Worst Forms of Child Labor (1999).

Aside from the listed ILO Conventions, which are categorized as fundamental conventions; Türkiye also ratified three out of four governance conventions, 48 out of 177 technical conventions, out of 59 Conventions ratified by Türkiye, of which 55 are in force, three Conventions have been denounced which are C 34 Fee-Charging Employment Agencies Convention, C 58 Minimum Age (Sea) Convention (Revised) and C 59 Minimum Age (Industry) Convention (Revised); one instrument abrogated which is C 15 Minimum Age (Trimmers and Stokers) Convention; none have been ratified in the past 12 months.

#### I.2.1.1. International Legal and Regulatory Framework for Ecology and Biodiversity

##### *Bern Convention*

Bern Convention was put forward in 1982 in order to protect the European wildlife and natural habitats. Species to be protected according to the Bern Convention are listed in four appendices, which are presented in Table- 2 with their explanations:

**Table- 2 Annexes to the Bern Convention**

Annex	Explanation
I	Strictly protected flora species
II	Strictly protected fauna species
III	Protected fauna species
IV	Prohibited means and methods of killing, capture and other forms of exploitation



The Convention aims at conserving and promoting biodiversity, developing national policies for the conservation of wild flora and fauna and their natural habitats, protection of the wild flora and fauna from the planned development and contamination, developing trainings for protection practices, promoting and coordinating the researches made regarding this subject. It has been signed by 26 member states of the European Council (as well as Türkiye) with the aim of conserving the wildlife in Europe. Species that are not included within the appendices of the Convention are those that do not require any special protection. Species are not listed individually but instead are protected due to the habitat protection approach of the Bern Convention. All the nations that are party to the BERN Convention have signed the Convention on Biological Diversity as well. Parties of this convention are responsible for ensuring sustainable use of resources in line with their national development trends and conserving the threatened species.

## CITES

CITES stands for the Convention on International Trade in Endangered Species of Wild Flora and Fauna. It is an international agreement that has been ratified by governments of 164 states (including Türkiye), whose aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. The principles of CITES are based on sustainability of the trade in order to safeguard ecological resources (live animals and plants, vast array of wildlife products derived from them, including food products, exotic leather goods, etc.). CITES was signed in 1973 and entered in force on July 1, 1975. Türkiye ratified the Convention in 1996. Categories and species included in CITES are listed in three different appendices based on their protection statuses. These appendices and their explanations are given in Table- 3.

**Table- 3 Appendices to CITES**

Appendix	Explanation
I	Covers the species, which are under the threat of extinction. Trade in the specimens of these species is not allowed except extraordinary circumstances
II	Includes species, which are not threatened with extinction, but trade in specimens is restricted in order to prevent utilization incompatible with their survival
III	For which other parties of CITES is applied for assistance in controlling trade and which are conserved at least in one country.

## IUCN

The International Union for Conservation of Nature (IUCN) publishes its Red List of Threatened Species, which intends to draw attention to species whose populations are at risk or under threat. The IUCN places a species on the Red List only after studying its population and the reasons for its decline. Some countries pay greater attention to IUCN-listed species than Bern-listed species, since the Red List relies on more research. The 1994 (ver.2.3) and 2001 (ver.3.1) categories and criteria of the IUCN Red List are presented below in Table- 4. The Red List Categories and Criteria had been re-formed through evaluating more open and easier to use systems. As a result, the IUCN Commission made revisions in February 2000 and the new set of categories and criteria were published in 2001.

**Table- 4 IUCN Red List Categories and Criteria**

IUCN Red List Categories and Criteria 1994 (ver. 2.3)		IUCN Red List Categories and Criteria 2012 (ver. 4.0)	
EX	Extinct	EX	Extinct
EW	Extinct in the Wild	EW	Extinct in the Wild
CR	Critically Endangered	CR	Critically Endangered
EN	Endangered	EN	Endangered
VU	Vulnerable	VU	Vulnerable
LR	Lower Risk		



	cd : conservation dependent	NT	Near Threatened
	nt : near threatened	LC	Least Concern
	lc : least concern		
DD	Data Deficient	DD	Data Deficient
NE	Not Evaluated	NE	Not Evaluated

### 1.2.2. World Bank Environmental and Social Framework (ESF)

Since the main finance source of the Project is WB; the Project must be in compliance with the good international practice, including WB ESSs, guides, performance standards and best practices documents alongside the national legislation.

In addition, the project classified as Moderate Risk according to WB's E&S Policy, which states that for moderate risk projects the potential risks and impacts and issues are likely to have the following characteristics: (i) predictable and expected to be temporary and/or reversible, (ii) low in magnitude, (iii) site-specific, without likelihood of impacts beyond the actual footprint of the project and (iv) low probability of serious adverse effects to human health and/or the environment (e.g., do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.).

Reasons regarding to the risk characterization of the Project is given below:

- The capacity of the planned WWTP is 8,500 m<sup>3</sup>/day and the Project is included in the Annex-II list according to Turkish EIA legislation.
- There is no nationally protected area nor internationally protected and recognized area within the project area.
- With the realization of the Project, the wastewater will be treated and discharge of untreated wastewater into environment will be prevented. Therefore, the Project will have a positive impact on both the environment and public health

The World Bank Group (WBG) Environmental, Health and Safety (EHS) Guidelines constitutes technical reference resources that include general and sector specific examples of international good sector practices. It includes the information on applicable environmental, the health and safety issues for all industrial sectors. WBG uses the EHS Guidelines as a technical source of information during Project appraisal. EHS Guidelines include performance levels and measurements that can be achieved at newly installed facilities using WBG's available technologies at reasonable cost.

WBG General Health and Safety Guidelines include the following main items;

- Environmental
  - o Air Emissions and Ambient Air Quality
  - o Energy Conservation
  - o Wastewater and Ambient Water Quality
  - o Water Conservation
  - o Hazardous Materials Management
  - o Waste Management
  - o Noise
  - o Contaminated Land
  - Occupational Health and Safety
    - o General Facility Design and Operation
    - o Communication and Training
    - o Physical Hazards
    - o Chemical Hazards
    - o Biological Hazards
    - o Radiological Hazards
    - o Personal Protective Equipment
    - o Special Hazard Environments
    - o Monitoring



- Community Health and Safety
  - o Water Quality and Availability
  - o Life and Fire Safety
  - o Transport of Hazardous Materials
  - o Disease Prevention
  - o Emergency Preparedness and Response
- Construction and Decommissioning
  - o Environment
  - o Occupational Health and Safety
  - o Community Health and Safety

The World Bank's Environmental and Social Framework (ESF) was developed as a result of a review of ESSs and aims to create better long-term development outcomes. Environmental and Social Standards in the ESF have a more comprehensive approach, especially on social issues. The World Bank's Environmental and Social Standards included in the ESF and the ESSs on which these standards are based are given in Table- 5.

**Table- 5 ESS and OP/BP Relation**

Environmental and Social Standards	Building on
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	OP/BP4.01(Environmental Assessment)
ESS2: Labour and Working Conditions	OP/BP4.01 (Environmental Assessment) and EHS Guidelines
ESS3: Resource Efficiency and Pollution Prevention and Management	OP4.09 (Pest Management) and EHS Guidelines
ESS4: Community Health and Safety,	OP/BP4.37 (Safety of Dams) and EHS Guidelines
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	OP/BP4.12 (Involuntary Resettlement)
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources,	OP/BP4.04 (Natural Habitats) and OP/BP4.36 (Forests)
ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	OP/BP4.10 (Indigenous Peoples)
ESS8: Cultural Heritage	OP/BP4.11 (Physical Cultural Resources)
ESS9: Financial Intermediaries	OP/BP 4.01 (Environmental Assessment)
ESS10: Stakeholder Engagement and Information Disclosure	Consolidates WB engagement provisions

In addition to the WBG General EHS Guidelines, WBG Industry Sector Guidelines for Water and Sanitation is also applicable. Moreover, WB Good Practice Note on Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), and WB 2010 Access to Information Policy are other specific guides.

### **I.2.3. Comparison of Turkish EIA Regulation and WB ESSs**

Since the main finance source of the Project is WB; the Project must be in compliance with the good international industry practice, including WB ESSs, WB Group's Environmental, Health and Safety (EHS) guidelines, performance standards and best practices documents alongside the national legislation.



The World Bank (WB) Environmental and Social Framework came into effect on 1 October 2018. The framework enhances the World Bank's commitment to sustainable development through ten Environmental and Social Standards (ESS) that are designed to support Borrowers' environmental and social (E&S) risk management.

The WB ESS structure builds upon the International Finance Corporation's (IFC) Performance Standards (PS) 1 to 8 that was last updated in 2012. As a result, WB ESS 1 through 8 is similar to IFC-PS 1 to 8 and share many themes and components.

The Project and the social and environmental elements in the Area of Influence (Aol) of the Project include elements or activities that are related to the scope of ESS1, ESS2, ESS3, ESS4, ESS5, ESS6 and ESS10. The main objectives of these standards within the scope of the Project are presented below.

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts,
- ESS2: Labour and Working Conditions,
- ESS3: Resource Efficiency and Pollution Prevention and Management, ○ ESS4: Community Health and Safety,
- ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement, ○ ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources, ○ ESS10: Stakeholder Engagement and Information Disclosure,

The gap analysis between the WB ESSs triggered by the Project and Turkish EIA Regulation is presented in Table- 6.



Table- 6 The Relevance of WB ESSs with the Project

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
<b>ESS1 Assessment and Management of Environmental and Social Risks and Impacts</b>	<p>This Standard sets out Borrower's responsibilities for assessing, managing and monitoring Environmental and social risks and impacts related with each phase of the project supported by the World Bank through Investment Project Financing (IPF), so as to accomplish environmental and social results consistent with the Environmental and Social Standards (ESSs). The objectives of ESS1 are as follows:</p> <ul style="list-style-type: none"><li>• To identify, evaluate, and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.</li><li>• To adopt a mitigation hierarchy approach to: (a) Anticipate and avoid risks and impacts; (b) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; (c) Once risks and impacts have been minimized or reduced, mitigate; and (d) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.</li><li>• To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.</li><li>• To utilize national environmental and social institutions, systems, laws, regulations, and procedures in the assessment, development, and implementation of projects, whenever appropriate.</li><li>• To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity.</li></ul>	<p><b>Environmental and Social Assessment and Management System (ESMS)</b></p> <p><u>World Bank's ESF</u> The Borrower will carry out an environmental and social assessment of the project to assess the environmental and social risks and impacts of the project throughout the project life cycle. The assessment will be proportionate to the potential risks and impacts of the project, and will assess, in an integrated way, all relevant direct, indirect, and cumulative environmental and social risks and impacts throughout the project life cycle, including those specifically identified in ESSs 2-10. The Borrower will: (a) Conduct an environmental and social assessment of the proposed project, including stakeholder engagement; (b) Undertake stakeholder engagement and disclose appropriate information in accordance with ESS10; (c) Develop an Environmental and Social Commitment Plan (ESCP), and implement all measures and actions set out in the legal agreement including the ESCP; and (d) Conduct monitoring and reporting on the environmental and social performance of the project against the ESSs.</p> <p><u>Turkish EIA Regulation</u> Environmental risks and impacts of the Project are identified to some extent. However, the range of potential environmental and social impacts has not been identified, for example, there is no social assessment, or assessment of landscape and visual impacts, forestry and in many cases operation of the project has been omitted in assessing impacts.</p> <p><b>Organizational Capacity and Competency</b></p> <p><u>World Bank's ESF</u> Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the ESMS will establish and maintain an emergency preparedness and response system so that the client, in collaboration with appropriate and relevant third parties, will be prepared to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment.</p> <p><u>Turkish EIA Regulation</u> Organisational arrangements and the competency of construction personnel have not been incorporated into the EIA.</p> <p><b>Emergency Preparedness and Response</b></p> <p><u>World Bank's ESF</u> Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the ESMS will establish and maintain an emergency preparedness and response system so that the client, in collaboration with appropriate and relevant third parties, will be prepared to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment. This preparation will include the identification of areas where accidents and emergency situations may occur, communities and individuals that may be impacted, response procedures, provision of equipment and resources, designation of responsibilities, communication, including that with potentially Affected Communities and periodic training to ensure effective response. The emergency preparedness and response activities will be periodically reviewed and revised, as necessary, to reflect changing conditions.</p> <p><u>Turkish EIA Regulation</u> No emergency scenarios, including response mechanisms, have been identified within the EIA.</p> <p><b>Monitoring and Review</b></p> <p><u>World Bank's ESF</u> The project owner should establish procedures to monitor and measure the effectiveness of the management program, as well as compliance with any related legal and/or contractual obligations and regulatory requirements. Where the government or other third party has responsibility for managing specific risks and impacts and associated mitigation measures, the client will collaborate in establishing and monitoring such mitigation measures. Where appropriate, clients will consider involving representatives from Affected Communities to participate in monitoring activities. The client's monitoring program should be overseen by the appropriate level in the organization. For projects with significant impacts, the client will retain external experts to verify its monitoring information. The extent of monitoring should be commensurate with the project's environmental and social risks and impacts and with compliance requirements.</p> <p><u>Turkish EIA Regulation</u> Although EIA is more limited in scope, it requires some environmental and social management plans. There is also a monitoring plan that indicates whether the environmental impacts of the project (in terms of air, water quality, noise and vibration) will comply with the Turkish Environmental Law and relevant legislation.</p>	<p>Conduct a complete assessment of potential environment and social impacts associated with both WWTP construction and operation. Complete an assessment of potential cumulative impacts. Establish a Project ESMS that describes mitigation and performance improvement measures and actions that address the identified environmental and social risks and impacts of the Project. Where the identified risks and impacts cannot be avoided, the client should identify mitigation and performance measures and establish corresponding actions to ensure the project will be operated in compliance with applicable laws and regulations, and meet the requirements ESSs.</p> <p>Define project environment and social resources (construction, consortium and operational) in terms of organisation and competency with regard to environment and social issues.</p> <p>Prepare and implement an emergency response plan for both construction and operational phases.</p> <p>Once adequate baseline data has been captured and potential environmental and social impacts have been assessed for both construction and operational phases, a monitoring plan should be established to capture data to confirm that the project mitigation plans are delivering the desired results and that no unforeseen impacts are occurring.</p>



		<p><b>External Communications and Grievance Mechanisms</b></p> <p><u>World Bank's ESF</u> The project owner should implement and maintain a procedure for external communications that includes methods to (i) receive and register external communications from the public; (ii) screen and assess the issues raised and determine how to address them; (iii) provide, track, and document responses, if any; and (iv) adjust the management program, as appropriate. In addition, clients are encouraged to make publicly available periodic reports on their environmental and social sustainability. Where there are Affected Communities, the client will establish a grievance mechanism to receive and facilitate resolution of Affected Communities' concerns and grievances about the client's environmental and social performance. The grievance mechanism should be scaled to the risks and adverse impacts of the project and have Affected Communities as its primary user. It should seek to resolve concerns promptly, using an understandable and transparent consultative process that is culturally appropriate and readily accessible, and at no cost and without retribution to the party that originated the issue or concern. The mechanism should not impede access to judicial or administrative remedies. The client will inform the Affected Communities about the mechanism in the course of the</p>	<p>A communications plan and procedure (including identification of Affected Communities) should be prepared that describe mechanisms for external communications on environment and social topics. The plan should define how grievances and concerns can be made to the project and how these will be investigated, responded to and rectified, if appropriate.</p>
		<p>stakeholder engagement process.</p> <p><u>Turkish EIA Regulation</u> Stakeholder Engagement Plan: It is explained in EIA Regulation as a plan that explains how, what methods and tools will be used to communicate and inform legal/real persons (stakeholders) who may be affected by the project or have an interest in the project, at all stages of the planned project. Regulation does not address the issues of internal, external communication and grievance mechanism.</p> <p><b>On-going Reporting to Affected Communities</b></p> <p><u>World Bank's ESF</u> The project owner should provide periodic reports to the Affected Communities that describe progress with implementation of the project Action Plans on issues that involve on-going risk to or impacts on Affected Communities and on issues that the consultation process or grievance mechanism have identified as a concern to those Communities. If the management program results in material changes in or additions to the mitigation measures or actions described in the Action Plans on issues of concern to the Affected Communities, the updated relevant mitigation measures or actions will be communicated to them. The frequency of these reports will be proportionate to the concerns of Affected Communities but not less than annually.</p> <p><u>Turkish EIA Regulation</u> The EIA does not define Affected Communities and therefore there is no definition of communication and reporting.</p>	<p>Reporting to Affected Communities should be included within the Communication Plan and Procedure.</p>
<p><b>ESS2</b> <b>Labor and Working Conditions</b></p>	<p>ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. The objectives of ESS2 are as follows:</p> <ul style="list-style-type: none"> <li>• To promote safety and health at work.</li> <li>• To promote the fair treatment, non-discrimination, and equal opportunity of project workers.</li> <li>• To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers, and primary supply workers, as appropriate.</li> <li>• To prevent the use of all forms of forced labor and child labor.</li> <li>• To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.</li> <li>• To provide project workers with accessible means to raise workplace concerns.</li> </ul>	<p><u>World Bank's ESF</u> ESS2 requirements include the documentation and implementation of workforce management procedures applicable to the project. These procedures will specify how project workers will be managed in accordance with the requirements of internal law and this ESS and explain the following; (i) working conditions and management of worker relationship including terms and conditions of employment, non-discrimination and equal opportunities, worker's organizations, (such as the preparation and implementation of workforce management procedures applicable to the project); (ii) protection of the workforce, including the establishment of a minimum age for workers and the prohibition of child labor and forced labor; (iii) grievance mechanism (for workers); (iv) occupational health and safety (OHS) ; (v) contracted workers; (vi) community workers and (vii) primary supply workers. The Borrower will develop and implement written labor management procedures applicable to the project. These procedures will set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS. The project owner should adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of this Performance Standard and national law. The project owner should establish a mechanism to maintain, and improve the worker-management relationship and should also promote compliance with national employment and labour laws. The project owner should establish a mechanism to protect workers, including vulnerable categories of workers such as children, migrant workers, forced labour, workers engaged by third parties, and workers in the client's supply chain while it should also provide a tool to promote safe and healthy working conditions, and the health of workers. In countries where national law recognizes workers' rights to form and to join workers' organizations of their choosing without interference and to bargain collectively, the client will comply with national law. Where national law substantially restricts workers' organizations, the client will not restrict workers from developing alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment. The client should not seek to influence or control these mechanisms. The client will provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. The client will inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them. The mechanism should involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism should also allow for anonymous complaints to be raised and addressed. The mechanism should not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.</p> <p><u>Turkish EIA Regulation</u> There is no Human Resources (HR) Policy for the project. There are warnings about how the workers should prevent any harmful effects that may arise during construction and operation phases. However, detailed working conditions or terms of employment are not mentioned in the EIA report. The EIA does not address worker employment and therefore, there is no documented or formal policy of non-discrimination, equal opportunity and fair treatment in the EIA.</p>	<p>Prepare a Human Resources Policy. Prepare a project handbook that covers working conditions and employment arrangements. Prepare an Equality and Diversity Programme that defines protection of employees, contractors and suppliers. Establish a mechanism to protect workers. Provide a Grievance Mechanism.</p>

<p><b>ESS3</b> <b>Resource Efficiency and Pollution Prevention and Management</b></p>	<p>ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention, and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle consistent with Good International Industry Practice (GIIP). The objectives of ESS3 are as follows:</p> <ul style="list-style-type: none"> <li>• To promote the sustainable use of resources, including energy, water, and raw materials.</li> <li>• To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from</li> </ul>	<p><u>World Bank's ESF</u> The project owner should implement technically and financially feasible and cost effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities. Such measures will integrate the principles of cleaner production into product design and production processes with the objective of conserving raw materials, energy, and water. Where benchmarking data are available, the client will make a comparison to establish the relative level of efficiency. The project owner should avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air (including GHG emissions), water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and transboundary impacts. Where historical pollution such as land or ground water contamination exists, the project should seek to determine whether it is responsible for mitigation measures. It is also important to address potential adverse project impacts on existing ambient conditions, the client will consider relevant factors, including, for example (i) existing ambient conditions; (ii) the finite assimilative capacity of the environment; (iii) existing and future land use; (iv) the project's proximity to areas of importance to biodiversity; and (v) the potential for cumulative impacts with uncertain and/or irreversible consequences. In addition to applying resource efficiency and pollution control measures as required in this Performance Standard, when the project has the potential to constitute a significant source of emissions in an already degraded area, the project should consider additional strategies and adopt measures that avoid or reduce negative effects. These strategies include, but are not limited to, evaluation of project location alternatives and emissions offsets.</p> <p><u>Turkish EIA Regulation</u></p>	<p>Prepare an evaluation of potential resource efficiency during construction and operation. Define potential impacts and develop approaches for avoidance, minimisation and use of alternative materials in order to reduce the project impact on natural and scarce resources. Baseline information must be captured for topics such as potential contaminated land and environmental impacts associated with the soil movement required by the earthworks. All assessments should address current conditions and potential future impacts of project construction and operation</p>
<p><b>ESS4</b> <b>Community Health and Safety</b></p>	<p>project activities.</p> <ul style="list-style-type: none"> <li>• To avoid or minimize project-related emissions of short- and long-lived climate pollutants.</li> <li>• To avoid or minimize generation of hazardous and nonhazardous waste.</li> <li>• To minimize and manage the risks and impacts associated with pesticide use.</li> </ul> <p>ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities. ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. The objectives of ESS4 are as follows:</p> <ul style="list-style-type: none"> <li>• To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and nonroutine circumstances.</li> <li>• To promote quality and safety, and considerations relating to climate change in the design and construction of infrastructure, including dams.</li> <li>• To avoid or minimize community exposure to project-related traffic and road safety risks, diseases, and hazardous materials.</li> <li>• To have in place effective measures to address emergency events.</li> <li>• To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.</li> </ul>	<p>The EIA does not address resource consumption and resource efficiency measures. Baseline information is provided in the EIA on air emissions, wastewater, solid wastes, hazardous wastes and noise. The EIA assessments have focussed on construction phases and have not addressed operational phases for each of these elements. The EIA provides no information regarding the potential contamination of land associated with historical use and does not discuss the environmental and social impacts associated with the volumes of soil movements proposed in the earthworks activities.</p> <p><u>World Bank's ESF</u> WB's ESF: The project should anticipate and avoid adverse impacts on the health and safety of the Affected Community and ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the Affected Communities. ESS4 requirements are as follows: (i) community health and safety, including infrastructure and equipment design and safety, safety of services, traffic and road safety, ecosystem services, community exposure to health issues, management and safety of hazardous materials, and emergency preparedness and response and security; and (ii) security personnel.</p> <p><u>Turkish EIA Regulation</u> The EIA does not address regarding the environmental and social impacts associated with construction camps and the influx of temporary/migrant labour to support construction activities.</p>	<p>Assess the safety and security risks associated with construction and operation of the WWTP on the community and develop a plan to mitigate and manage risks.</p>



<b>SS5</b> <b>Land Acquisition, Restrictions on Land Use and Involuntary Resettlement</b>	<p>ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land, or loss of shelter), economic displacement (loss of land, assets, or access to assets leading to loss of income sources or other means of livelihood), or both. The term “involuntary resettlement” refers to these impacts. The objectives of ESS5 are as follows:</p> <ul style="list-style-type: none"> <li>• To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives.</li> <li>• To avoid forced eviction.</li> <li>• To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost; and (b) assisting displaced persons in their efforts to improve, or at least restore their livelihoods and living standards in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.</li> <li>• To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure.</li> <li>• To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant.</li> <li>• To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.</li> </ul>	<p><u>World Bank’s ESF</u>  Unless properly managed, involuntary resettlement may result in long-term hardship and impoverishment for the affected Communities and persons, as well as environmental damage and adverse socio economic impacts in areas to which they have been displaced. For these reasons, involuntary resettlement should be avoided. However, where involuntary resettlement is unavoidable it should be minimised and appropriate measures to mitigate adverse impacts on displaced persons and host communities should be carefully planned and implemented. The Government often plays a central role on the land acquisition and resettlement process, including determination of compensation, and is therefore an important third party in many situations. The Project should anticipate land acquisition processes and where possible the client should get involved in the resettlement activities. Clients should consider using negotiated settlements.</p> <p>ESS5 requirements include the preparation and implementation of a resettlement framework or plan that will provide the basis for: (i) general requirements such as eligibility classification, project design, compensation and benefits for affected persons, community engagement, grievance mechanism, planning and implementation; (ii) physical and economic displacement; (iii) collaboration with other responsible agencies or subnational jurisdictions; and (iv) technical and financial assistance.</p> <p><u>Turkish EIA Regulation</u>  The EIA discusses the land acquisition process in Türkiye and but there is no discussion regarding Affected Persons and resettlement activities and impacts.</p>	<p>The developer is not responsible for the acquisition of land, however, it should engage with the Government to understand the acquisition process and the plans for resettlement. If the Government does not have an acquisition and resettlement action plan (RAP) then one should be prepared and implemented in conjunction with the external communication and stakeholder engagement plans.</p>
<b>ESS6</b> <b>Biodiversity Conservation and Sustainable Management of Living Natural Resources</b>	<p>ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources, including inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between</p>	<p><u>World Bank’s ESF</u>  The environmental and social assessment as set out in ESS1 will consider direct, indirect, and cumulative project-related impacts on habitats and the biodiversity they support. This assessment will consider threats to biodiversity, for example, habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take, as well as projected climate change impacts. It will determine the significance of biodiversity or habitats based on their vulnerability and irreplaceability at a global, regional, or national level and will also take into account the differing values attached to biodiversity and habitats by project-affected parties and other interested parties. The Borrower will avoid adverse</p>	<p>Robust sampling methodologies and plans should be prepared to inform surveys for all identified habitats and species to ensure that robust baseline data is obtained to inform the assessment of potential impacts, mitigation and compensation strategies.</p>
	<p>species, and of ecosystems. The objectives of ESS6 are as follows:</p> <ul style="list-style-type: none"> <li>• To protect and conserve biodiversity and habitats.</li> <li>• To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.</li> <li>• To promote the sustainable management of living natural resources.</li> <li>• To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.</li> </ul>	<p>impacts on biodiversity and habitats. When avoidance of adverse impacts is not possible, the Borrower will implement measures to minimize adverse impacts and restore biodiversity in accordance with the mitigation hierarchy provided in ESS1 and with the requirements of this ESS. The Borrower will ensure that competent biodiversity expertise is utilized to conduct the environmental and social assessment and the verification of the effectiveness and feasibility of mitigation measures. Where significant risks and adverse impacts on biodiversity have been identified, the Borrower will develop and implement a Biodiversity Management Plan.</p> <p><u>Turkish EIA Regulation</u>  The EIA has provided inadequate baseline data regarding project biodiversity and natural habitats and the potential impacts associated with the project during construction and operation. The EIA reports that ecological species and habitat evaluations were undertaken through habitat evaluation and literature review.</p>	

<b>ESS10</b> <b>Stakeholder Engagement and Information Disclosure</b>	<p>This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. The objectives of ESS10 are as follows:</p> <ul style="list-style-type: none"> <li>• To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project affected parties.</li> <li>• To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.</li> <li>• To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.</li> <li>• To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible, and appropriate manner and format.</li> <li>• To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow Borrowers to respond to and manage such grievances.</li> </ul>	<p><u>World Bank's ESF</u>  Borrowers will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a time frame that enables meaningful consultations with stakeholders on project design. The nature, scope, and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts. The process of stakeholder engagement will involve the following: (i) stakeholder identification and analysis; (ii) planning how the engagement with stakeholders will take place; (iii) disclosure of information; (iv) consultation with stakeholders; (v) addressing and responding to grievances; and (vi) reporting to stakeholders.  For all Category A and B subprojects proposed for WB funding, the borrower will consult and consider the views of the project affected groups and non-governmental organizations regarding the environmental impacts of the subproject during the EA process.</p> <p><u>Turkish EIA Regulation</u>  The EIA reports that a single, formal, information disclosure exercise has been carried out regarding the project. This occurred at the start of the EIA process. No further information disclosure activities have been undertaken prior to the EIA report being finalized. The EIA does not describe any stakeholder engagement and therefore it is assumed that none has been undertaken.  For the projects included in the list of Annex-I, which therefore require the preparation of an EIA Report, the public information and participation meeting, whose place and date is decided by the Provincial Directorate of Environment, Urbanization and Climate Change, is held not later than 10 days prior to the meeting by disclosing it publicly in local and national newspapers. No public information and participation meeting is held for the projects included in the list of Annex-II.</p> <p><u>Public Information and Participation Meeting:</u>  In the Turkish EIA Regulation, public consultation is required for the purpose of "preliminary scope determination" only for projects requiring EIA, and for this purpose, only the environmental assessment must be announced with its justification. However, ESS 10 does not specify how many times and by what method public consultation and public information will be carried out, instead it is requested to adopt a continuous stakeholder participation approach throughout the project life cycle, which will be decided in proportion to the nature, scale and impact size of the project.</p>	<p>A stakeholder engagement plan should be prepared to address project start up, construction and operation. This should be a two way process of giving and receiving information. It should involve the local, regional and national communities as applicable to the project.</p>
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#### ANNEX-3- MAPS



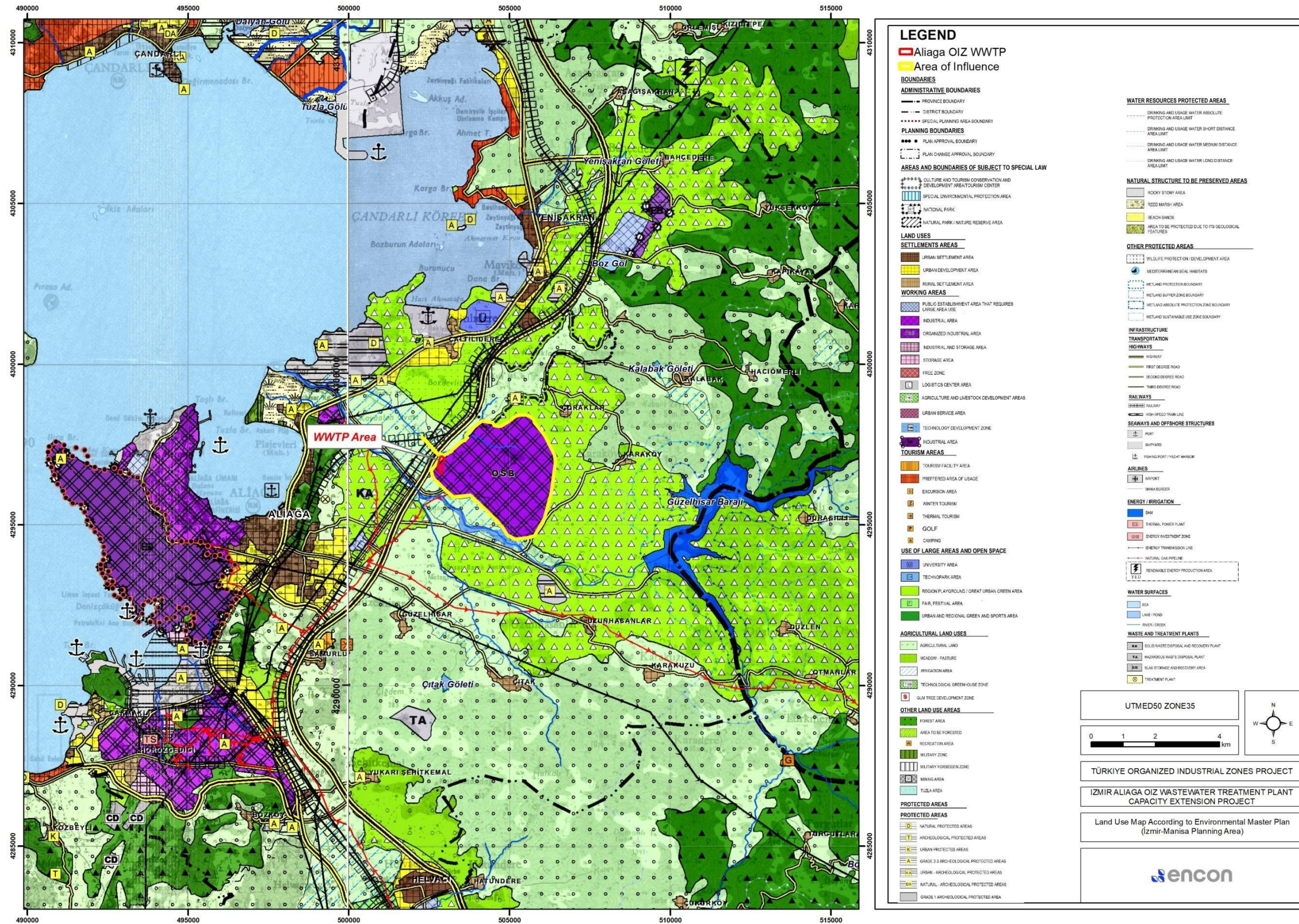


Figure- 4 Land Use Map According to Environmental Master Plan





Figure- 5 Digital Elevation Model Map of Project Area and Its Vicinity



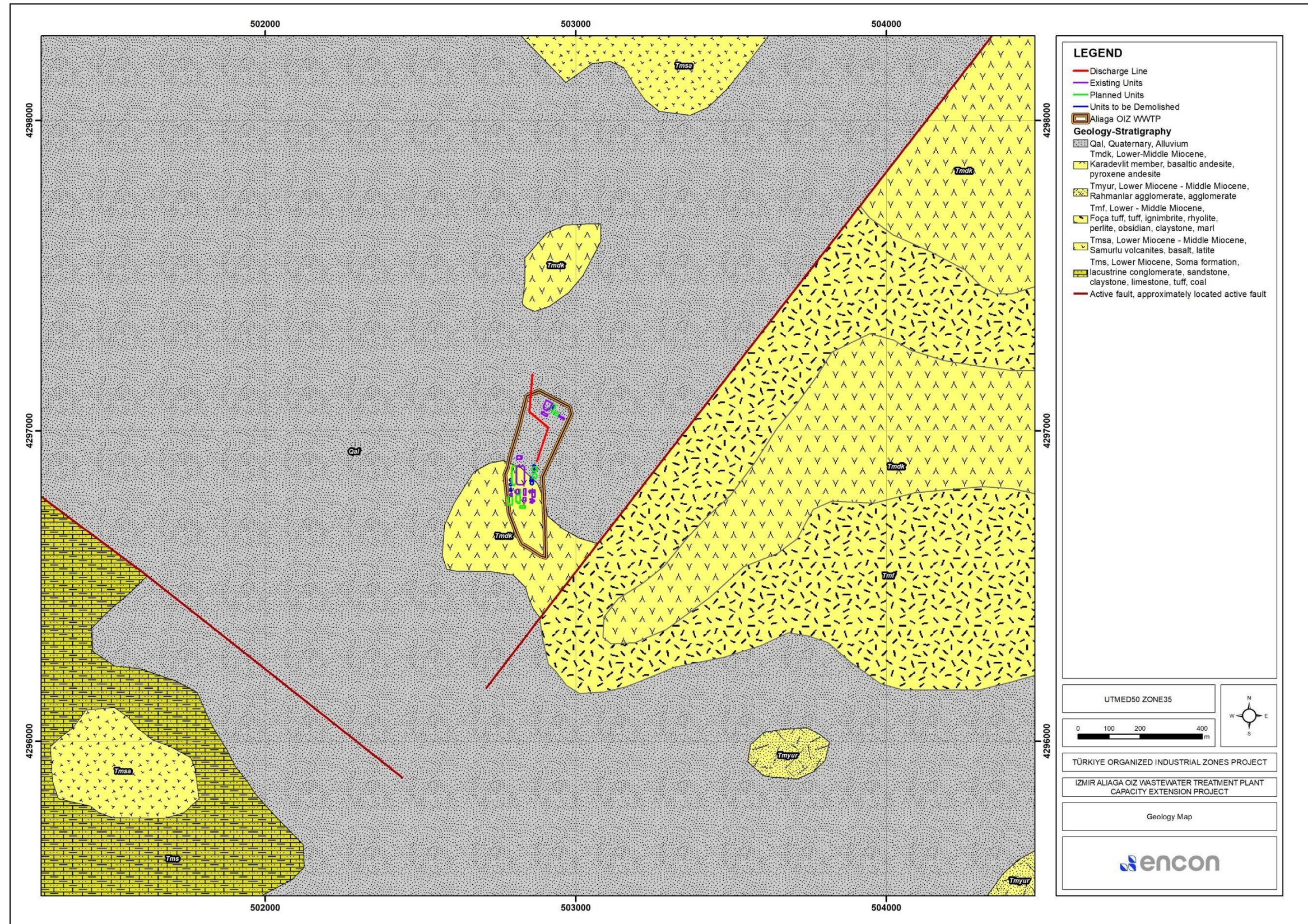
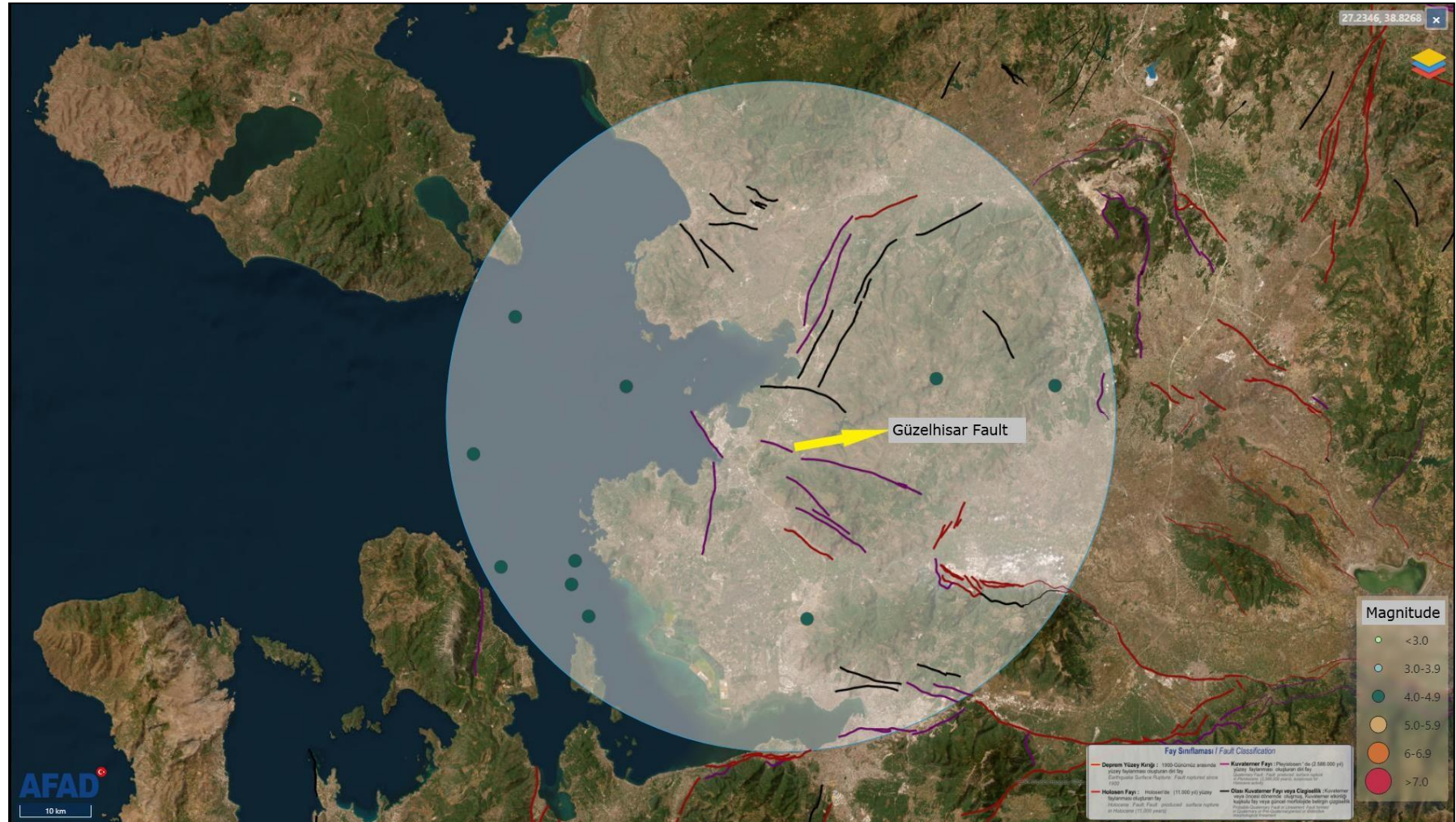


Figure- 7 Geology Map of the Project Area



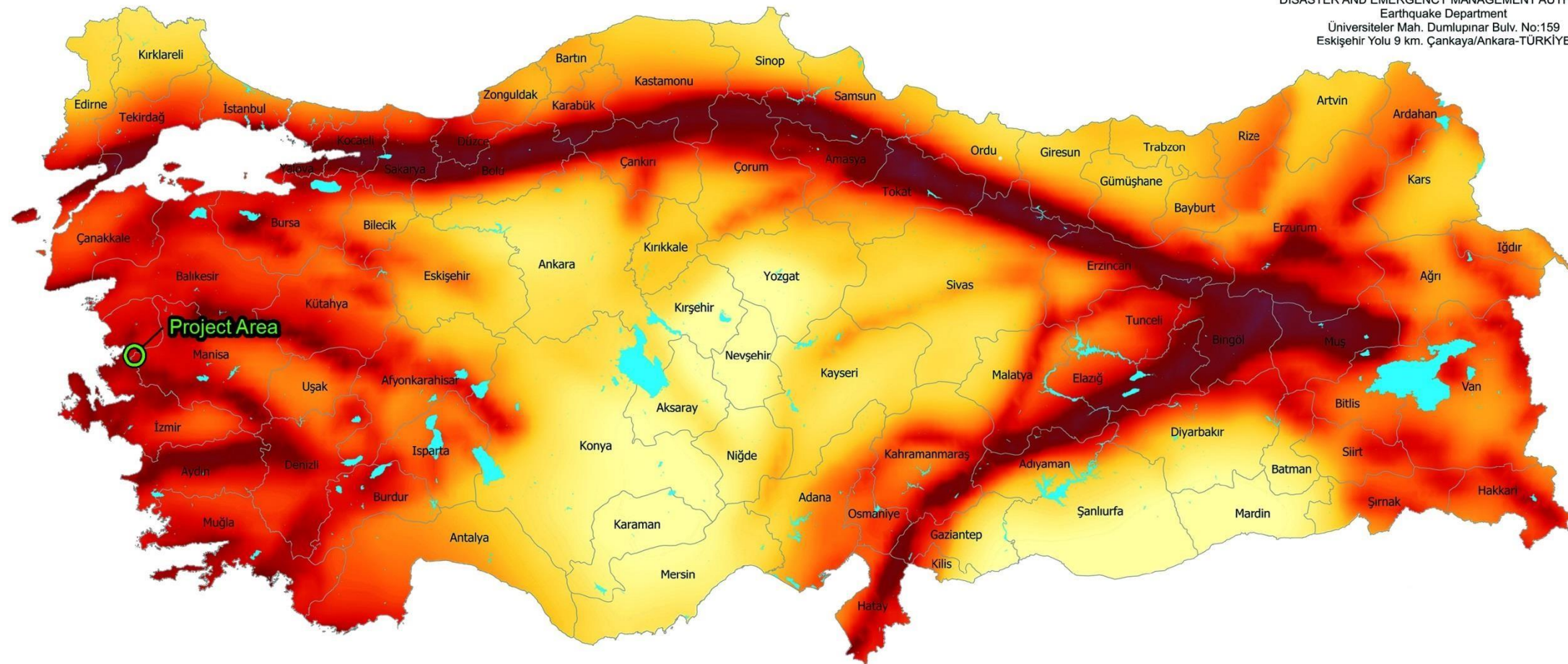
**Figure- 8 Earthquakes with  $M > 4$  with a Radius of 60 km and the Center Point of which is the Project Area**

# EARTHQUAKE HAZARD MAP OF TURKEY



afadbaskanlik

DISASTER AND EMERGENCY MANAGEMENT AUTHORITY  
Earthquake Department  
Üniversiteler Mah. Dumlupınar Bulv. No:159  
Eskişehir Yolu 9 km. Çankaya/Ankara-TÜRKİYE



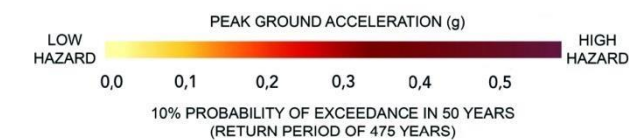
This map is a product of National Earthquake Research Fund supported R&D Project namely "Revision of Turkish Seismic Hazard Map"

This map is prepared considering soil condition ( $V_s$ )<sub>30</sub> = 760m/s and doesn't include the hazards caused by local soil conditions like liquefaction, ground amplification, subsidence, etc.

Referencing: AFAD, 2018. Earthquake Hazard Map of Turkey.

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## EXPLANATIONS



Lake

Administrative Boundary

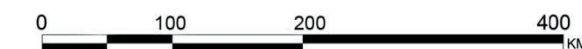


Figure- 9 Earthquake Hazard Map of Türkiye



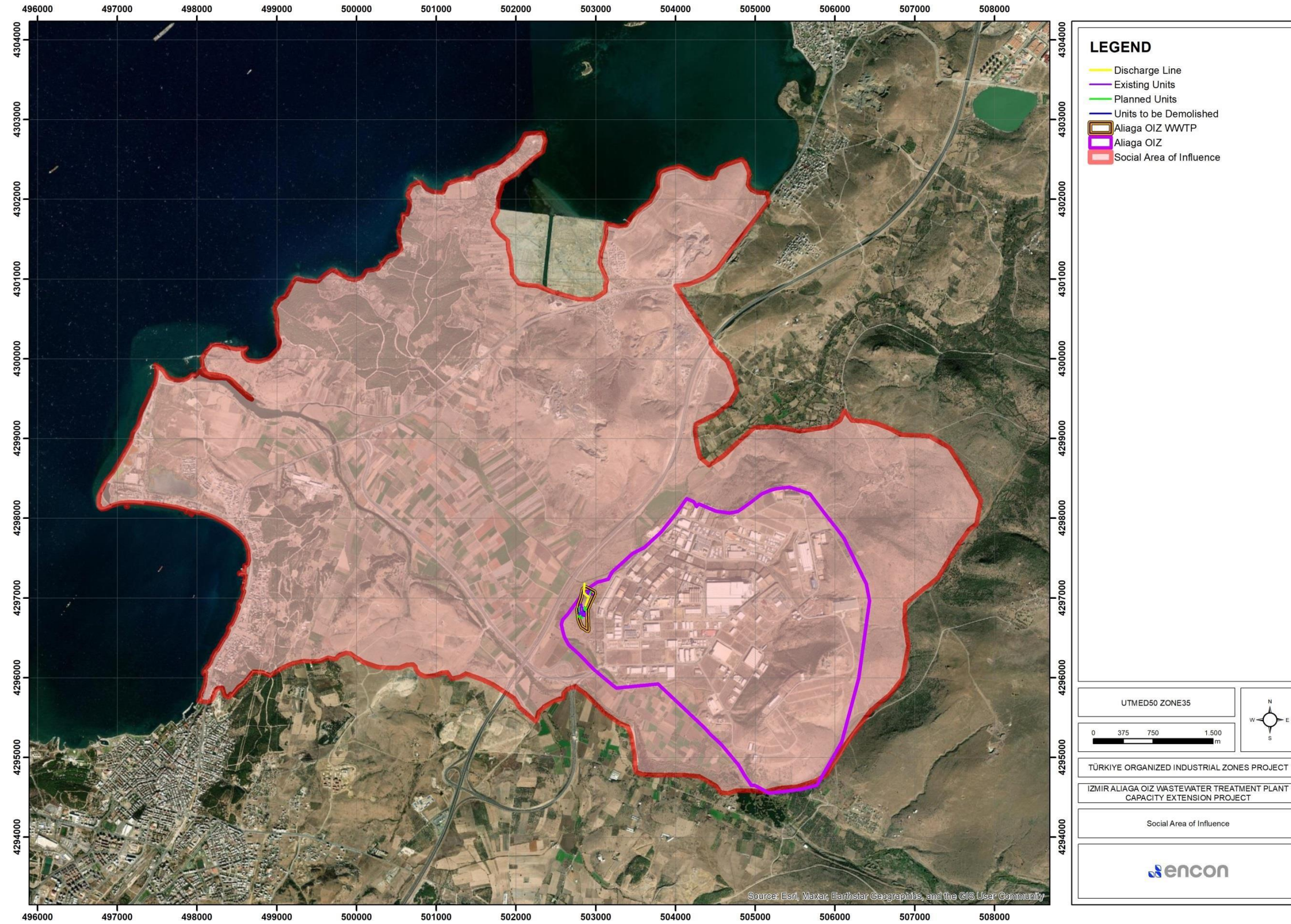


Figure- 10 Social Aol Map

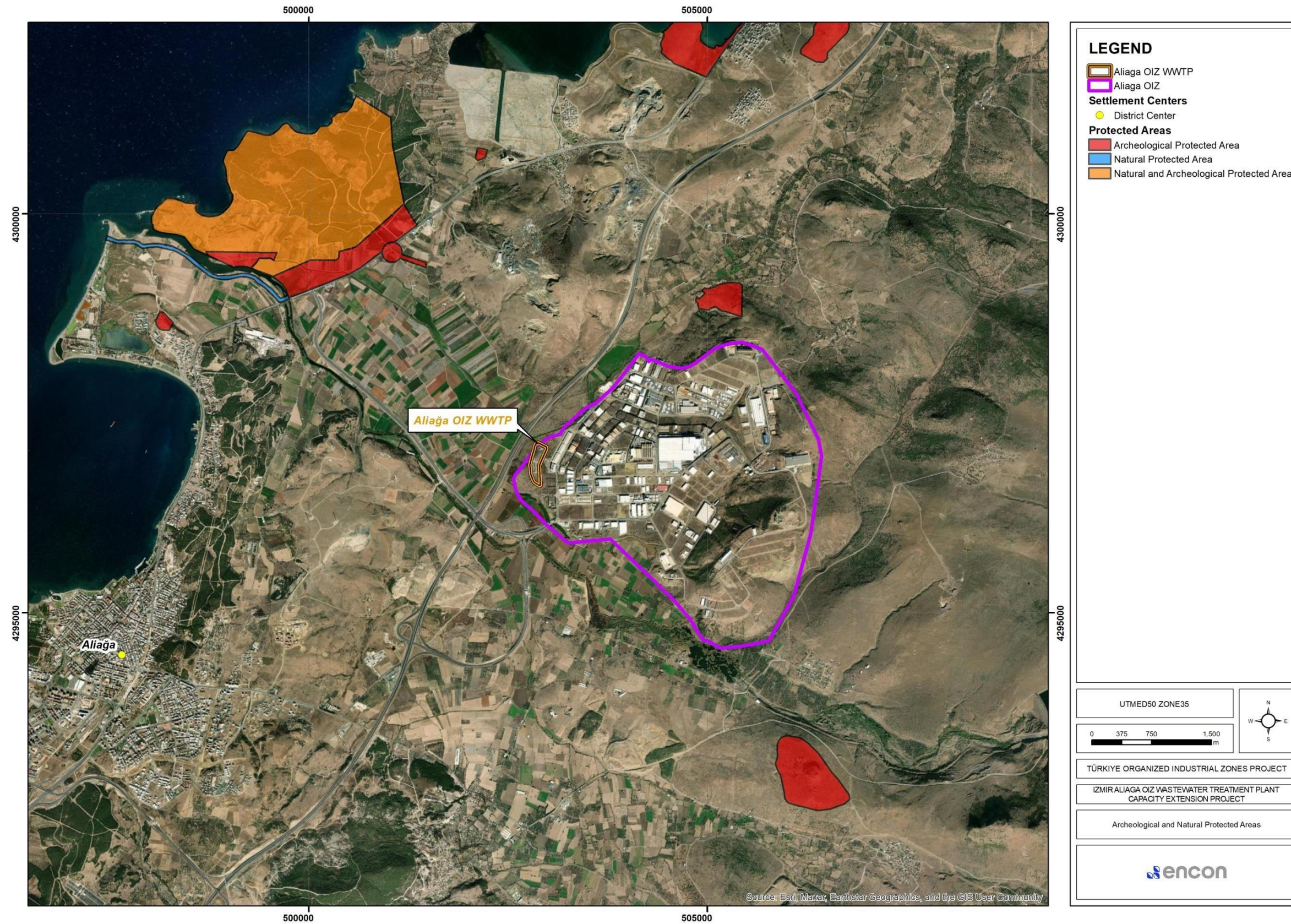


Figure- 11 Archeological and Natural Protected Areas

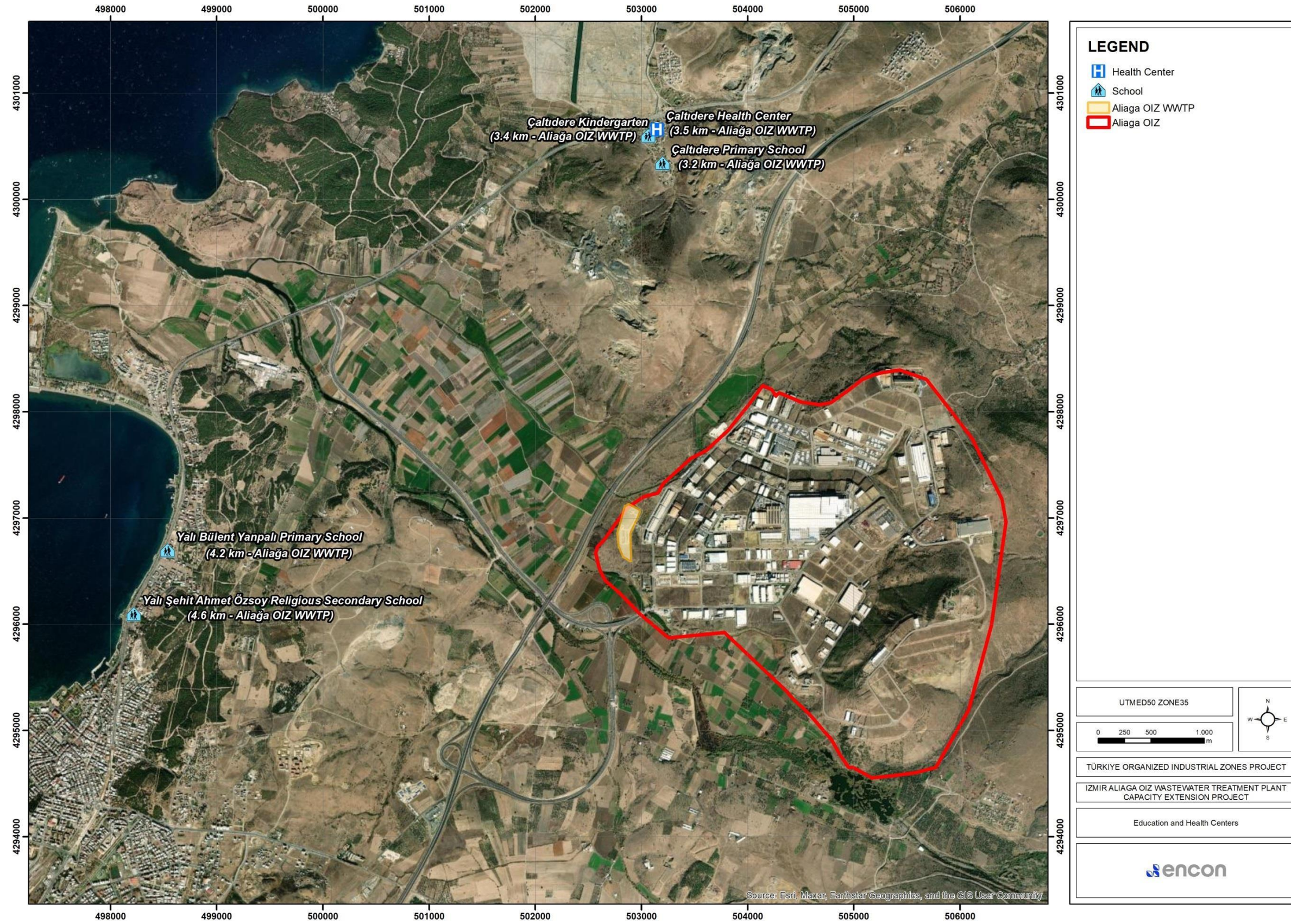


Figure- 12 Education and Health Center Map

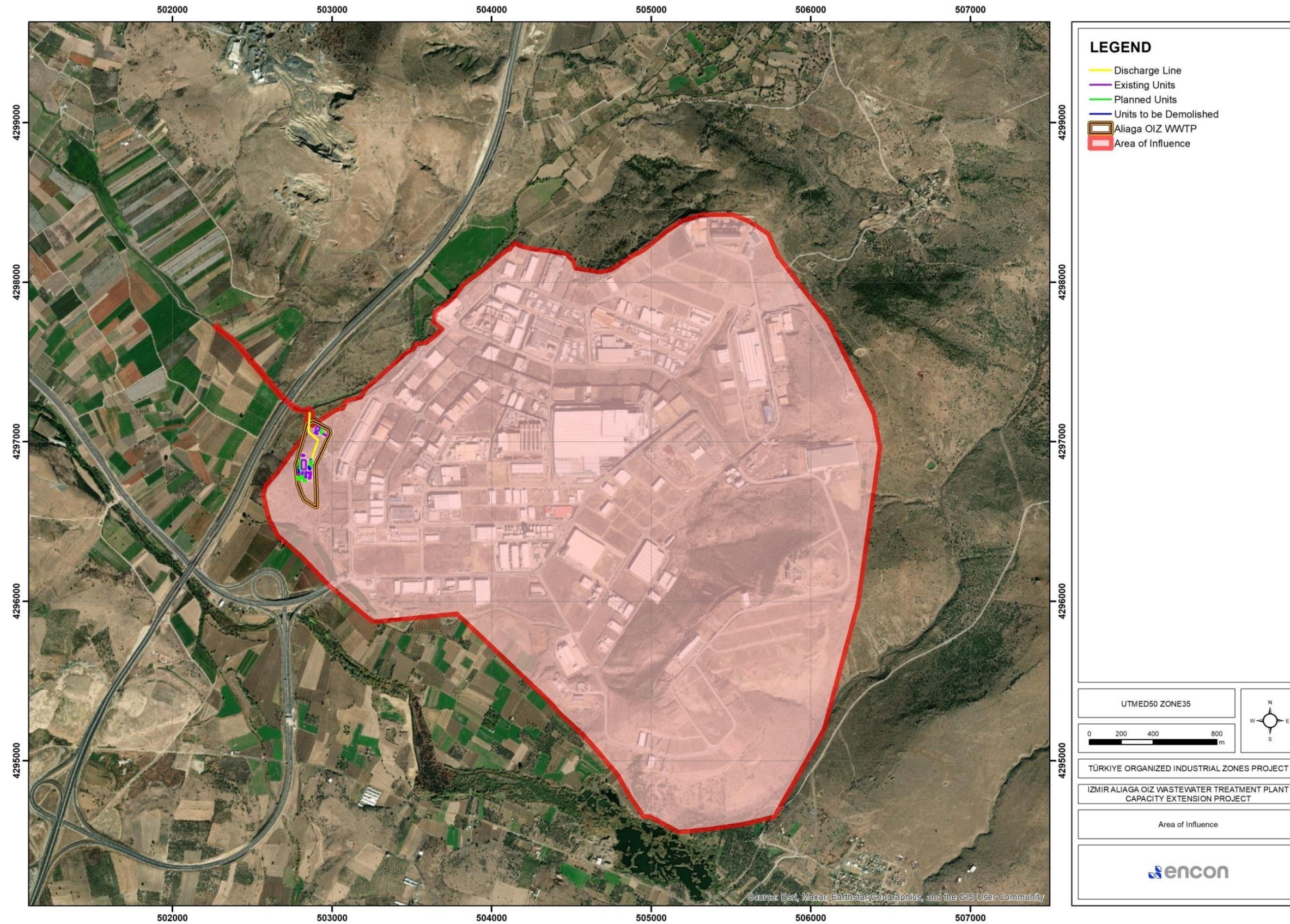


Figure- 13 Area of Influence

## ANNEX-4-ECOLOGY AND BIODIVERSITY

### Ecology and Biodiversity

Site studies of the biological environment of this Project Area and the potential impact area were carried out on 13 September 2023. The studies covered terrestrial and aquatic environments, including flora and fauna species, vegetation and habitat descriptions.

The distribution of flora and fauna species in the ALOIZ WWTP Project Area and their biological activities has been determined through the studies carried out with this ESMP report.

Within the scope of biodiversity baseline detection studies, the WWTP area and its immediate surroundings have been researched. Research has been conducted to assess terrestrial flora species and vegetation within the footprint of project components and associated facilities.

The Biodiversity Study Area, devised based on expert opinions, was chosen to align with the few homogenous fauna components in the project area that have adapted to anthropogenic influences.

### Methodologies

#### *Flora*

The species observed in the area were recorded. The data obtained from previous floristic studies in the area and literature review were used in the preparation of floristic lists. The results are presented in Table- 7

The families were listed in the floristic lists in alphabetical order. The Turkish names of each plant species were also included in the list. For the Turkish names of plants, "Türkçe Bitki Adları Sözlüğü" (Dictionary of Turkish Plant Names) was used (Baytop, T., 1997). In addition, the phytogeography of the plant, its existence (or non-existence) in the area, its abundance, its endemism and IUCN categories (Ekim et al., 2000), the habitat types where it grows and the altitudes where it is observed were also included in the list. The list of plant species in the Project Area and its surroundings is presented in Table- 7. Definitions of abbreviations and symbols are also given in the legend.

The floristic list is prepared according to the phylogenetic order of Turkish flora as gymnosperms (Gymnospermae) and angiosperms (Angiospermae). The families under these groups have also been presented in the phylogenetic order of Turkish Flora. The names of the species were given with their authors and their local names, if any, phytogeographical areas, endemic species, threat categories for endemic and rare species, altitudes where they are observed, and their habitats and abundance were listed respectively.

#### *Fauna*

The basic principles and methods underlying the faunistic studies are summarised below. The faunistic studies involved direct field observations, surveys and literature reviews within the Project Area and its surroundings to determine the faunal components.

Faunistic fieldwork was carried out in the Project Area and its surroundings. To identify species and their preferred habitat, nests-offspring-footprints (especially for birds and mammals), droppings-faeces-food remains (especially for mammals), skin-horn-shield (e.g. carapax), and footprints were examined.



Species were not hunted, collected or killed during the identification process. Direct observation with advanced optical equipment was used to identify mammals and birds. To identify bird species, transect and point counting methods were used instead of netting and mantrap methods, and faunistic observations were made on foot and/or by vehicle.

Data on biotopes, biogenetic reserves, endemic species, threatened species and wildlife habitats were also collected and evaluated. The conservation status of the fauna components was determined according to the Turkish Red Lists, Bern Convention, CITES and IUCN European Red Lists.

The fauna inventory includes mammals, birds, reptiles and amphibians. The scientific name, habitat, endemism, population density, risk category, status in the Bern Convention and possible risks for each species are also included in this study. All this information is given in Table- 8.

### **Aquatic Biodiversity**

An aquatic habitat identification and assessment study was conducted in Kunduz Creek, around the planned discharge point and existing WWTP discharge point. In this context, a biodiversity expert conducted a comprehensive examination, which included a literature review, fieldwork, and survey studies.

Following the field studies to determine the state of the aquatic habitat, the species that inhabit Kunduz Creek were identified through field observations, surveys, and a review of existing literature.

Fish species were identified as an indicator group primarily affected by the construction activities. The impact of WWTP effluent on aquatic ecosystems and the necessary mitigation measures were also assessed.

In this regard, the following studies were conducted as part of the aquatic research:

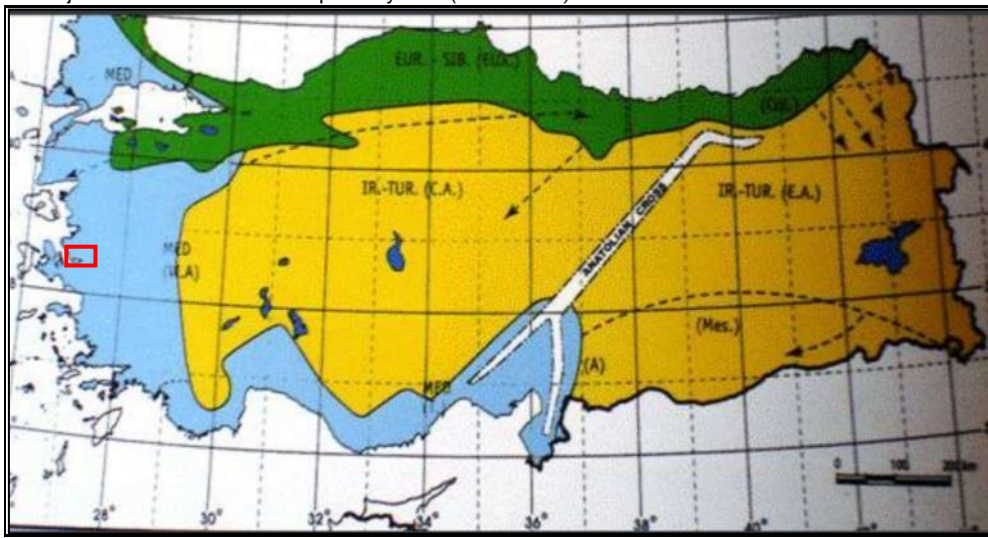
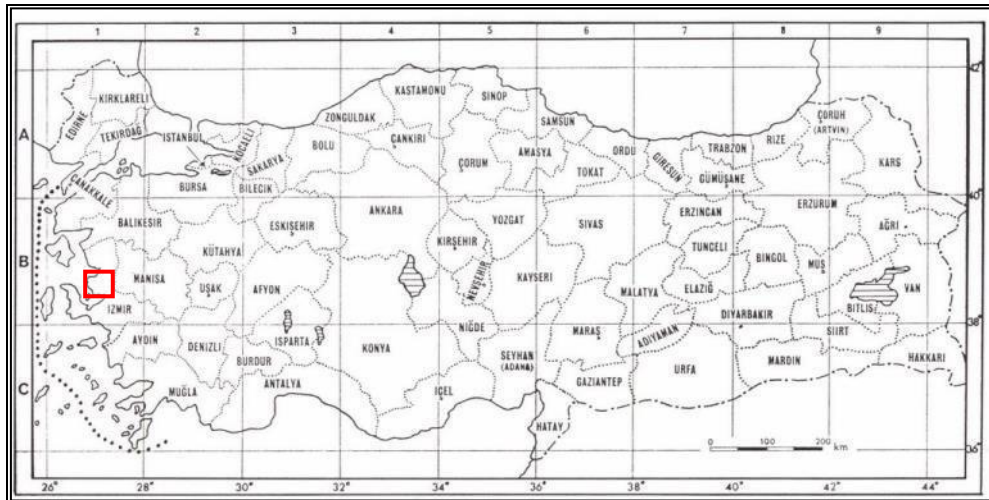
- Assessment of the national and international protection status and endemism of aquatic species.
- Evaluate the project's impact on the aquatic environment and the proposed mitigation measures.

### ***Terrestrial Flora and Habitats***

#### ***Habitat Classification of the Project Area***

The Project Area is in the Mediterranean Phytogeographical Region, as seen in Figure- 14. The Project Area is located in the B1 grid in the grid square system of the flora of Türkiye.





b. Phytogeographical Regions Map in Türkiye ([www.ktu.edu.tr](http://www.ktu.edu.tr))  
Davis P.H., Harper P.C. and Hege I.C. (eds.), 1971. Plant Life of South-West Asia. The Botanical Society of Edinburgh  
EUR.-SIB. (EUX): Europa-Siberian Region (Euxin sub-region); Col.: Colsic sector of the Euxine sub-region  
MED.: Mediterranean Region (Eastern Mediterranean sub-region); W.A: Western Anatolia region; T.: Taurus Region;  
A.: Amanus Region  
IR.-TUR.: Iran-Turanian Region; C.A.: Central Anatolia Region; E.A.: Eastern Anatolia Region (Mes: Mesopotamia) X:  
Central European/Balkan subregion of possibly Euro-Siberian region (mt): Mountain

**Figure- 14 Bioecological Location of the Project Area**

According to WB ESS6, natural habitat comprises viable assemblages of plant and/or animal species of largely native origin and/or where human activity has not essentially modified an area's primary ecological functions and species composition. Modified habitats may contain many plant and/or animal species of non-native origin and/or where human activity has substantially modified an area's primary ecological functions and species composition. Modified habitats may include areas managed for agriculture, forest plantations, reclaimed coastal zones, and reclaimed wetlands. Modified habitats have been determined in the Project Area.

The Project Area is located adjacent to ALOIZ and has been subjected to various human-induced impacts from industrial and agricultural activities. As a result, it has been entirely transformed into an anthropogenic area, losing its natural or semi-natural habitat characteristics. There is no area with natural habitat status adjacent to the project area, but there are agricultural and industrial areas.

In addition, it was determined that a plantation has been done within the OIZ with species suitable for the vegetation of the region.

Observations were also made in Kunduz Creek, where the planned WWTP will discharge. Riparian vegetation has been observed around the stream under anthropogenic influence.

The habitat types within the Study Area are determined with desktop studies using satellite imagery according to EUNIS Habitat Classifications. After the field studies, expert observations have been verified, and habitat types have been revised.

Photographs of the EUNIS habitat types identified within the Project Area can be found in Figure- 15., while the EUNIS habitat types map is shown in Figure- 16. The EUNIS habitat types present in the Biodiversity Study Area, along with their explanations, are detailed below:

- E5.1: Anthropogenic herb stands
- J2.3: Rural industrial and commercial sites still in active use
- X15: Land sparsely wooded with coniferous trees



The Project Area (E5.1) and plantation trees around it (X15)



Industrial area (J2.3)



Agricultural areas and riparian vegetation around the Project Area

**Figure- 15 Photographs of habitat types of the Project Area**

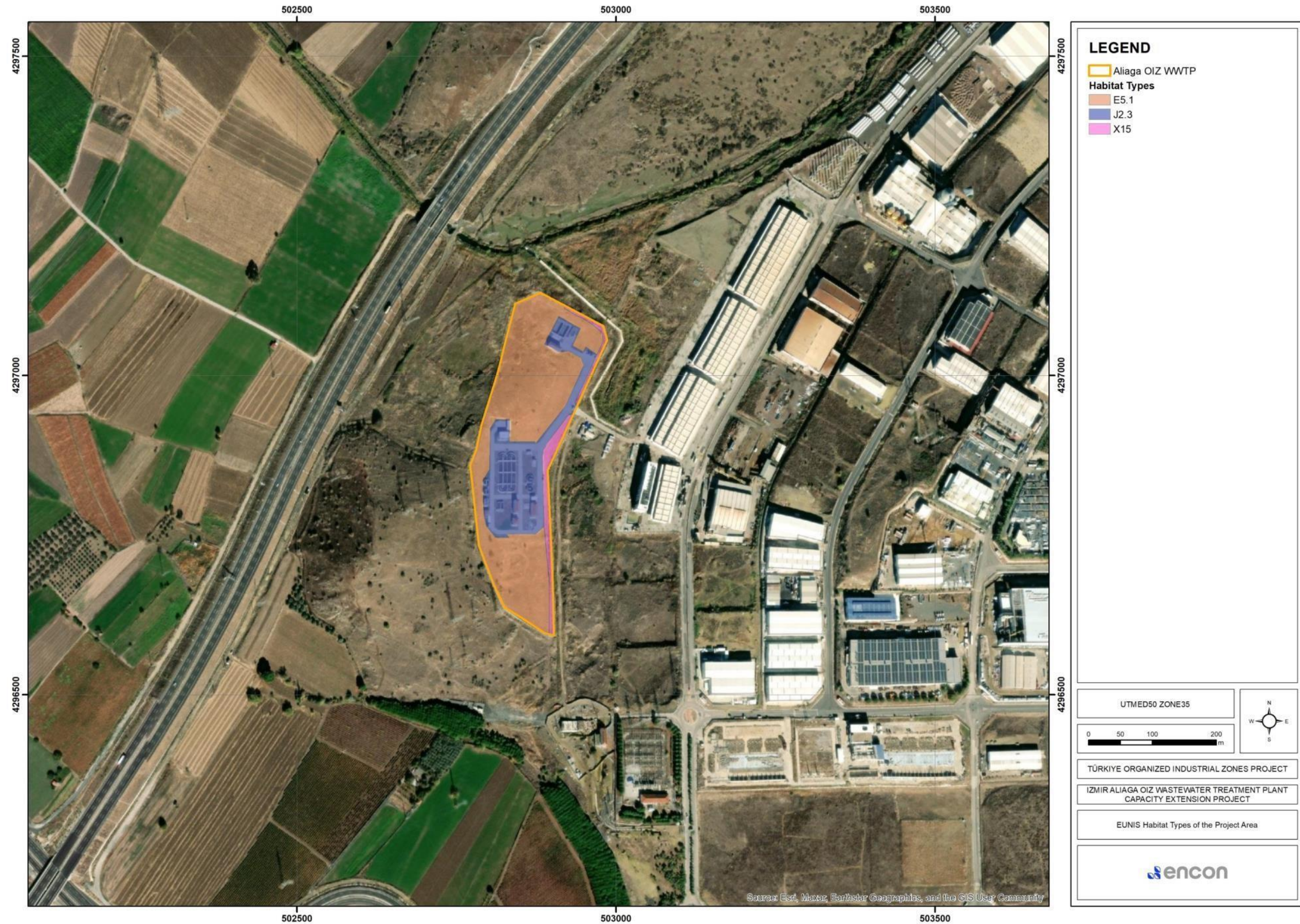


Figure- 16 EUNIS Habitat Types of the Project Area



### *Terrestrial Flora*

The Project Area is located in the Mediterranean floristic region. After conducting field studies, 21 flora species and subspecies belonging to nine families were identified. The distribution of these flora species based on their phytogeographic regions is as follows:

Mediterranean Region: 8 species; 38%

Common: 13 species; 62%

The Project Area consists of modified and ruderal vegetation. Thus, it has been determined that the flora species consist of herbaceous plants and widely distributed species. According to field studies and literature reviews, the flora species in and around the Project Area are presented in Table-7.

None of the 21 identified flora species is endemic. In addition, there are no protected flora species as per the BERN and CITES conventions.





Table- 7 Flora Species in and around the Project Area

FAMILY	SPECIES	P.G.R	Endemism	IUCN	BERN	CITES	Resource
					Anx1		
BORAGINACEAE	<i>Echium italicum L.</i>	Mediterranean	-	-	-	-	O
POACEA	<i>Hordeum murinum L.</i>	Common	-	LC	-	-	O,L
	<i>Bromus sterilis L.</i>	Common	-	-	-	-	O,L
	<i>Cynodon dactylon (L.) Pers.</i>	Common	-		-	-	O
	<i>Stipa bromoides (L.) Dörf.</i>	Mediterranean	-	LC	-	-	O,L
	<i>Poa bulbosa L.</i>	Common	-	-	-	-	O
CARYOPHYLLACEAE	<i>Saponaria officinalis L.</i>	Common	-	LC	-	-	O,L
ASTERACEAE	<i>Anthemis chia L.</i>	Mediterranean	-	-	-	-	O
	<i>Crepis foetida L.</i>	Common	-	-	-	-	O,L
	<i>Inula graveolens (L.) Desf.</i>	Mediterranean	-	-	-	-	O,L
	<i>Inula viscosa (L.) Aiton</i>	Mediterranean	-	-	-	-	O,L
	<i>Centaurea solstitialis L.</i>	Common	-	-	-	-	O
	<i>Picnomon acarna (L.) Cass.</i>	Mediterranean	-	-	-	-	O,L
	<i>Sonchus oleraceus L.</i>	Common	-	-	-	-	O
	<i>Onopordum illyricum L.</i>	Mediterranean	-	-	-	-	O,L
CYPERACEAE	<i>Carex distachya Desf.</i>	Common	-	LC	-	-	O,L
OLEACEAE	<i>Phillyrea latifolia L.</i>	Mediterranean	-	LC	-	-	O
CUPRESSACEAE	<i>Juniperus oxycedrus L.</i>	Common	-	LC	-	-	O,L
	<i>Juniperus sabina L.</i>	Common	-	LC	-	-	O,L
BRASSICACEAE	<i>Sisymbrium altissimum L.</i>	Common	-	-	-	-	O,L
PLANTAGINACEAE	<i>Plantago bellardii All.</i>	Common	-	-	-	-	O,L

Resource  
O: Direct Observation on site  
L: Literature  
A: Public Survey  
LC: Least Concern  
"-": It is not included in the protection categories





## ***Terrestrial Fauna***

A total of six species of mammals, 16 species of birds, six species of reptiles and two species of amphibians are identified in the study area based on field observation, communication with local people and literature review. The complete list of all fauna is given in Table- 8, explaining the symbols and abbreviations used in the legend.

### ***Reptiles and Amphibians***

A total of six reptile species and two amphibian species have been identified in the Study Area. *Testudo graeca* is in the "Vulnerable (VU)" category, but it is a common and widespread species in Türkiye. Lizard species have been identified through direct observation, snake species' nests have been identified, and species have been confirmed through literature records.

The amphibians observed in the study area have been detected near Kunduz Creek. All the reptile and amphibian species identified in the study area are widespread throughout Türkiye and the Aegean region.

### ***Birds***

The habitats, habitat functions, and status of the 16 bird species observed in the Study Area. Of these, 11 (69%) are non-passerines, and five (31%) are passerines. The composition of bird species in the study area is relatively homogeneous, ranging from raptors to small passerines, due to the general availability of suitable foraging habitats. There are no endemic or protected bird species. The bird species observed in the project area are landscape species that have adapted to urban life.

### ***Mammals***

A total of six mammals belonging to six families were identified in the Study Area. Rodenta nests were directly observed.

Other mammals were not directly observed but were reported by residents, and their presence was confirmed through animal tracks and signs. Literature also supports the existence of these species in the area.



Table- 8 Fauna Species in and around the Project Area

FAUNA GROUPS	FAMILY	SPECIES	English Name	END.	IUCN	BERN	CITES	PROJECT AREA		RESOURCES		
								Inside	Outside	O	L	A
AMPHIBIAN	BUFONIDAE	<i>Bufo bufo</i>	Common Toad	-	LC	Ann -2	-	-	X	X	X	-
	RANIDAE	<i>Rana macrocnemis</i>	Brusa Frog	-	LC	Ann -3	-	-	X	-	X	X
REPTILIAN	TESDUDINIDAE	<i>Testudo graeca</i>	Spur-thighed Tortoise	-	VU	Ann -2	App-II	-	X	X	X	X
	LACERTIDAE	<i>Ophisops elegans</i>	Snake-eyed lizard	-	LC	Ann -2	-	X	X	X	X	X
	SCINCIDAE	<i>Ablepharus kitaibelii</i>	Juniper Skink	-	LC	Ann -2	-	X	X	X	X	X
	COLUBRIDAE	<i>Natrix natrix</i>	Grass snake	-	LC	Ann -3	-	-	X	-	X	X
		<i>Zamenis situla</i>		-	LC	Ann -3	-	X	X	X	X	X
		<i>Eirenis modestus</i>	Ring-Headed Dwarf Snake	-	LC	Ann -3	-	-	X	-	X	-
AVES	CICONIIDAE	<i>Ciconia ciconia</i>	White stork	-	LC	Ann -2	-	-	X	X	X	X
	ACCIPITRIDAE	<i>Circus pygargus</i>	Montagu's Harrier	-	LC	Ann -2	App-II	-	X	-	X	X
		<i>Buteo rufinus</i>	Long-legged Buzzard	-	LC	Ann -2	App-II	-	X	-	X	-
	COLUMBIDAE	<i>Columba livia</i>	Rock pigeon	-	LC	Ann -3	-	X	X	X	X	-
		<i>Streptopelia decaocto</i>	Eurasian Collared-dove	-	LC	Ann -3	-	X	X	X	X	-
	PHASIANIDAE	<i>Alectoris chukar</i>	Chukar	-	LC	Ann -3	-	-	X	-	X	-
	ALAUDIDAE	<i>Galerida cristata</i>	Crested lark	-	LC	Ann -3	App-III	-	X	-	X	-
	HIRUNDINIDAE	<i>Hirundo rustica</i>	Barn swallow	-	LC	Ann -2	-	X	X	X	X	-
	CORVIDAE	<i>Pica pica</i>	Magpie	-	LC	Ann -2	-	X	X	X	X	-
		<i>Corvus corone</i>	Carrion Crow	-	LC	Ann -3	-	X	X	X	X	X
		<i>Corvus monedula</i>	Eurasian Jackdaw	-	LC	Ann -3	-	X	X	X	X	X
	EMBERIZIDAE	<i>Emberiza schoeniclus</i>	Reed Bunting	-	LC	Ann -2	-	-	X	-	X	X
		<i>Emberiza melanocephala</i>	Black-headed Bunting	-	LC	Ann -2	-	X	X	-	X	X
	PASSERIDAE	<i>Passer domesticus</i>	House sparrow	-	LC	-	-	X	X	X	X	-
		<i>Passer hispaniolensis</i>	Spanish Sparrow	-	LC	Ann -3	-	-	X	X	X	X
		<i>Locustella luscinioides</i>	Savi's Warbler	-	LC	Ann -3	-	X	X	X	X	X
MAMMALIAN	ERENACIDAE	<i>Erinaceus concolor</i>	Hedgehog	-	LC	Ann -3	-	X	X	X	X	X
	CRICETIDAE	<i>Microtus mystacinus</i>		-	LC	-	-	-	X	-	X	-
	MURIDAE	<i>Mus musculus</i>	House Mouse	-		-	-	X	X	X	X	X
	LEPORIDAE	<i>Lepus europaeus</i>	European Hare	-	LC	-	-	-	X	-	X	X
	CANIDAE	<i>Vulpes vulpes</i>	Red fox	-	LC	-	App-III	-	X	-	X	X
	SUIDAE	<i>Sus scrofa</i>	Wild Boar	-	LC	Ann -3	-	-	X	-	X	X

Resource  
O: Direct Observation on site  
L: Literature  
A: Public Survey  
LC: Least Concern  
VU: Vulnerable





## Aquatic Biodiversity

In researching the aquatic environment of Kunduz Creek, the primary objective is to initially identify fish species, which are the indicator group most impacted by construction and operational activities.

Upstream and downstream of Kunduz Creek were visited within the scope of the field study, and it was seen that the creek has been polluted by other facilities that use this creek as a receiving body.

Riparian vegetation with anthropogenic effects has been observed extending along the creek.

In meetings with local people and stakeholders, it was stated that there are only carp fish species in the creek. According to literature studies, the fish species given in Table- 9 have been determined in the Güzelhisar Stream, where the Kunduz Creek meets. These species, not observed in Kunduz Creek, where the discharge will occur, inhabit the Güzelhisar Stream.

The fish species identified in the Güzelhisar Stream are mobile due to their feeding, migration, and breeding behaviors. They may be observed in the Kunduz Creek habitat, environmental and climatic changes, and ecological activities. Still, in the current situation, they do not inhabit this creek due to anthropogenic effects on the creek.

These fish species are not endemic or protected species. *Cyprinus carpio* is in the VU category by the IUCN but is a common species in Türkiye inland waters (see Figure- 17).

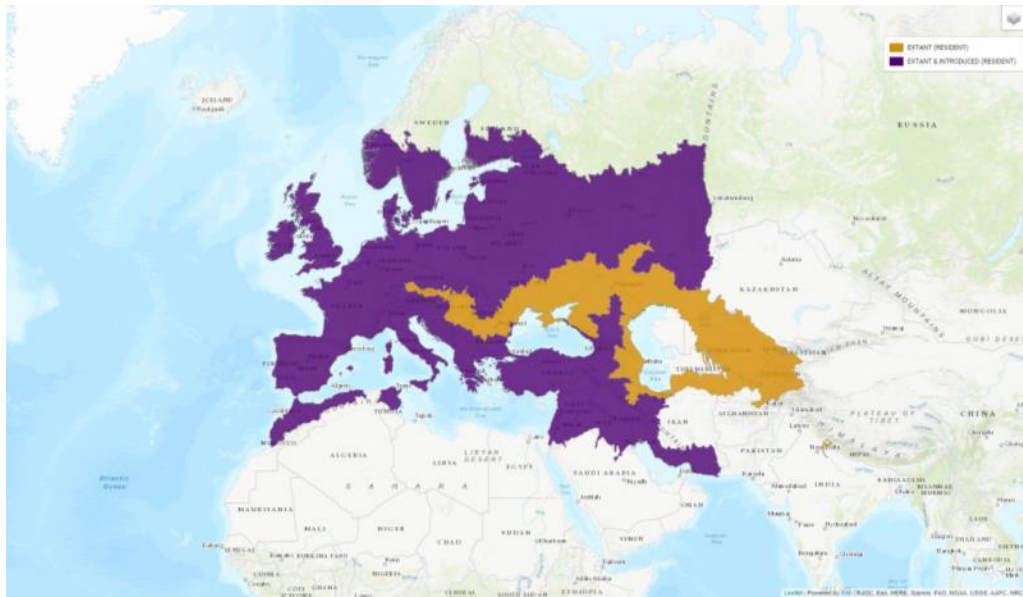


Figure- 17 IUCN Distribution Map of *Cyprinus carpio*

Table- 9 Possible Fish Species in Güzelhisar Stream

ORDER	FAMILY	SPECIES	ENGLISH NAME	IUCN
Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Eurasian Carp	VU
		<i>Carassius gibelio</i>	Prussian carp	NE
Mugiliformes	Mugilidae	<i>Mugil cephalus</i>	Flathead Mullet	LC

VU: Vulnerable  
NE: Not evaluated  
LC:Least Concern





## 179 **Protected Areas**

### *Nationally Protected Areas*

To identify and evaluate the protected areas within the Project Area and its immediate vicinity, desktop studies and literature research were carried out using the databases of the relevant institutions within the scope of the Project.

No National Parks, Nature Parks, Nature Monuments or Nature Reserve Areas defined in Articles 2 and 3 of the National Parks Law are in the Project Area. There are no Wildlife Protection Areas, Wildlife Development Areas and Wild Animal Nestling Areas determined by the Land Hunting Law in the Project Area.

Aliağa Plain, which has been determined as a large plain protection area, is approximately 1.5 km away from the OIZ.

According to the Regulation on Identification of Sensitive Water Bodies and the Areas Affecting These Water Bodies (Official Gazette No.29927 Date 23.12.2016), the region that includes the OIZ is defined as an urban sensitive area and nitrate-sensitive area region. Güzelhisar Stream, where Kunduz Creek meets, is defined as a sensitive water body and is approximately 4 km away from the Project Area.

### *Internationally Recognized Areas*

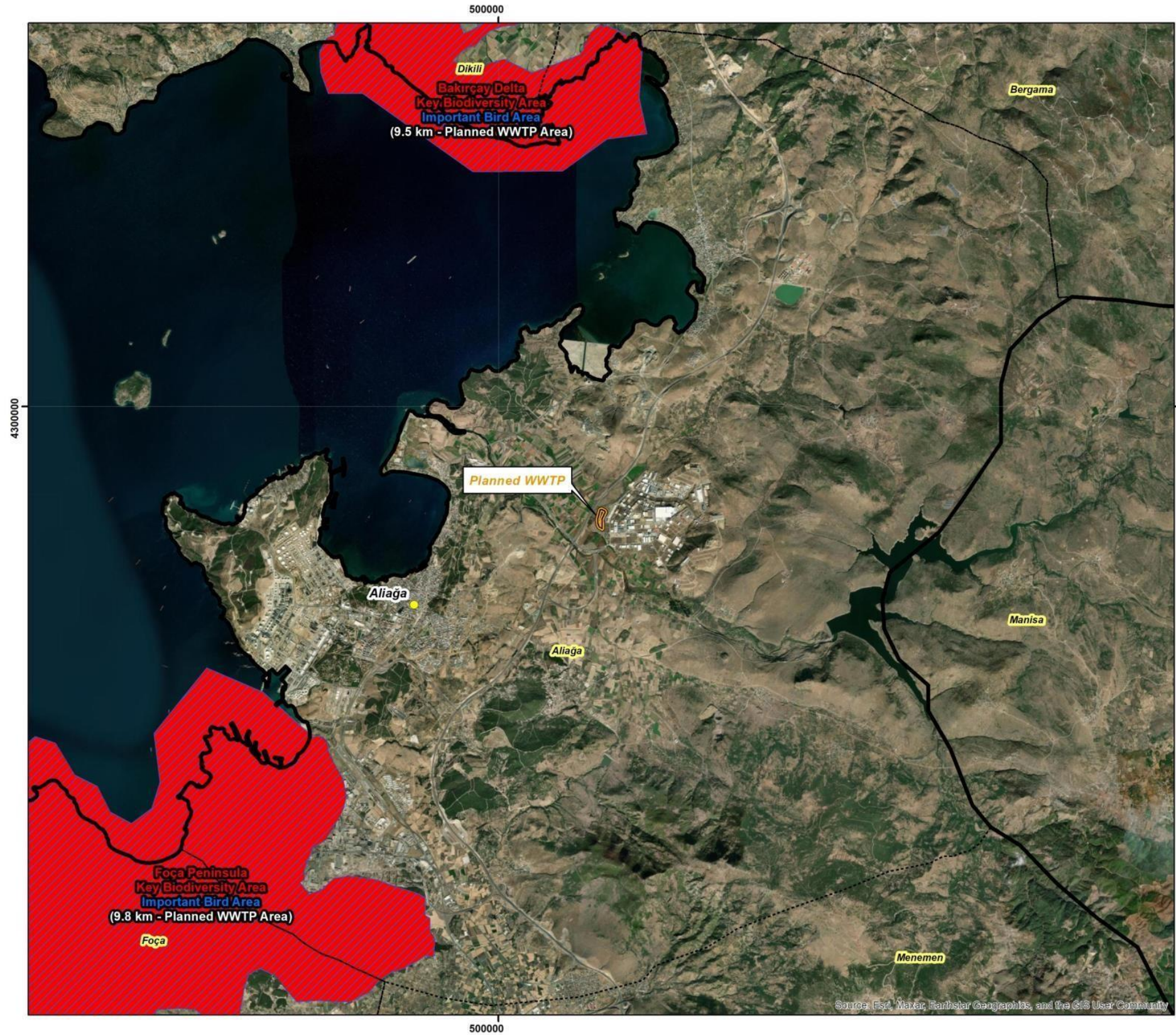
Internationally recognized areas exclusively defined according to WB ESS6 (2012) are UNESCO World Heritage Natural Sites, Biosphere Reserves, Ramsar Wetlands of International Importance, Key Biodiversity Areas (KBA), Important Bird Areas, and Alliance for Zero Extinction Sites.

Using up-to-date data, internationally recognized areas in and around the Project Area have been determined and mapped with their distances (see Figure- 18). Accordingly, the evaluation is as follows:

There are no internationally recognized areas in and around the Project Area. The closest recognized areas are as follows: Foça Peninsula KBA is located about 9.8 km south, and Bakırçay Delta KBA is located about 9.5 km north of the Project Area.

As a result, according to research conducted with current databases, there is no nationally protected or internationally recognized area in and around the Project Area.





## LEGEND

Aliaga OIZ WWTP

### Boundaries

Province Boundary

District Boundary

### Settlement Centers

District Center

### Protected Areas

Important Bird Areas (IBAs)

Key Biodiversity Areas (KBAs)

UTMED50 ZONE35

0 1 2 4 km



TÜRKİYE ORGANIZED INDUSTRIAL ZONES PROJECT

İZMİR ALIAGA OİZ WASTEWATER TREATMENT PLANT  
CAPACITY EXTENSION PROJECT

Internationally Recognized Areas

encon

Figure- 18 Internationally Recognized Areas around the Project Area



## ANNEX-5-AIR QUALITY IMPACT CALCULATIONS

### Pre-Construction Phase

In the pre-construction phase of the project, topsoil stripping will be carried out during the land preparation process. The planned WWTP area to be used is 62,874 m<sup>2</sup> and a minimum of 30 cm of topsoil stripping will be carried out. Table- 10 showing the dust emission factors is given below to calculate the dust emissions resulting from the topsoil stripping process.

Table- 10 Dust Emission Factor

Sources	Emission Factors		Unit
	Uncontrolled	Controlled	
Dismantling/Excavation	0.025	0.0125	kg/ton
Loading	0.010	0.0050	
Unloading	0.010	0.0050	
Storage	5.800	2.9000	kg/ha-day
Transportation (total distance of round trip)	0.700	0.3500	kg/km- vehicle

Source: Industrial Air Pollution Control Regulation, Appendix 12.

- Top soil strip depth = 30 cm (assumption),
- Volume of topsoil to be stripped: Area x Depth = Volume  
= 62874 m<sup>2</sup> x 0.30 m = 18862.2 m<sup>3</sup>
- Density of topsoil: 1.6 ton/m<sup>3</sup> (average soil density, assumption)
- Amount of topsoil to be stripped: 18862.2 m<sup>3</sup> x 1.6 ton/m<sup>3</sup> = 30179.52 ton
- Duration of pre-construction phase of Project = 1 month = 30 days
- Daily amount of topsoil to be stripped: 30179.52 ton/30 days = 1005.98 ton/day
- 1 working day = 8 hours, 1005.98 ton/day x 1day/8hours = 125.75 ton/hour
- Storage height = 2.5 m (assumption)
- Storage area: 18862.2 m<sup>3</sup> / 2.5 m = 0.7544ha

#### Uncontrolled emissions:

Dismantling/Excavation emission factor (uncontrolled): 0.025 kg/ton

Amount of PM<sub>10</sub> emissions: 125.75 ton/hour \* 0.025 kg/ton = **3.1438 kg/hour**

Storage emission factor (uncontrolled): 5.8 kg/ha-day

Amount of PM<sub>10</sub> emissions: 0.7544 ha x 5.8 kg/ha-day x (1 day/24 hours) = **0.18232 kg/hour**

#### Controlled emissions:

Dismantling/Excavation emission factor (controlled): 0.0125 kg/ton

Amount of PM<sub>10</sub> emissions: 125.75 ton/hour \* 0.0125 kg/ton = **1.5719 kg/hour**

Storage emission factor (controlled): 2.9 kg/ha-day



Amount of PM<sub>10</sub> emissions: 0.7544 ha x 2.9 kg/ha-day x (1day/24 hours) = **0.0912 kg/hour**

In addition to the dust emissions, there will be exhaust emissions of heavy construction machinery. Primary emissions from exhaust gases of vehicles are NO<sub>2</sub>, CO, HC, SO<sub>2</sub> and PM. Emission characteristics depend on parameters such as; age of the vehicle, engine speed, working temperature, ambient temperature and pressure, type and quality of fuel. The equipment to be used during pre-construction phase is given in Table- 11.

**Table- 11 Equipment List to be Used During Pre-construction Phase**

Construction Machinery/Equipment	Number
Truck	1
Loader	1

Dust and gas emission from vehicles are calculated as below. The emission factors for CO, SO<sub>x</sub>, NO<sub>x</sub>, TOC and particulate matter are given in Table- 12.

**Table- 12 Emission Factors for 1 L Diesel Consumption (assuming density of diesel is 0.85 kg/L)**

Pollutant	Emission Factor (kg/ton)*	Emission Factor (g/L)
CO	0.017	0.01445
NO <sub>x</sub>	0.081	0.06885
PM	0.006	0.0051
SO <sub>x</sub>	0.005	0.00425
TOC	0.006	0.0051

\*Source: Environmental Protection Agency (EPA), 2023.

The diesel consumption by each construction vehicle is assumed as 25 L/hour.

□ Total diesel consumption by 2 construction vehicles given in Table- 11 = 50 L/hour

The results of calculation by using emission factors and diesel consumption of preconstruction vehicles are as:

**For CO:** 50 L/h x 0.01445 g/L = 0.7225 g/h

**For NO<sub>x</sub>:** 50 L/h x 0.06885 g/L = 3.4425 g/h

**For PM:** 50 L/h x 0.0051 g/L = 0.255 g/h

**For SO<sub>x</sub>:** 50 L/h x 0.00425 g/L = 0.2125 g/h

**For TOC:** 50 L/h x 0.0051 g/L = 0.255 g/h

According to the European Environment Agency<sup>3</sup>, it is recommended that PM<sub>10</sub> be assumed to have an average PM<sub>2.5</sub> content of 10%. According to this calculation, PM<sub>2.5</sub> emission is 0.0255 g/h.

**Table- 13 Emissions for 1 L Diesel Consumption**

Pollutant	Emissions (g/h)	Project Standards (kg/h)
-----------	-----------------	--------------------------

<sup>3</sup> EMEP/EEA air pollutant emission inventory guidebook 2019

CO	0.7225	50
NO <sub>x</sub>	3.4425	4
PM	0.255	1
SO <sub>x</sub>	0.2125	6
TOC	0.255	3

### Construction Phase

The excavation resulting from construction activities will be used as foundation filling material, and in case of excess, it will be stored and disposed of as specified in the "Regulation on the Control of Excavation Soil, Construction and Demolition Waste". Information regarding the excavation that will occur during the construction phase is as follows:

- Total volume of excavation = Area of Excavations x Average Depth Average Depth = 3 m (assumption) – 0.3 m (topsoil stripped) = 2.7 m  
= 62,874 m<sup>2</sup> x 2.7 m = 169,760 m<sup>3</sup>
- Density of Excavation Material: 1.60 ton/m<sup>3</sup> (average soil density, assumption)
- Total mass of excavation material: Mass = Density x Volume  
= 169,760 m<sup>3</sup> x 1.6 ton/ m<sup>3</sup> = 271,616 ton
- Duration of excavation works: 180 days
- 1 excavation working day= 12 hours
- Hourly Excavated Material Mass: Mass Rate = Mass / Time  
271,616 ton / (180 days x 12 hours/day) = 125.7 ton/hour
- Ratio of excavation to be used as filling material: 50%
- Volume of excavation to be disposed of = Disposal Ratio x Total Volume  
= 169,760 m<sup>3</sup> x %50 = 84,880 m<sup>3</sup>
- Total mass of excavation to be disposed of = Disposal Ratio x Total Mass  
= 271,616 ton x %50 = 135,808 ton
- Volume of excavation to be used as filling material = Filling Ratio x Total Volume = 169,760 m<sup>3</sup> x %50 = 84,880 m<sup>3</sup>
- Storage area of excavation to be used as filling material: Volume Rate = Disposal Excavated Material Volume / Total Time  
= 84,880 m<sup>3</sup> / (180 days x 12 hours) = 39.3 m<sup>3</sup>/ hour  
Total excavated volume for temporary storage: Volume = Volume Rate x Time  
Temporary storage duration of excavated materials = 7 days (assumption)  
= 39.3 m<sup>3</sup>/ hour x 7 days x 12 hours/day = 3,301 m<sup>3</sup>  
Storage area of excavation to be used as filling material: Area = Volume / Height  
Average storage height = 3 m (assumption)  
3,301 m<sup>3</sup> / 3 m = 1100 m<sup>2</sup> = 0.11 ha

The uncontrolled and controlled dust emissions are calculated by using the emission factors given in Table- 10 and presented as follows.

#### Uncontrolled emissions:

Excavation emission factor (uncontrolled): 0.025 kg/ton

Amount of PM<sub>10</sub> emissions: 125.7 ton/hour \* 0.025 kg/ton = **3.14 kg/hour**



Loading emission factor (uncontrolled): 0.010 kg/ton  
Amount of PM10 emissions: 125.7 ton/hour \* 0.010 kg/ton = **1.26 kg/hour**

Transportation emission factor (uncontrolled): 0.700 kg/km-vehicle  
Average travel distance = 5 km (assumption made based on project map)  
Total travel number = Excess excavation mass / Average truck load capacity  
= 135,808 ton / 40 ton = 3396 (total travels by vehicles – unitless) Number of vehicles = 5  
Travels per vehicle = Total travel number / vehicle number  
= 3396 / 5 = 679 travels per vehicle (unitless)  
Transportation emission factor (uncontrolled): 0.700 kg/km-vehicle  
PM10 mass = Average travel distance x Related factor x Vehicle number x Travels per vehicle  
= 5 km x 0.700 kg/km-vehicle x 5 x 679 vehicle = 11,883 kg  
Total work time = 12 months (total construction time) - 1 month (pre-construction phase)  
= 11 months x 30 days x 8 hour/day = 2640 hours  
Amount of PM10 emissions = Rate = Mass / Time  
= 11,883 kg / 2640 hours = **4.5 kg/hour**

Storage emission factor (uncontrolled): 5.8 kg/ha-day  
Amount of PM10 emissions: 0.156 ha x 5.8 kg/ha-day x (1day/24 hours) = **0.038 kg/hour**

#### Controlled Dust Emissions:

Excavation emission factor (controlled): 0.0125 kg/ton  
Amount of PM<sub>10</sub> emissions: 125.7 ton/hour \* 0.0125 kg/ton = **1.57 kg/hour**

Loading emission factor (controlled): 0.005 kg/ton  
Amount of PM<sub>10</sub> emissions: 125.7 ton/hour \* 0.005 kg/ton = **0.63 kg/hour**

Transportation emission factor (controlled): 0.350 kg/km-vehicle  
Average travel distance = 5 km (assumption made based on project map)  
Total travel number = Excess excavation mass / Average truck load capacity  
= 135,808 ton / 40 ton = 3395 (total travels by vehicles – unitless)  
Number of vehicles = 5  
Travels per vehicle = Total travel number / vehicle number  
= 3395 / 5 = 679 travels per vehicle (unitless)  
Transportation emission factor (uncontrolled): 0.350 kg/km-vehicle  
PM10 mass = Average travel distance x Related factor x Vehicle number x Travels per vehicle  
= 5 km x 0.350 kg/km-vehicle x 5 x 679 vehicle = 5941.3 kg  
Total work time = 12 months (total construction time) - 1 month (pre-construction phase)  
= 11 months x 30 days x 8 hour/day = 2640 hours  
Amount of PM10 emissions = Rate = Mass / Time  
= 5941.3 kg / 2640 hours = **2.25 kg/hour**

Storage emission factor (controlled): 2.9 kg/ha-day  
Amount of PM<sub>10</sub> emissions: 0.156 ha x 2.9 kg/ha-day x (1day/24 hours) = **0.019 kg/hour**

Within the scope of the project activities, the old units will be demolished. With this demolition, excavation waste will be generated as well as dust emissions. Within the scope of the project construction, GHG emissions will also occur with the fuel used by the construction equipment. The units to be demolished are detailed in the project description heading.



In the project, demolition will take place in an area of approximately 500 m<sup>2</sup>.

To calculate the volume of pools in demolition activities;

400 m<sup>2</sup> \* 0.5 m (it is assumed) = 200 m<sup>3</sup> (demolition)

When building demolition activities are calculated;

It is assumed ;

- 10 m building width
- 4 m building height
- 0.3 m concrete thickness

Volume = 10 m \* 4 m \* 0.3 m = 12 m<sup>3</sup>

Dust emission factor (according to EPA 1993 data) = 0.00676 kg/m<sup>3</sup>

Total 212 m<sup>3</sup> demolition \* 0.00676 kg/m<sup>3</sup> = 1.44 kg/month = 0.008 kg/h = Dust emission.

As in the construction phase of the Project, there will be exhaust emissions of heavy construction machinery, in addition to the dust emissions. Primary emissions from exhaust gases of vehicles are NO<sub>x</sub>, CO, SO<sub>2</sub>, TOC and PM. Emission characteristics depend on parameters such as; age of the vehicle, engine speed, working temperature, ambient temperature and pressure, type and quality of fuel. The construction machinery and equipment list is given in Table- 14.



**Table- 14 Construction Machinery and Equipment List**

Construction Machinery/Equipment	Number
Truck	5
Excavator	2
Loader	1
Sprinkler	1
Tower crane	1

Dust and gas emission from vehicles are calculated as below. In calculations, the emission factors for CO, SO<sub>2</sub>, NO<sub>x</sub>, TOC and particulate matter given in Table- 14 are used.

The diesel consumption by each construction vehicle is assumed as 25 L/hour.

□ Total diesel consumption by 10 construction vehicles given in Table- 14.

The results of calculation by using emission factors and diesel consumption of construction vehicles are as:

For CO: 250 L/h x 0.01445 g/L = 3.6125 g/h  
For NO<sub>x</sub>: 250 L/h x 0.06885 g/L = 17.2125 g/h  
For PM: 250 L/h x 0.0051 g/L = 1.275 g/h  
For SO<sub>x</sub>: 250 L/h x 0.00425 g/L = 1.0625 g/h  
For TOC: 250 L/h x 0.0051 g/L = 1.275 g/h

According to the European Environment Agency<sup>4</sup>, it is recommended that PM<sub>10</sub> be assumed to have an average PM<sub>2.5</sub> content of 10%. According to this calculation, PM<sub>2.5</sub> emission is 0.1275 g/h.

#### **ANNEX-6-NOISE LEVEL CALCULATIONS**

The total equivalent noise level created by noise sources is calculated with the help of the formula given below.

$$L_{wT} = 10 \times \log \sum_{i=1}^n 10^{\frac{L_{wi}}{10}} \quad (1) \text{ (METU, 2023). Where;}$$

n: Number of noise sources  
L<sub>wi</sub>: Noise level (dBA) of each source  
L<sub>wT</sub>: Total equivalent noise level

The noise level originating from the machine/equipment and reaching a certain distance is calculated by the formula below.

<sup>4</sup> EMEP/EEA air pollutant emission inventory guidebook 2019

$$L_p = L_{wT} + 10 \times \log \frac{Q}{4\pi r^2} \quad (2) \text{ (SRL,1988).}$$

Where;

Q: 1

r: Distance (m) Lp:

Noise level (dBA)

### **Pre-construction Phase**

The equipment to be used in the pre-construction phase and their noise levels are given below.

**Table- 15. Noise Levels of Machinery/Equipment**

Equipment	Number	Lwi
Excavator	1	104
Truck	1	108

Using the information given in Table-15 and the formula numbered 1, total equivalent noise level is calculated as 115.3.

In addition, using formula numbered 2, the noise levels depending on distance for preconstruction phase are calculated and given in Table-16.

**Table- 16 Noise Levels of Depending on Distance**

Distance (m)	Lp (dBA)	Project Standard (dBA)
15	80,8	65
50	70,4	65
100	64,3	65
200	58,3	65
300	54,8	65
400	52,3	65
500	50,4	65
600	48,8	65
700	47,4	65
800	46,3	65
900	45,3	65
1000	44,3	65
1500	42,4	65
2000	40,8	65
2500	38,3	65
	36,4	

### **Construction Phase**

The equipment to be used in the construction phase and their noise levels are given below.

**Table- 17. Noise Levels of Machinery/Equipment**



Equipment	Number	Lwi
Excavator	2	104
Loader	1	115
Tower Crane	1	112
Truck	5	108
Sprinkler	1	109

Using the information given in Table-17 and the formula numbered 1, total equivalent noise level is calculated as 119.5.

In addition, using formula numbered 2, the noise levels depending on distance for construction phase are calculated and given in Table-18.

**Table- 18. Noise Levels of Depending on Distance**

Distance (m)	Lp (dBA)	Project Standard (dBA)
15	85,0	65
50	74,5	65
100	68,5	65
200	62,5	65
300	58,9	65
400	56,4	65
500	54,5	65
600	52,9	65
700	51,6	65
800	50,4	65
900	49,4	65
1000	48,5	65
1250	46,6	65
1500	45,0	65
2000	42,5	65
2500	40,5	65

## **ANNEX-7-CHANCE FIND PROCEDURE**

### **1. Introduction**

ALOIZ is responsible to avoid or mitigate any potential impacts of the Activities on the physical or cultural resources. It is anticipated that the project sites are selected such that there would not be any overlapping with archaeological and heritage sites/assets within the project impact area. However, there is still a possibility of encountering some unknown archaeological sites and cultural heritage assets as a Chance Find during project activities. A chance find means potential cultural heritage objects, features or sites that are identified outside of a formal site reconnaissance, normally as a result of construction monitoring. Thus, this document aims to outline the procedure and respective responsibilities in relation to the management of Chance Finds during construction works.

### **2. Roles and Responsibilities**

ALOIZ and all the contractors are responsible to comply with the procedure during the project construction activities. In this regard, ALOIZ would be providing training to their and contractors' employees involved in supervision and construction works regarding the procedure. Mainly a chance



find could be encountered during the pre-construction and ground disturbance (e.g., excavation and levelling) activities. Thus, the procedure has to be implemented day to day at this stage.

### 3. Chance Find Process and Procedure

The step by step process and procedure to be followed upon a chance find discovery is provided below. In the case of any chance find, as detailed below, the Contractor will give due consideration and follow the necessary steps.

#### Step 1 - After the discovery of a chance find:

- All work must cease at the location where discovery is made
- A temporary buffer zone around the chance find will be put in place
- Contractor contacts the ALOIZ and the archaeological museum in the province is informed immediately
- Chance find location is secured through flagging, or no-entry signs, etc. □ Chance find should not be moved, removed or further disturbed

#### Step 2 – Recording

- Chance Find Form Part A is filled in by the contractor and sent to ALOIZ and a copy is filed for records

#### Step 3 – Contact with local authority

- The contractor notifies the relevant Governmental Archaeological Museum in the Province for the chance find

#### Step 4 – Authority's decision

The relevant Museum decides on the following path of actions for chance find area:

##### Step 4.A - No significance to site or finding

- The museum declares that the site/finding is considered to be of no significance ○ Contractor informs the ALOIZ
- Contractor records the decision on Part B of Chance Find form and sends a copy to the ALOIZ ○ A copy of Chance Find form Part B is kept for records ○ No further actions required ○ This step closes out the chance find procedure ○ Construction activities may resume



#### Step 4.B – Significance to site

- The museum declares that the site/finding is considered to be of significance ○ Museum decides on further actions and informs the contractor and the contractor informs the ALOIZ
- Contractor records the decision on Part B of Chance Find form ○ Proceed to Step 5

#### Step 5 – Site investigation

##### Step 5.A - After field investigation Museum declares the site/finding has minor significance

- Contractor informs the ALOIZ
- Contractor records the decision on Part C of Chance Find form and sends a copy to the ALOIZ ○ A copy of Chance Find form Part B is kept for records ○ No further actions required ○ This step closes out the chance find procedure ○ Construction activities may resume

##### Step 5.B - After field investigation Museum declares the site/finding has moderate significance

- Further studies such as test pit/salvage excavations or remote sensing investigation are to be completed
- Museum provides instructions, and/or supervision for the studies ○ Contractor informs the ALOIZ
- ALOIZ provides an archaeological work team of qualified archaeologist and workers to work under the supervision of the museum.
- After excavation is completed, team provides a report to the museum directorate ○ The museum directorate reports the study outcomes to the relevant Regional Preservation Board of Cultural Assets.
- The relevant Regional Preservation Board of Cultural Assets officially confirms completion of recovery and informs the ALOIZ
- Contractor records the decision on Part C of Chance Find form and sends a copy to the ALOIZ ○ A copy of Chance Find form Part B is kept for records ○ No further actions required ○ This step closes out the chance find procedure ○ Construction activities may resume

##### Step 5.C - After field investigation Museum declares the site/finding has major significance



- Salvage excavation is to be completed
- Site is to be treated according to Law on the Protection of Cultural and Natural Assets Law (No. 2863 dated 21.07.1983) ○ Museum provides instructions, and/or supervision for test pit/salvage archaeological excavation
- Contractor informs the ALOIZ
- ALOIZ provides an archaeological work team of qualified archaeologist and workers to work under the supervision of the museum
- Once the excavation is completed, salvage excavation team provides a report to museum directorate
- The relevant Regional Preservation Board of Cultural Assets officially confirms completion of recovery and informs ALOIZ.
- Site will be officially recorded and protected according to Turkish regulations
- Contractor records the decision on Part C of Chance Find form and sends a copy to the ALOIZ ○ A copy of Chance Find form Part B is kept for records ○ No further actions required ○ This step closes out the chance find procedure
- Construction activities may resume or further actions need to be taken

It is important to note that in case human remains are found, all project team and the local authorities will be immediately notified.

#### **4. Monitoring and Reporting**

The contractor will monitor all construction or other ground disturbance activities for evidence of presence of cultural heritage items. Chance Finds will be recorded on the Chance Find Report form (see Annex-9.1). All Chance Find Report forms will be kept in hard copy at the site and will also be scanned and saved electronically. Any Chance Find will be recorded in the Chance Find Register (see Annex-9.2).



## Annex 4-1 Chance Find Report Form

<b>PART A</b>			
Project Location (Province):	District: Neighborhood:	Date:	Form No:
Name of person reporting chance find:			
Was work stopped in the immediate vicinity of the chance find? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Was a buffer zone created to protect the chance find? <input type="checkbox"/> Yes <input type="checkbox"/> No			
<b>NOTIFICATION</b>			
OIZ contacted <input type="checkbox"/> Yes <input type="checkbox"/> No			
<b>CHANCE FIND DETAILS</b>			
GPS coordinates	Photo record <input type="checkbox"/> Yes <input type="checkbox"/> No  If not, explain why:  Other records <input type="checkbox"/> Yes <input type="checkbox"/> No Specify (drawings, videos, etc.):		
Description of chance find:			
Description of site/finding and other specifications of site/finding (e.g. surface sediment type, ground surface visibility, etc.):			



<b>PART B</b>		
<b>NOTIFICATION OF MUSEUM DIRECTORATE</b>		
Contractor contacted museum directorate <input type="checkbox"/> Yes <input type="checkbox"/> No  Date of notification:  Name of museum directorate and Name of contact:  Contact number of museum directorate representative:		
<b>DECISION OF MUSEUM DIRECTORATE</b>		
Date of site visit:		
<input type="checkbox"/> Site/Finding of no significance - Construction to proceed with no further action – End of chance find procedure  Date of notice to resume work:	<input type="checkbox"/> Site/Finding of significance - Further actions required  Please Fill out Part C	
Name of museum directorate representative/archeologist:		
Contact information:		
OIZ contacted <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>PART C</b>		
<b>FURTHER FIELD INVESTIGATION</b>		
<input type="checkbox"/> Site/Finding of minor significance	<input type="checkbox"/> Site/Finding of moderate significance	<input type="checkbox"/> Site/Finding of major significance
Describe additional work to be conducted:		
Date started:		Date completed:
Date of notice to resume construction works:		
Name of museum directorate representative/archaeologist:		
Contact information:		



OIZ contacted	<input type="checkbox"/> Yes	<input type="checkbox"/> No
---------------	------------------------------	-----------------------------

#### Annex 4-2 Chance Find Register

Date of Find	Summary of Chance Find	Name of Authority Notified	Action Taken	Chance Find Form Completed	Status Open or Closed	Remarks



## ANNEX-8-WELL USE PERMITS

DSİ Genel Müdürlüğü  
2.Bölge Müdürlüğü İzmir

Form No: 2.7.4  
Belge No: 02.3510.007.K.256679  
Belge Tarihi: 26.05.2014

64113

### YERALTISUYU KULLANMA BELGESİ

1. Belge Sahibi : **ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ (1)**  
T.C. Kimlik Numarası : (520069145)  
Adresi : İZMİR-ÇANAKKALE E87 KARAYOLU 67. KM 107 SK. NO:1 ALİAĞA/İZMİR

#### 2. Teknik Sorumlu :

a) Adı Soyadı : GÜNER ŞENKALFA  
b) Mesleği : (JEOLOJİ MÜHENDİSİ)  
c) Diploma-Oda Sicil No : 3621  
d) Adresi : ÇAMDİBİ MAH. FATİH CAD. AKÇABALI İŞ HANI NO:25 KAT:2 D.:5 BORNova/İZMİR

27-05-2014

#### 3. Sondör Kuyucu Galerici :

a) Adı Soyadı : B.S.  
b) Mesleği : Sondör  
c) Diploma-Oda Sicil No : 0  
d) Adresi :

#### 4. Kuyu/Galeri Yeri :

İli : İzmir  
İlçesi : Aliağa  
Beldesi, Mahallesi veya Köyü : ÇORAKLAR  
Kuyu'nun DSİ No'su : 64113  
Koordinatı : 504955 - 4294652  
Havza Adı : 4- Kuzey Ege Havzası  
Ova Adı :

#### 5. Kuyu/Galeri Verimi :

Pompajla : 10 lt/sn  
Artezien : lt/sn  
Statik Seviye : 0,4 m  
Dinamik Seviye (pompajda) : 16 m  
Çekilecek Su Miktarı : 857,00 Ton/gün - 312.500,00 Ton/yıl  
Çekilecek suyu temine yetecek enerji miktarı : 61727 kWh  
Sayaç Numarası : BAYLAN-738  
Kullanma Amacı : **SANAYİ SUYU**

28.02.2014 tarihli dilekçe ile yukarıda belirtilen **Derin Kuyu** kullanmak istediğini belirten **ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ(1)**

müracaatı üzerine yapılan inceleme sonucu, isteğin kanun, tüzük ve hükümlerine uygun olduğu anlaşıldığından, suyun yalnız **SANAYİ SUYU** amacıyla kullanılması şartıyla bu kullanma belgesi verilmektedir.

#### BELGE KUYUYA TEKNİK

#### ŞARTNAMEYE UYGUN

#### ALGILAMALI VE ÖN

#### YÜKLEMELİ SU SAYAÇI

#### Ekli: MODERN TAKILMASI ŞARTI İLE

- 1) Kuyu kütüğü (3 adet)
- 2) Pompaj programı (3 adet)
- 3) Analiz raporu (3 adet)
- (kullanma amacına uygun)
- 4) Kuyu açılan arazinin onaylı tapu fotokopisi

DSİ 2. Bölge Md.

**Halit EKEROL**  
Bölge Müdür Yardımcısı

**Not :** Kullanma belgesi; "ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ" ne ait 9.220.000 m2 alan içinde ve belirtilen koordinatlarda bulunan, O.S.B. nin su ihtiyacını karşılamak için kullanılan kuyudan yer altı suyu temini amacıyla düzenlenmiştir. 24.12.2003 tarih ve II.K.İz.02.74 nolu kullanma belgesi "ALİAĞA ORGANİZE SANAYİ BÖLGESİ" adına kayıtlı iken sayaç takılması nedeni ile iptal edilmiştir. Belge sayaç markası ve seri no su "ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ (1)" adına, 02.3510.007.K.256679 belge numarası ile tekrar düzenlenmiştir. Kullanmakta olduğunuz uzaktan okunabilir su sayacının arıza nedeniyle devreden çıkması durumunda; arıza nedenini, tarihlerini ve bu süre zarfında kullanmış olduğunuz yeraltı suyu miktarını açıklayan belgeyi jeoteknik hizmetler ve yeraltı suyu şube müdürlüğünün dikkatine açıklamasıyla 0(232) 435 37 42 no lu telefon numarasına faksı ile göndermeniz gerekmektedir. Sayaçta meydana gelecek arızalarda teknik servis ile iletişime geçilmelidir. Tahsis edilen yeraltı suyunun miktarı izlenecektir. Yıllık tüketimlerine göre gerekli düzenlemeler yapılabilmektedir. Suyun tasarruflu kullanımı içingerekli artırma, yeniden kullanım, geri dönüşüm gibi önlemler alınmalıdır.

SK



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# KUYU KÜTÜĞÜ

● Aliğa Organize Sanayi Bölgesi (Kuyu No:1)

<b>A - GENEL DURUM</b>		<b>E - KUYU YERİ KROKİSİ</b>					
Mevkii	Aliğa Organize Sanayi Bölgesi (Kuyu No:1)						
İli	Ezmir						
İlçesi	Aliğa						
Bucak	...						
Köyü	Çarşılar						
Koordinatı	5 04 956 D. / 42 94 653 K.						
Kuyu Zemin Kotu	22						
Açılış Amacı	Sanayi						
Başlangıç Tarihi	Tescil						
Biliş Tarihi	...						
Arama belge Tarihi ve No	...						
Kullanım Belge Tarihi ve No	...						
<b>B - SU VERİM TECRÜBESİ</b>		<b>F - KUYU BAŞI KROKİSİ</b>					
AKIFER	METRELER ARASI	SÜRE	SAAT	NE İLE YAPILMIŞ	STATİK SEVİYE	DİNAMİK SEVİYE	DEĞİ (lt/s)
I							
II							
MÜŞTEREK	0	8		Dalış	0,4	15,6	10
<b>C - İNŞAAT</b>		<b>G - POMPA DURUMU</b>					
NE İLE YAPILMIŞ	Tescil	TİPİ					
TİPİ	...	Dalış					
SÜRESİ	...	MOTORU					
		8,64 HP					
		ÇEKİM					
		6,91 kW					
<b>D - AÇAN FIRMA</b>		<b>MESUL ŞAHİSLER</b>					
AD SOYADI	Tescil	MESLEĞİ	AD SOYADI				
MAKİNENİN TİPİ	...		DİPLOMANO				
SONDAJ DERİNLİĞİ (m)	160		...				
ADRES	...		...				
		Sonda					
		Tescil					
<b>KUYU AÇILIŞINDA KARŞILAŞILAN ÖZELLİKLER</b>		<b>KUYU ŞEMASI</b>					
K		20					
Ölçeksiz		40					
15 inç		60					
225 mm		80					
		100					
		120					
		140					
		160					
		180					
		200					
		220					
		240					
		260					
		280					
		300					
		320					
Pafta NO : 0							
Ada No : 0							
Parşel No : 0							
KONTROL EDİLMİŞTİR.							
26-05-2014							
Yakın civarda komşu							
Ertan KAZANMAZ							
Baş Mühendis							
		LİTOLOJİK KESTİ					
		SUYEREN TABAKALARI					
		FORMASYONUN LİTOLOJİK TARİFİ					
		Alüvyon; Kil, çakıl, kum					
		Neojen Yaşlı Volkanik; Aglomera, Bazaltik Tuf					



### POMPAJ PROGRAMI

Kuyu Sahibi: Aliğa Organize Sanayi Bölgesi Kuyu No:1

Koordinatı : 5 04 956 D. / 42 94 653 K.

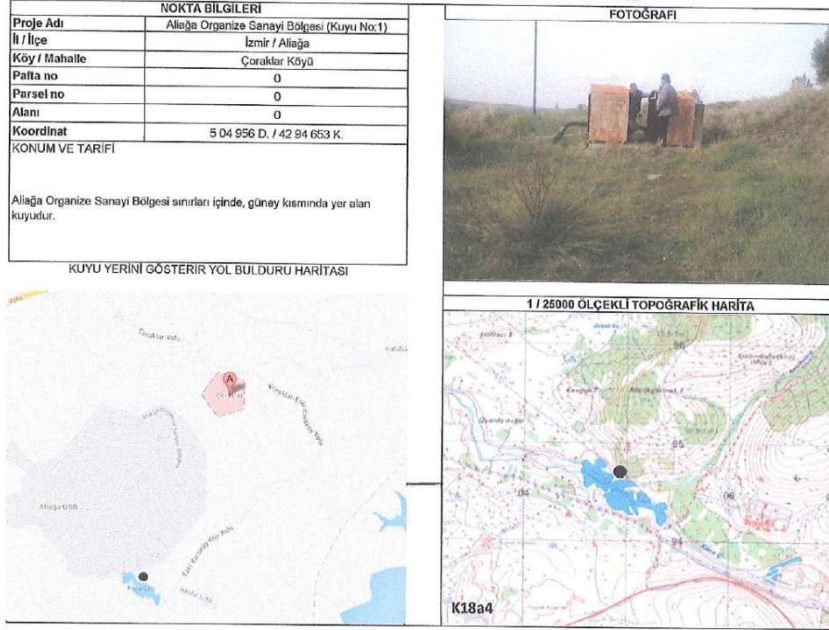
### İŞLETME PROGRAMI

İşletme Debisi	.....10.....	lt/sn
Saatte çekilen su miktarı	.....36.....	ton
Günde çalışacağı süre	.....23,8.....	saat
Günde çekilen su miktarı	.....856,2.....	ton
Yılda çalışacağı süre	.....365.....	gün
Yılda çekilen su miktarı	.....312.500.....	ton
Kullanma amacı	....Sanayi.....	

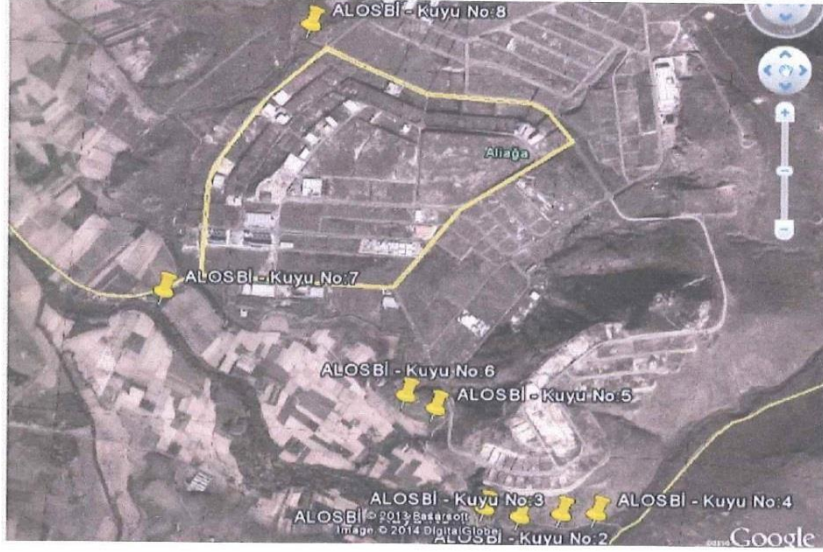
Gürer Selkalla  
Geo. Müh.



KUYU YERİNİ GÖSTERİR FOTOĞRAF VE BULDURU HARİTALARI



EK-1 KUYU YERİ VE ÇEVRESİNİ GÖSTERİR UYDU GÖRÜNTÜSÜ



POMPA DENEYİ TUTANAĞI



İzmir ili, Aliğa ilçesi, Çoraklar mevkii/mahalle/köy, ...0..pafta, ...0.. ada, ...0.... parselde, 0.. m2 yüz ölçümüne sahip Aliğa Organize Sanayi Bölgesi Kuyu No:1'e ait arazide açılan 160 m'lik sondaj kuyusuna ait bilgiler aşağıdadır ;

POMPA VE KUYU BİLGİLERİ	
Kuyunun açıldığı tarih	Tescil
Kuyunun Arama/Kullanma Belge No	2.K.İz.02.74
Kuyunun Koordinatları	5 04 956D./42 94 653K.
Kuyu derinliği	160
Pompanın özelliği	Dalgıç
Süresi(saat)	8
Statik seviye(m)	0,40
Dinamik seviye(m)	16,60
Debi(lt/sn)	10,00

Teknik Sorumlusu  
Güner Şenkal

Söndür  
Tescil

Belge Sahibi  
Aliğa Organize Sanayi Bölgesi Kuyu No.1

Tarih 22/02/2014

DSİ Genel Müdürlüğü  
2.Bölge Müdürlüğü İzmir

Form No: 2.7.4  
Belge No: 02.3510.007.K.256680  
Belge Tarihi: 26.05.2014

66054

YERALTISUYU KULLANMA BELGESİ  
ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ  
(2)  
(520069145)  
İZMİR-ÇANAKKALE E87 KARAYOLU 67. KM 107 SK. NO:1 ALİAĞA/İZMİR

27-05-2014

1. Belge Sahibi :

T.C. Kimlik Numarası

Adresi

2. Teknik Sorumlu :

a) Adı Soyadı : GÜNER ŞENKALFA

b) Mesleği : (JEOLOJİ MÜHENDİSİ)

c) Diploma-Oda Sicil No : 3621

d) Adresi : ÇAMDİBİ MAH. FATİH CAD. AKÇABALI İŞ HANI NO:25 KAT:2 D.:5  
BORNOVA/İZMİR

3. Sondör Kuyucu Galerici :

a) Adı Soyadı : B.S.

b) Mesleği : Sondör

c) Diploma-Oda Sicil No : 0

d) Adresi :

4. Kuyu/Galeri Yeri :

İli : İzmir

İlçesi : Aliağa

Beldesi, Mahallesi veya

Köyü : ÇORAKLAR

Kuyu'nun DSİ No'su : 66054

Koordinatı : 505167 - 4294614

Havza Adı : 4- Kuzey Ege Havzası

Ova Adı :

5. Kuyu/Galeri Verimi :

Pompajla : 12 lt/sn

Artezien : lt/sn

Statik Seviye : 0,35 m

Dinamik Seviye

(pompajda) : 16 m

Çekilecek Su Miktarı : 857,00 Ton/gün - 312.500,00

Çekilecek suyu temine

yetecek enerji miktarı : 61726 kWh

Sayaç Numarası : BAYLAN-739

Kullanma Amacı : SANAYİ SUYU

28.02.2014 tarihli dilekçe ile yukarıda belirtilen **Derin Kuyu** kullanmak istediğini belirten **ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ(2)**

müracaatı üzerine yapılan inceleme sonucu, isteğin kanun, tüzük ve hükümlerine uygun olduğu anlaşıldığından, suyun yalnız **SANAYİ SUYU** amacıyla kullanılması şartıyla bu kullanma belgesi verilmiştir.

**BÜ BELGE KUYUYA TEKNİK ŞARTNAMEYE UYGUN ALGILAMALI VE ÖN YÜKLEMELİ SU SAYACI**

Ekli:

- 1) Müracaat dilekçesi
- 2) Pompaj programı (3 adet)
- 3) Analiz raporu (3 adet)
- 4) Kuyu açılan arazinin onaylı tapu fotokopisi

DSİ 2. Bölge Md.

**Halit EKEROL**  
Bölge Müdür Yardımcısı

**Not :** Kullanma belgesi; "ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ" ne ait 9.220.000 m2 alan içinde ve belirtilen koordinatlarda bulunan, O.S.B. nin su ihtiyacını karşılamak için kullanılan kuyudan yer altı suyu temini amacıyla düzenlenmiştir. 24.12.2003 tarih ve II.K.İz.20.75 nolu kullanma belgesi "ALİAĞA ORGANİZE SANAYİ BÖLGESİ" adına kayıtlı iken sayaç takılması nedeni ile iptal edilmiştir. Belge sayaç markası ve seri no su "ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ (2)" adına, 02.3510.007.K.256680 belge numarası ile tekrar düzenlenmiştir. Kullanmakta olduğunuz uzaktan okunabilir su sayacının arıza nedeniyle devreden çıkması durumunda; arıza nedenini, tarihlerini ve bu süre zarfında kullanmış olduğunuz yeraltı suyu miktarını açıklayan belgeyi jeoteknik hizmetler ve yeraltı suyu şube müdürlüğünün dikkatine açıklamasıyla 0(232) 435 37 42 no lu telefon numarasına faks olarak gönderilmelidir. Sayaçta meydana gelecek arızalarda teknik servis ile iletişime geçilmelidir. Tahsis edilen yeraltı suyunun miktarı izlenecektir. Yıllık tüketimlerine göre gerekli düzenlemeler yapılabilmektedir. Suyun tasarruflu kullanımı için gerekli artıma, yeniden kullanım, geri dönüşüm gibi önlemler alınmalıdır.

SK



# KUYU KÜTÜĞÜ

● Aliğa Organize Sanayi Bölgesi (Kuyu No:2)

A - GENEL DURUM	
Mevkii	Aliğa Organize Sanayi Bölgesi (Kuyu No:2)
İli	İzmir
İlçesi	Aliğa
Bucak	
Köyü	Çonklar
Koordinat	5 05 168 D. / 42 94 614 K.
Kuyu Zemin Kotu	26
Açılış Amacı	Sanayi
Başlangıç Tarihi	Tescil
Bitiş Tarihi	...
Anma belgesi Tarihi ve No	...
Kalınma Belge Tarihi ve No	...



B - SU VERİM TECRÜBESİ							
AKİYE	MİTİRELER ARASI	SÜRE	SAAT	NE İLE YAPILDIĞI	STATİK SEVİYE	DİNAMİK SEVİYE	DERİ (B / m)
I							
II							
MÜŞERREK	0	8		Tırlar	0,35	16	12



C - İNKİŞAF	
NE İLE YAPILDIĞI	Tescil
YERİ	...
SÜRESİ	...

G - POMPA DURUMU	
TİPİ	Dalgıç
MOTORU	10,37 HP
ÇEKİM	8,30 kW

D - AÇAN FİRMA	
ADISOYADI	Tescil
MAKİNENİN TİPİ	...
SONDAJ DERİNLİĞİ (m)	152
ADRES	...

MESUL ŞAHISLAR			
MESLEĞİ	ADISOYADI	DİPLOMA NO	İNGİŞİ
Jes.Müh.	Günar Şenkalfı	C.B. 11208	
Sondör	Tescil		

KUYU AÇILIŞINDA KARŞILAŞILAN ÖZELLİKLER	NE İLE YAPILDIĞI	STATİK SEVİYE	DİNAMİK SEVİYE	KUYU ŞEMASI	LİTOLOJİK KESİT	FORMASYONUN LİTOLOJİK TARIFI
<p>K ↑</p> <p>Ölçeksiz</p> <p>Pafıa NO : 0</p> <p>Ada No : 0</p> <p>Parsel No : 0</p> <p><b>KONTROL EDİLMİŞTİR.</b></p> <p>26-05-2014</p> <p>Yakın civarda komşu kuyu yoktur.</p> <p><b>Ertan KAZANASMAZ</b></p> <p>Baş Mühendis</p>	15 inç	225 mm				<p>Alüvyon; Kil, çakıl, kum, Yamaç molozu</p> <p>Neojen Yağlı Volkanik; Aglomera, Bazaltik Tuf</p>



#### POMPAJ PROGRAMI

Kuyu Sahibi: Aliğa Organize Sanayi Bölgesi Kuyu No:2

Koordinatı : 5 05 168 D. / 42 94 614 K.

#### İŞLETME PROGRAMI

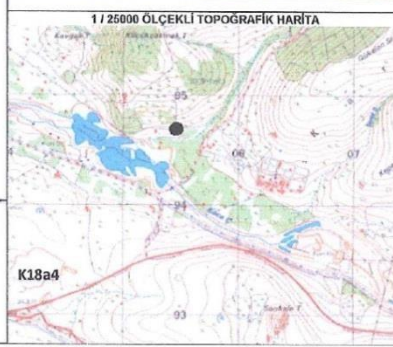
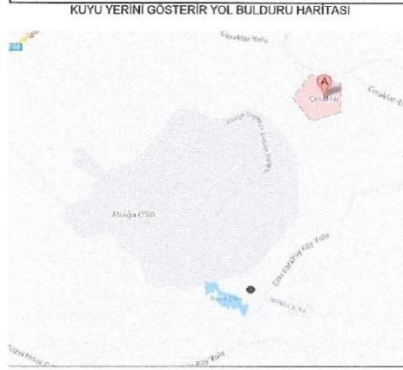
İşletme Debisi	:.....12.....	lt/sn
Saatte çekilen su miktarı	:.....43,2.....	ton
Günde çalışacağı süre	:.....19,82.....	saat
Günde çekilen su miktarı	:.....856,2.....	ton
Yılda çalışacağı süre	:.....365.....	gün
Yılda çekilen su miktarı	:.....312.500.....	ton
Kullanma amacı	:...Sanayi.....	

Güner Şenkalfa  
Jeo. Müh.

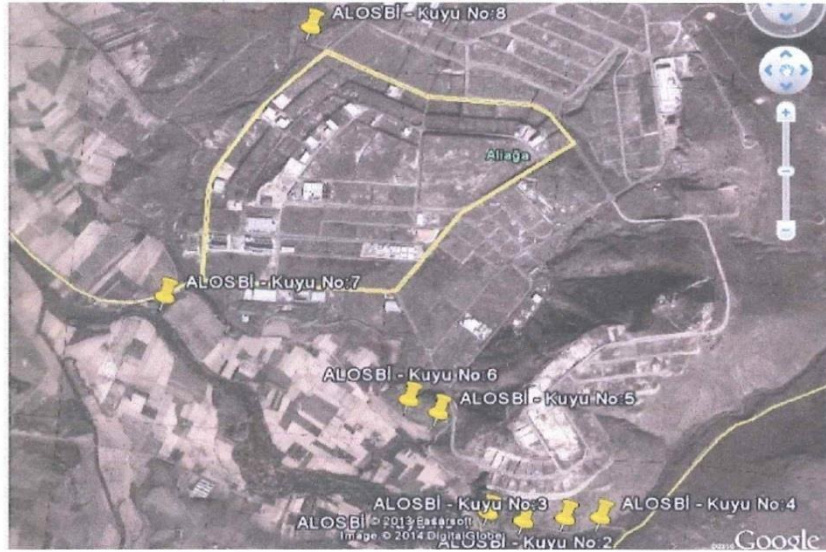


# KUYU YERİNİ GÖSTERİR FOTOĞRAF VE BULDURU HARİTALARI

NOKTA BİLGİLERİ	
Proje Adı	Aliağa Organize Sanayi Bölgesi (Kuyu No:3)
İl / İlçe	İzmir / Aliağa
Köy / Mahalle	Çoraklar Köyü
Pafila no	0
Parsel no	0
Alanı	0
Koordinat	505 418 D. / 42 94 655 K.
KONUM VE TARİFİ	
Aliağa Organize Sanayi Bölgesi sınırları içinde, güney kısmında yer alan kuyudur.	



## EK-1 KUYU YERİ VE ÇEVRESİNİ GÖSTERİR UYDU GÖRÜNTÜSÜ



POMPA DENEYİ TUTANAĞI



İzmir ili, Aliaga ilçesi, Çoraklar mevkii/mahalle/köy, ...0..pafta, ...0.. ada, ...0.... parselde, 0.. m2 yüz ölçümüne sahip Aliaga Organize Sanayi Bölgesi Kuyu No:2'ye ait arazide açılan 152 m'lik sondaj kuyusuna ait bilgiler aşağıdadır ;

POMPA VE KUYU BİLGİLERİ	
Kuyunun açıldığı tarih	Tescil
Kuyunun Arama/Kullanma Belge No	2.K.İz.20.75
Kuyunun Koordinatları	5 05 168D./42 94 614K
Kuyu derinliği	152
Pompanın özelliği	Dalgıç
Süresi(saat)	8
Statik seviye(m)	0,35
Dinamik seviye(m)	16,00
Debi(lt/sn)	12,00

Tarih :25.02.2014

Teknik Sorumlu  
Güner Şenkalfa

Söndör  
Tescil

Belge sahibi  
Aliaga Organize Sanayi Bölgesi Kuyu No:2

DSİ Genel Müdürlüğü  
2.Bölge Müdürlüğü İzmir

Form No: 2.7.4  
Belge No: 02.3510.007.K.256691  
Belge Tarihi: 26.05.2014

64090

YERALTISUYU KULLANMA BELGESİ

1. Belge Sahibi :  
T.C. Kimlik Numarası  
Adresi

ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ  
(3)  
(520069145)  
İZMİR-ÇANAKKALE E87 KARAYOLU 67. KM 107 SK. NO:1 ALİAĞA/İZMİR

27-05-2014

2. Teknik Sorumlu :

a) Adı Soyadı : GÜNER ŞENKALFA  
b) Mesleği : (JEOLOJİ MÜHENDİSİ)  
c) Diploma-Oda Sicil No : 3621  
d) Adresi : ÇAMDİBİ MAH. FATİH CAD. AKÇABALI İŞ HANI NO:25 KAT:2 D.:5  
BORNova/İZMİR

3. Sondör Kuyucu Galerici :

a) Adı Soyadı : B.S.  
b) Mesleği : Sondör  
c) Diploma-Oda Sicil No : 0  
d) Adresi :

4. Kuyu/Galeri Yeri :

İli : İzmir  
İlçesi : Aliağa  
Beldesi, Mahallesi veya  
Köyü : ÇORAKLAR  
Kuyu'nun DSİ No'su : 64090  
Koordinatı : 505418 - 4294654  
Havza Adı : 4- Kuzey Ege Havzası  
Ova Adı :

5. Kuyu/Galeri Verimi :

Pompa/jla : 12 lt/sn  
Artezien : lt/sn  
Statik Seviye : 0,7 m  
Dinamik Seviye  
(pompa/jla) : 14 m  
Çekilecek Su Miktarı : 857,00 Ton/gün - 312.500,00  
Ton/yıl  
Çekilecek suyu temine  
yetecek enerji miktarı : 58297 kWh  
Sayaç Numarası : BAYLAN-740  
Kullanma Amacı : SANAYİ SUYU

28.02.2014 tarihli dilekçe ile yukarıda belirtilen **Derin Kuyu** kullanmak istediğini belirten **ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ(3)**

müracaatı üzerine yapılan inceleme sonucu, istişin kanun, tüzük ve hükümlerine uygun olduğu anlaşıldığından, suyun yalnız **SANAYİ SUYU** amacıyla kullanılması şartıyla bu kullanma belgesi verilmiştir.

**BU BELGE KUYUYA TEKNİK  
ŞARTNAMEYE UYGUN  
AÇIKLAMALI VE ÖN  
YÜKLEMELİ SU SAYACI  
YERLEŞTİRİLMESİ ŞARTI İLE**

Eki:

- 1) Kuyu kütüğü (3 adet)
- 2) Pompa programı (3 adet)
- 3) Analiz raporu (3 adet)
- (kullanma amacına uygun)
- 4) Kuyu açılan arazinin onaylı tapu fotokopisi

DSİ 2. Bölge Md.

**HAH EKEROL**  
Bölge Müdür Yardımcısı

**Not :** Kullanma belgesi; "ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ" ne ait 9.220.000 m2 alan içinde ve belirtilen koordinatlarda bulunan, O.S.B. nin su ihtiyacını karşılamak için kullanılan kuyudan yer altı suyu temini amacıyla düzenlenmiştir. 29.04.2004 tarih ve II.K.İz.20.77 (4-4) nolu kullanma belgesi "Aliağa Organize San. Bölgesi" adına kayıtlı iken sayaç takılması nedeni ile iptal edilmiştir. Belge sayaç markası ve seri no su "ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ (3)" adına, 02.3510.007.K.256691 belge numarası ile tekrar düzenlenmiştir. Kullanmakta olduğunuz uzaktan okunabilir su sayacının arıza nedeniyle devreden çıkması durumunda; arıza nedenini, tarihlerini ve bu süre zarfında kullanmış olduğunuz yeraltı suyu miktarını açıklayan belgeyi jeoteknik hizmetleri ve yeraltı suları şube müdürlüğünün dikkatine açıklamasıyla 0(232) 435 37 42 no lu telefon numarasına faks olarak göndermek zorundadır. Sayaçta meydana gelecek arızalarda teknik servis ile iletişime geçilmelidir. Tahsis edilen yeraltı suyunun miktarı izlenecektir. Yıllık tüketimlerine göre gerekli düzenlemeler yapılabilecektir. Suyun tasarruflu kullanımı içingerekli artırma, yeniden kullanım, geri dönüşüm gibi önlemler alınmalıdır.

SK



# KUYU KÜTÜĞÜ

● Aliğa Organize Sanayi Bölgesi (Kuyu No:3)

<b>A - GENEL DURUM</b>														
Mersii	Aliğa Organize Sanayi Bölgesi (Kuyu No:3)													
İli	İzmir													
İlçesi	Aliğa													
Bucagi	...													
Köyü	Çoraklar													
Koordinat	5 05 418 D. / 42 94 655 K.													
Kuyu Zemin Kotu	25													
Açılış Amacı	Sanayi													
Başlangıç Tarihi	Tescil													
Bitiş Tarihi	...													
Arma belge Tarihi ve No	...													
Kullanma Belge Tarihi ve No	...													
<b>B - SU VERİM TECRÜBESİ</b>														
AKTİF	METİFELER ARASI	SÜRE	SAAT	NE İLE YAPILDIĞI	STATİK SEVİYE	DİNAMİK SEVİYE	Derin (m)							
I														
II														
MÜŞTEREK	0	8		Dalgıç	0,7	14,5	12							
<b>C - İNKİŞAF</b>														
NE İLE YAPILDIĞI	Tescil													
Yılı	...													
SÜRESİ	...													
<b>D - AÇAN FİRMA</b>														
ADI SOYADI	Tescil													
MAKİNESİN TİPİ	...													
SONDAJ DERİNLİĞİ (m)	152													
ADRES	...													
<b>E - KUYU YERİ KROKİSİ</b>														
<b>F - KUYU BAŞI KROKİSİ</b>														
<b>G - POMPA DURUMU</b>														
TİPİ	Dalgıç													
MOTORU	10,37 HP													
ÇEKİM	8,30 kW													
<b>MESUL ŞAHİSLER</b>														
MESLEĞİ	ADI SOYADI	RÜPLOMA NO	İMZA											
Jen.Müh.	Gülner Şenkalı	C.B. 11208												
Sondör	Tescil													
<table border="1"> <thead> <tr> <th>KUYU AÇILIŞINDA KARŞILAŞILAN ÖZELLİKLER</th> <th>KUYU ŞEMASI</th> <th>LİTOLOJİK KESİT</th> <th>FORMASYONUN LİTOLOJİK TARIFLI</th> </tr> </thead> <tbody> <tr> <td> <p><b>K</b></p> <p>Ölçeksiz</p> <p>Pafta NO : 0</p> <p>Ada No : 0</p> <p>Parsel No : 0</p> <p><b>KONTROL EDİLMİŞTİR.</b></p> <p>26-05-2014</p> <p>Yalın cıvarda kopuşu</p> <p><b>Erhan KAZANASMAZ</b></p> <p>Baş Mühendis</p> </td> <td> <p>13 inç</p> <p>225 mm</p> </td> <td> <p>20</p> <p>40</p> <p>60</p> <p>80</p> <p>100</p> <p>120</p> <p>140</p> <p>160</p> <p>180</p> <p>200</p> <p>220</p> <p>240</p> <p>260</p> <p>280</p> <p>300</p> <p>320</p> </td> <td> <p>Yamaç Molozu</p> <p>Nesjen Yaşlı Volkanikler;</p> <p>Volkanik Lav, Aglomera, Bazaltik Tuf</p> </td> </tr> </tbody> </table>							KUYU AÇILIŞINDA KARŞILAŞILAN ÖZELLİKLER	KUYU ŞEMASI	LİTOLOJİK KESİT	FORMASYONUN LİTOLOJİK TARIFLI	<p><b>K</b></p> <p>Ölçeksiz</p> <p>Pafta NO : 0</p> <p>Ada No : 0</p> <p>Parsel No : 0</p> <p><b>KONTROL EDİLMİŞTİR.</b></p> <p>26-05-2014</p> <p>Yalın cıvarda kopuşu</p> <p><b>Erhan KAZANASMAZ</b></p> <p>Baş Mühendis</p>	<p>13 inç</p> <p>225 mm</p>	<p>20</p> <p>40</p> <p>60</p> <p>80</p> <p>100</p> <p>120</p> <p>140</p> <p>160</p> <p>180</p> <p>200</p> <p>220</p> <p>240</p> <p>260</p> <p>280</p> <p>300</p> <p>320</p>	<p>Yamaç Molozu</p> <p>Nesjen Yaşlı Volkanikler;</p> <p>Volkanik Lav, Aglomera, Bazaltik Tuf</p>
KUYU AÇILIŞINDA KARŞILAŞILAN ÖZELLİKLER	KUYU ŞEMASI	LİTOLOJİK KESİT	FORMASYONUN LİTOLOJİK TARIFLI											
<p><b>K</b></p> <p>Ölçeksiz</p> <p>Pafta NO : 0</p> <p>Ada No : 0</p> <p>Parsel No : 0</p> <p><b>KONTROL EDİLMİŞTİR.</b></p> <p>26-05-2014</p> <p>Yalın cıvarda kopuşu</p> <p><b>Erhan KAZANASMAZ</b></p> <p>Baş Mühendis</p>	<p>13 inç</p> <p>225 mm</p>	<p>20</p> <p>40</p> <p>60</p> <p>80</p> <p>100</p> <p>120</p> <p>140</p> <p>160</p> <p>180</p> <p>200</p> <p>220</p> <p>240</p> <p>260</p> <p>280</p> <p>300</p> <p>320</p>	<p>Yamaç Molozu</p> <p>Nesjen Yaşlı Volkanikler;</p> <p>Volkanik Lav, Aglomera, Bazaltik Tuf</p>											



### POMPAJ PROGRAMI

Kuyu Sahibi: Aliğa Organize Sanayi Bölgesi Kuyu No:3

Koordinatı : 5 05 418 D. / 42 94 655 K.

### İŞLETME PROGRAMI

İşletme Debisi	.....12.....	lt/sn
Saatte çekilen su miktarı	.....43,2.....	ton
Günde çalışacağı süre	.....19,82.....	saat
Günde çekilen su miktarı	.....856,2.....	ton
Yılda çalışacağı süre	.....365.....	gün
Yılda çekilen su miktarı	.....312500.....	ton
Kullanma amacı	....Sanayi.....	

Güneri Sankaya  
Jec. Mül.



POMPA DENEYİ TUTANAĞI



İzmir ili, Aliaga ilçesi, Çoraklar mevkii/mahalle/köy, ...0..pafta, ...0.. ada, ...0.... parselde, 0.. m2 yüz ölçümüne sahip Aliaga Organize Sanayi Bölgesi Kuyu No:3'e ait arazide açılan 152 m'lik sondaj kuyusuna ait bilgiler aşağıdadır ;

POMPA VE KUYU BİLGİLERİ	
Kuyunun açıldığı tarih	Tescil
Kuyunun Arama/Kullanma Belge No	2.K.İz.20.77(4-4)
Kuyunun Koordinatları	5 05 418D/42 94 655K
Kuyu derinliği	152
Pompanın özelliği	Dalgıç
Süresi(saat)	8
Statik seviye(m)	0,70
Dinamik seviye(m)	14,50
Debi(lt/sn)	12,00

Tarih :25.02.2014

Teknik Sorumlusu  
Günat Senkul

Söndör  
Tescil

Belge No: 1001  
Aliaga Organize Sanayi Bölgesi Kuyu No:3

DSİ Genel Müdürlüğü  
2.Bölge Müdürlüğü İzmir

Form No: 2.7.4  
Belge No: 02.3510.007.K.256688  
Belge Tarihi: 26.05.2014

64102

YERALTISUYU KULLANMA BELGESİ

1. Belge Sahibi :  
T.C. Kimlik Numarası  
Adresi

ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ  
(4)  
(520069145)  
İZMİR-ÇANAKKALE E87 KARAYOLU 67. KM 107 SK. NO:1 ALİAĞA/İZMİR

27-05-2014

2. Teknik Sorumlu :

a) Adı Soyadı : GÜNER ŞENKALFA  
b) Mesleği : (JEOLOJİ MÜHENDİSİ)  
c) Diploma-Oda Sicil No : 3621  
d) Adresi : ÇAMDIRI MAH. FATİH CAD. AKÇABALI İŞ HANI NO:25 KAT:2 D.:5  
BORNova/İZMİR

3. Sondör Kuyucu Galerici :

a) Adı Soyadı : B.S.  
b) Mesleği : Sondör  
c) Diploma-Oda Sicil No : 0  
d) Adresi :

4. Kuyu/Galeri Yeri :

İli : İzmir  
İlçesi : Aliağa  
Beldesi, Mahallesi veya  
Köyü : ÇORAKLAR  
Kuyu'nun DSİ No'su : 64102  
Koordinatı : 505621 - 4294676  
Havza Adı : 4- Kuzey Ege Havzası  
Ova Adı :

5. Kuyu/Galeri Verimi :

Pompa/jla : 12 lt/sn  
Artezien : lt/sn  
Statik Seviye : 4,5 m  
Dinamik Seviye  
(pompa/jla) : 18 m  
Çekilecek Su Miktarı : 857,00 Ton/gün - 312.500,00  
Ton/yıl  
Çekilecek suyu temine  
yetecek enerji miktarı : 65155 kWh  
Sayaç Numarası : BAYLAN-741  
Kullanma Amacı : SANAYİ SUYU

28.02.2014 tarihli dilekçe ile yukarıda belirtilen **Derin Kuyu** kullanmak istediğini belirten **ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ(4)**

müracaatı üzerine yapılan inceleme sonucu, istojin kanun, tüzük ve hükümlerine uygun olduğu anlaşıldığından, suyun yalnız **SANAYİ SUYU** amacıyla kullanılması şartıyla bu kullanma belgesi verilmiştir.

**BU BELGE KUYUYA TEKNİK  
ŞARTNAMEYE UYGUN  
ALGILAMALI VE ÖN  
YÜKLEMELİ SU SAYACI  
YERİNE KURULMASI ŞARTI İLE  
VERİLMİŞTİR.**

Ekiz:

- 1) Kuyu kütüğü (3 adet)
- 2) Pompa programı (3 adet)
- 3) Analiz raporu (5 adet)
- (kullanma amacına uygun)
- 4) Kuyu açılan arazinin onaylı tapu fotokopisi

DSİ 2. Bölge Md.

**Halit EKEROL**  
Bölge Müdür Yardımcısı

**Not :** Kullanma belgesi; "ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ" ne ait 9.220.000 m2 alan içinde ve belirtilen koordinatlarda bulunan, O.S.B. nin su ihtiyacını karşılamak için kullanılan kuyudan yer altı suyu temini amacıyla düzenlenmiştir. 30.04.2004 tarih ve II.K.İz.20.77 (4-4) nolu kullanma belgesi "Aliağa Organize Sanayi Belge Müdürlüğü" adına kayıtlı iken sayaç takılması nedeni ile iptal edilmiştir. Belge sayaç markası ve seri no su "ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ (4)" adına, 02.3510.007.K.256688 belge numarası ile tekrar düzenlenmiştir. Kullanmakta olduğunuz uzaktan okumalı su sayacının arıza nedeniyle devreden çıkması durumunda; arıza nedenini, tarihlerini ve bu süre zarfında kullanmış olduğunuz yeraltı suyu miktarını açıklayan belgeyi jeoteknik hizmetler ve yeraltı suları şube müdürlüğünün dikkatine açılmasıyla 0(232) 435 37 42 no lu telefon numarasına faks olarak gerektirir. Sayaçta meydana gelecek arızalarda teknik servis ile iletişime geçilmelidir. Tahsis edilen yeraltı suyunun miktarı izlenecektir. Yıllık tüketimlerine göre gerekli düzenlemeler yapılabilmektedir. Suyun tasarruflu kullanımı için gerekli antma, yeniden kullanım, geri dönüşüm gibi önlemler alınmalıdır.

SK



# KUYU KÜTÜĞÜ

● Aliğa Organize Sanayi Bölgesi (Kuyu No:4)

<b>A - GENEL DURUM</b>		<b>E - KUYU YERİ KROKİSİ</b>							
Mevkii	Aliğa Organize Sanayi Bölgesi (Kuyu No:4)								
İli	İzmir								
İlçesi	Aliğa								
Bucak	...								
Köy	Çoraklar								
Koordinat	S 05 622 D / 42 94 676 K.								
Kuyu Zemin Kotu	24								
Açılış Amacı	Sanayi								
Başlangıç Tarihi	Tescil								
Bitiş Tarihi	...								
Arama belgesi Tarihi ve No	...								
Kullanma Belge Tarihi ve No	...								
<b>B - SU VERİM TECRÜBESİ</b>		<b>F - KUYU BAŞI KROKİSİ</b>							
AKIFER	METRELER ARASI	SÜRE	SAAT	NE İLE YAPILDIĞI	STATİK SEVİYE	DİNAMİK SEVİYE	DERİ (lt/100)		
I									
II									
MÜŞTEREK	0	0	0	Delge	4.5	10.4	12		
<b>C - İNKİŞAF</b>		<b>G - POMPA DURUMU</b>							
NE İLE YAPILDIĞI	Tescil	TİPİ	Delge						
TİPİ	...	MOTORU	10,37 HP						
SÜRESİ	...	CEKİM	9,30 kW						
<b>D - AÇAN FİRMA</b>		<b>MESUL ŞAHISLAR</b>							
ADI SOYADI	Tescil	MESLEĞİ	AD SOYADI	DİPLOMA NO	İMZA				
MAKİNESİNİN TİPİ	...	Jco.Müh.	Günce Şenkalfa	Ç.B. 11208					
SONDAJ DERİNLİĞİ (m)	182								
ADRES	...	Şimdiki	Tescil						
<b>KUYU AÇILIŞINDA KARŞILAŞILAN ÖZELLİKLER</b>		<b>KUYU ŞEMASI</b>		<b>LİTOLOJİK KEŞİT</b>		<b>FORMASYONUN LİTOLOJİK YATIRI</b>			
<p>K ↑</p> <p>Ölçeksiz</p> <p>Pafta NO : 0</p> <p>Ada No : 0</p> <p>Parcel No : 0</p> <p>KONTROL EDİLMİŞTİR.</p> <p>26-05-2014</p> <p>Yakın civarda koruyucu kuyu yoktur.</p>		<p>DELİK ÇAP (cm)</p> <p>TECRÜBİ ÇAP (cm)</p> <p>15 inç</p> <p>225 mm</p>		<p>30</p> <p>40</p> <p>60</p> <p>80</p> <p>100</p> <p>120</p> <p>140</p> <p>160</p> <p>180</p> <p>200</p> <p>220</p> <p>240</p> <p>260</p> <p>280</p> <p>300</p> <p>320</p>		<p>Yamaç Molozu</p> <p>Nesjen Yağlı Volkanikler;</p> <p>Volkanik Lav, Aglomera, Bazaltik Tuf</p>			



## POMPAJ PROGRAMI

Kuyu Sahibi: Aliğa Organize Sanayi Bölgesi Kuyu No:4

Koordinatı : 5 05 622 D. / 42 94 676 K.

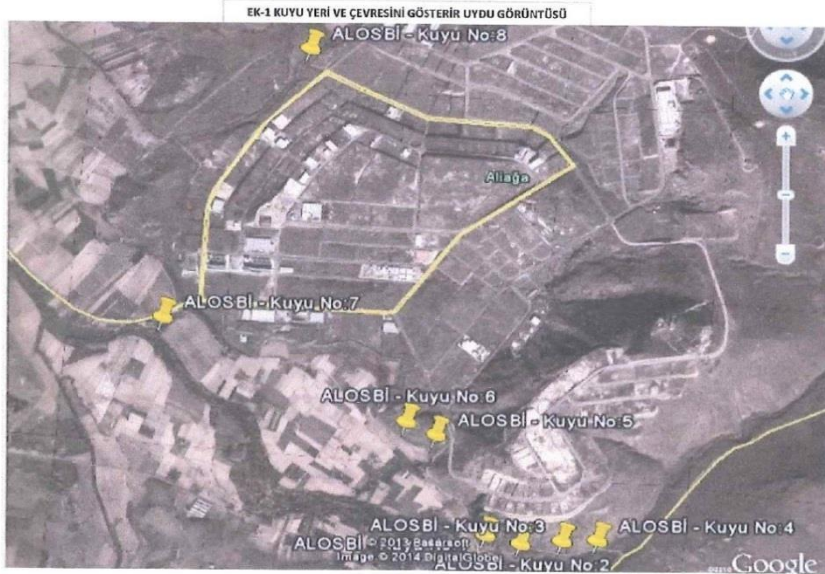
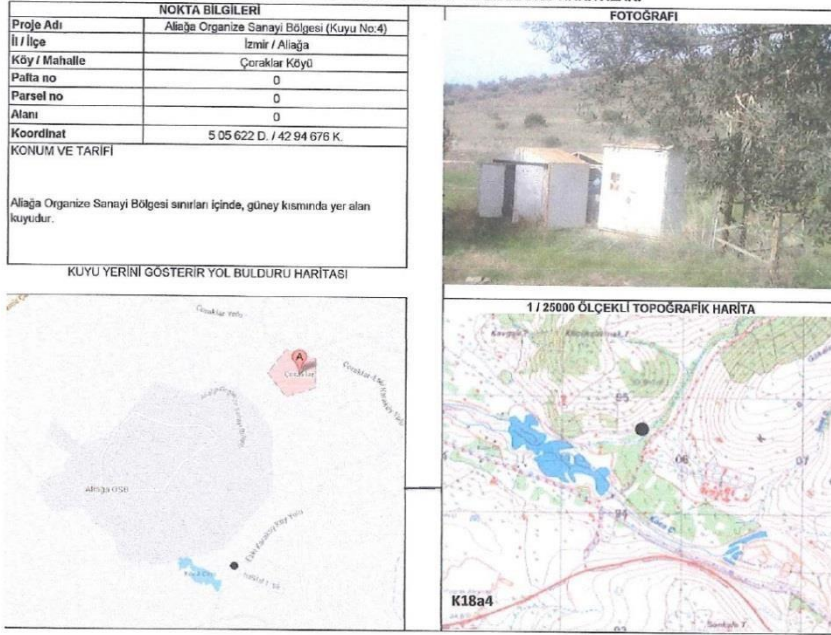
## İŞLETME PROGRAMI

İşletme Debisi	:.....12.....	lt/sn
Saatte çekilen su miktarı	:.....43,2.....	ton
Günde çalışacağı süre	:.....19,82.....	saat
Günde çekilen su miktarı	:.....856,2.....	ton
Yılda çalışacağı süre	:.....365.....	gün
Yılda çekilen su miktarı	:...312500.....	ton
Kullanma amacı	:...Sanayi.....	

Güner Şenkalfa  
Jeo. Müh.



# KUYU YERİNİ GÖSTERİR FOTOĞRAF VE BULDURU HARİTALARI



POMPA DENEYİ TUTANAĞI



İzmir ili, Aliğa ilçesi, Çoraklar mevkii/mahalle/köy, ...0..pafta, ...0.. ada, ...0.... parselde, 0.. m2 yüz ölçümüne sahip Aliğa Organize Sanayi Bölgesi Kuyu No:4'e ait arazide açılan 152 m'lik sondaj kuyusuna ait bilgiler aşağıdadır ;

POMPA VE KUYU BİLGİLERİ	
Kuyunun açıldığı tarih	Tescil
Kuyunun Arama/Kullanma Belge No	2 K. İz 20.77(4-4)
Kuyunun Koordinatları	5 05 622D/42 94 676K
Kuyu derinliği	152
Pompanın özelliği	Dalgıç
Süresi(saat)	8
Statik seviye(m)	4,50
Dinamik seviye(m)	18,40
Debi(lt/sn)	12,00

Tarih :25.02.2014

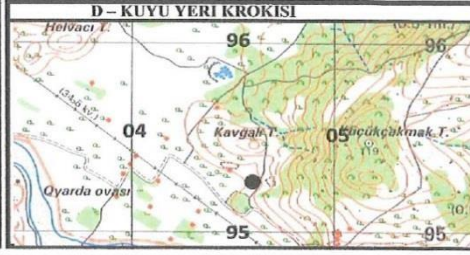
Teknik Sorumlu  
Güner Şenkalfa

Sondör  
Tescil

Belge sahibi  
Aliğa Organize Sanayi Bölgesi Kuyu No:4

ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ (ALOSBİ)-1 'ne ait KUYU KÜTÜĞÜ

A- GENEL DURUM			
Mevkii	UZUNBURUN		
İli	İZMİR		
İlçesi	ALİAĞA		
Bucağı	ÇORAKLAR		
Mahalle/Köyü	ÇORAKLAR		
Koordinatı	504617 D	4295265 K	
Paftası	K18 a4		
Kuyu zemin rakımı			
Açılış amacı	SANAYİ		
Başlangıç/bitiş tarihi	10.09.2018	24.09.2018	
Arama Belgesi	02.3510.007.A.344053		
No su ve tarihi	25/07/18		



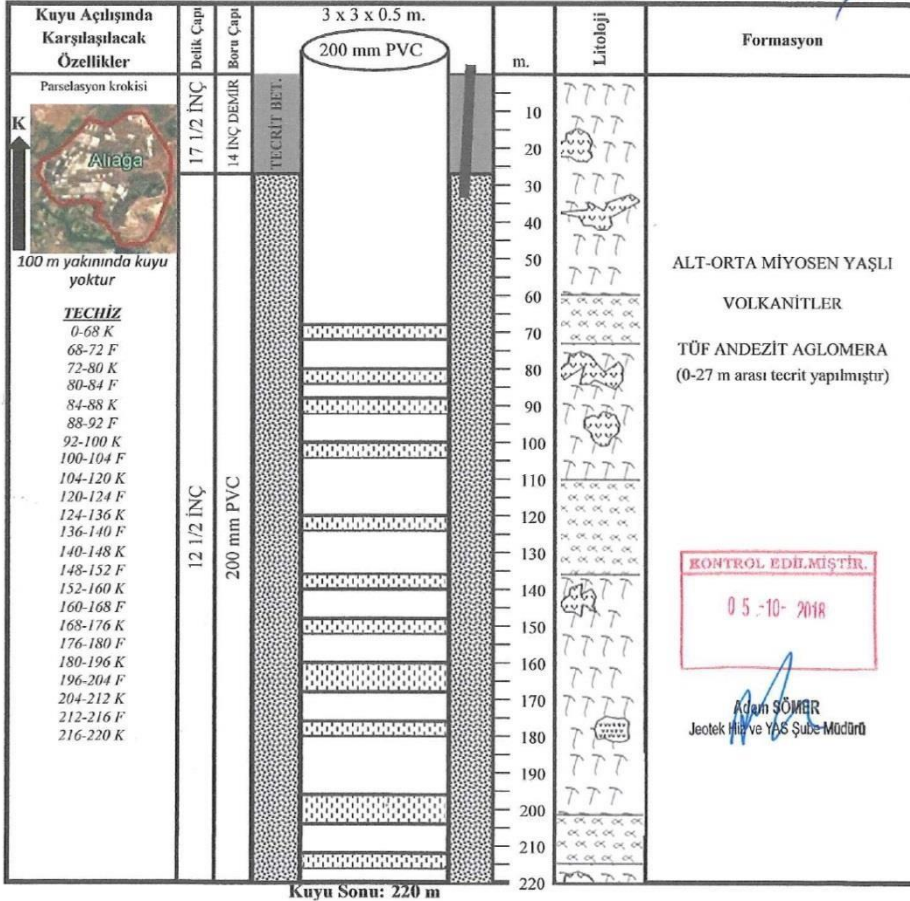
B - SU VERİM TECRÜBESİ					
Akifer	Metreler arası	Süre saat	Ne ile Yapıldığı	Statik seviye	Dinamik seviye
I	0- 220	8	KOMP	8	20
II					

E - İNKİŞAF	
Ne ile Yapıldığı	KMPR
Tipi	Açık
Süresi	4 Saat

F - POMPA DURUMU	
Tipi	Dalgıç pompa
Motoru	20 HP
Celım	15,0 l/sn

C - AÇAN FIRMA	
Adı	İŞBİTİREN SONDAJ
Makınanın tipi	Rotary
Sondaj (m)	220 m
Adres	K.EVREN SAN.SİT. 5307 SK.NO:104/A MANİS

G - MESUL ŞAHİSLAR			
Mesleği	Adı soyadı	Dip. No	İmzası
Jeo.Müh.	Emel GÖÇEN	919	
Sondör	B.İŞBİTİREN	2003.İİ R 2682	



POMPA DENEYİ TUTANAĞI



İZMİR ili, ALIAĞA ilçesi ÇORAKLAR mahalle - pafta, - ada, - parselde  
1 m<sup>2</sup> yüzölçümüne sahip ALIAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ (ALOSBİ)-1 na ait arazide açılan  
220 m 'lik sondaj kuyusuna ait bilgiler aşağıdadır.

POMPA VE KUYU BİLGİLERİ	
Kuyunun açıldığı tarih	10.09.2018 24.09.2018
Kuyunun Arama/Kullanma Belge No	02.3510.007.A.344053
Kuyunun Koordinatları	504617 D 4295265 K
Kuyu derinliği	220 m
Pompanın özelliği	20 HP
Süresi(saat)	
Statik seviye(m)	8
Dinamik seviye(m)	20
Debi(lt/sn)	15,0

Tarih 24.09.2018

Teknik Sorumlu  
JEO.MÜH.EMEL GÖÇEN

Sondör  
BEKİR İSBİTİREN

Belge sahibi  
ALIAĞA KİMYA İHTİSAS VE KARMA  
ORGANİZE SANAYİ BÖLGESİ (ALOSBİ)-1  
adına V.

YEREL SONDAJ  
MÜHENDİSLİK HİZMETLERİ  
Emel GÖÇEN  
Evk. 12/18 Sk.No:8  
Etiler/Beşiktaş/İZMİR  
Bornoova V.D. 88350169194  
Kend. Etiler/Beşiktaş Sk. 5307 Sk. No: 24A (1303/8)  
Tel: 0212 292 259 04 Fax: 0212 292 259 04

<b>RAPOR NO</b>	: G - K - 1099
<b>NUMUNE SAHİBİ</b>	: ALOSBİ Aİlağa Kimya İhtisas ve Karma Org.San.Böl.
<b>NUMUNE ADRESİ</b>	: Çoraklar Mah. - Aİlağa - İZMİR
<b>NUMUNE ALINAN YER</b>	: Sondaj
<b>NUMUNENİ GETİREN</b>	: Emel GÖÇEN -Yerel Sondaj Mühendislik
<b>NUMUNENİN CİNSİ / MİKTAR</b>	: Sulama / 500 ml
<b>NUMUNENİN ALINDIĞI TARİH</b>	: Beyan edilmedi
<b>LABORATUVARA GELİŞ TARİHİ</b>	: 01.10.2018
<b>ÇALIŞMA BAŞLANGIÇ / BİTİŞ TARİHİ</b>	: 01.10.2018

BAKILAN PARAMETRELER	BULUNAN DEĞER	METOT	RAPORLAMA LİMİTİ	STANDART
Sodyum (Na <sup>+</sup> )	2,85 me/L	Fotometrik	0,004 me/L	TS 4530
Potasyum (K <sup>+</sup> )	0,30 me/L	Fotometrik	0,002 me/L	TS 4530
*Kalsiyum (Ca <sup>+2</sup> )	3,85 me/L	Titrimetrik	0,25 me/L	SM 3500-Ca B
*Magnezyum (Mg <sup>+2</sup> )	1,68 me/L	Hesaplama	---	SM 3500-Mg B
Karbonat (CO <sub>3</sub> <sup>-</sup> )	Tespit edilemedi	Titrimetrik	---	SM 2320 B.
Bikarbonat (HCO <sub>3</sub> <sup>-</sup> )	4,82 me/L	Titrimetrik	----	SM 2320 B.
*Klorür (Cl <sup>-</sup> )	1,12 me/L	Titrimetrik	0,056 me/L	SM 4500-Cl <sup>-</sup> B
*Sülfat (SO <sub>4</sub> <sup>-2</sup> )	0,68 me/L	Türbidimetrik	0,1 me/L	SM 4500 - SO <sub>4</sub> <sup>-2</sup> E.
*pH	7,5	Elektrometrik	0,0 pH	TS 3263 ISO 10523
*Elektriksel İletkenlik	652 µS/cm	Kondüktivimetrik	0,0 µS/cm	TS 9748 EN 27888
*Total Tuz	325 mg/L	Hesaplama	0,0 mg/L	TS 9748 EN 27888
Sodyum Adsorbsiyon Oranı (SAR)	1,71	Hesaplama	----	TS 7739
Artık Sodyum Karbonat	< 0,1 me /L	Hesaplama	----	TS 7739

\*Akreditasyon kapsamındadır.

**SUYUN SINIFI : A1- T2**

Sınıf açıklamaları raporun arkasındadır.

Mühür

Tarih  
01.10.2018

Analiz Yapan  
Kimyager Ali Osman COŞKUN

Kimyager / Biyolog Ebru SOYDOĞAN  
Laboratuvar Müdürü



*Bu analiz raporu Laboratuvarımıza gelen numuneye aittir.*

Bulunan değer sütununda (\*\*) olan parametrelerin ölçümleri sahada numuneyi alan personel tarafından yapılmıştır.

Bu rapor ve sonuçları İÇL Su Analiz Laboratuvarının izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz ve ya yayınlanamaz.

*Analiz yapılan numunede, numunenin alındığından Laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenilen grup ve parametrelerin belirlenmesinin detayları aşağıdaki gibidir.*

*belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir.*

İmzasız ve mülkiyetsiz analiz sonuç raporları geçersizdir. Rapor numarasının başında yer alan (G veya R) harfi raporun güncelliğini belirtir.

**ADRES :**Anafartalar Cad. 781/201 Basmane – İZMİR

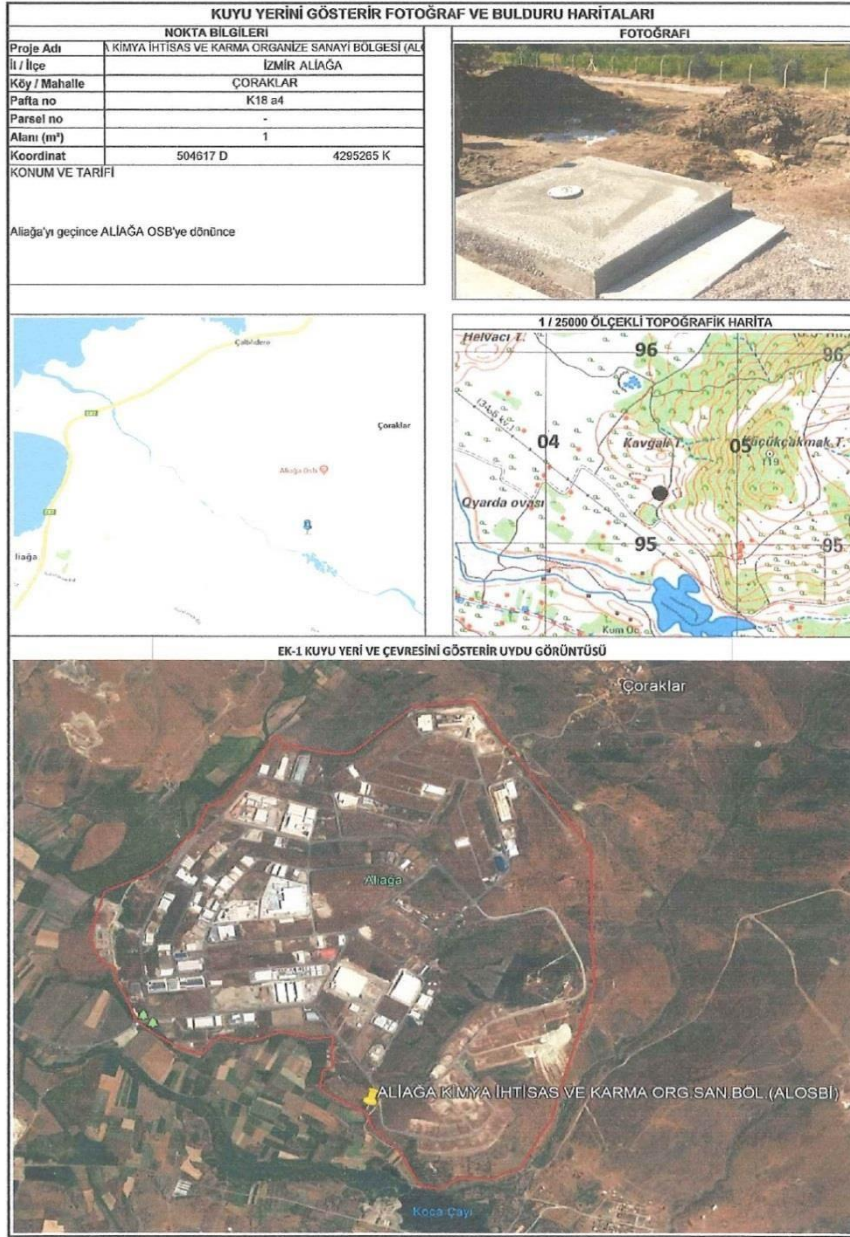
Tel : (533) 734 32 72 Fax : (232) 484 00 03

Web : [icl.com.tr](http://icl.com.tr)

e.mail : [icl@icl.com.tr](mailto:icl@icl.com.tr)

F-346 /Bas.02/Rev.05/11.16

 $1/2$



## POMPAJ PROGRAMI

Kuyu Sahibi : ALIAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ (ALOSBİ)-1

Kuyu Yeri : ÇORAKLAR - ALIAĞA - İZMİR

## İŞLETME PROGRAMI

İşletme Debisi	:	15,0	lt/sn
Saatte Çekilecek su Miktarı	:	54,00	ton/saat
Günde Çalışacağı Süre	:	20,0	saat
Günde Çekilecek Su Miktarı	:	1080,0	ton/gün
Yılda Çalışacağı Süre	:	365	gün
Yılda Çekilecek Su Miktarı	:	394200	ton/yıl
Kullanma Amacı	:	Sanayi	

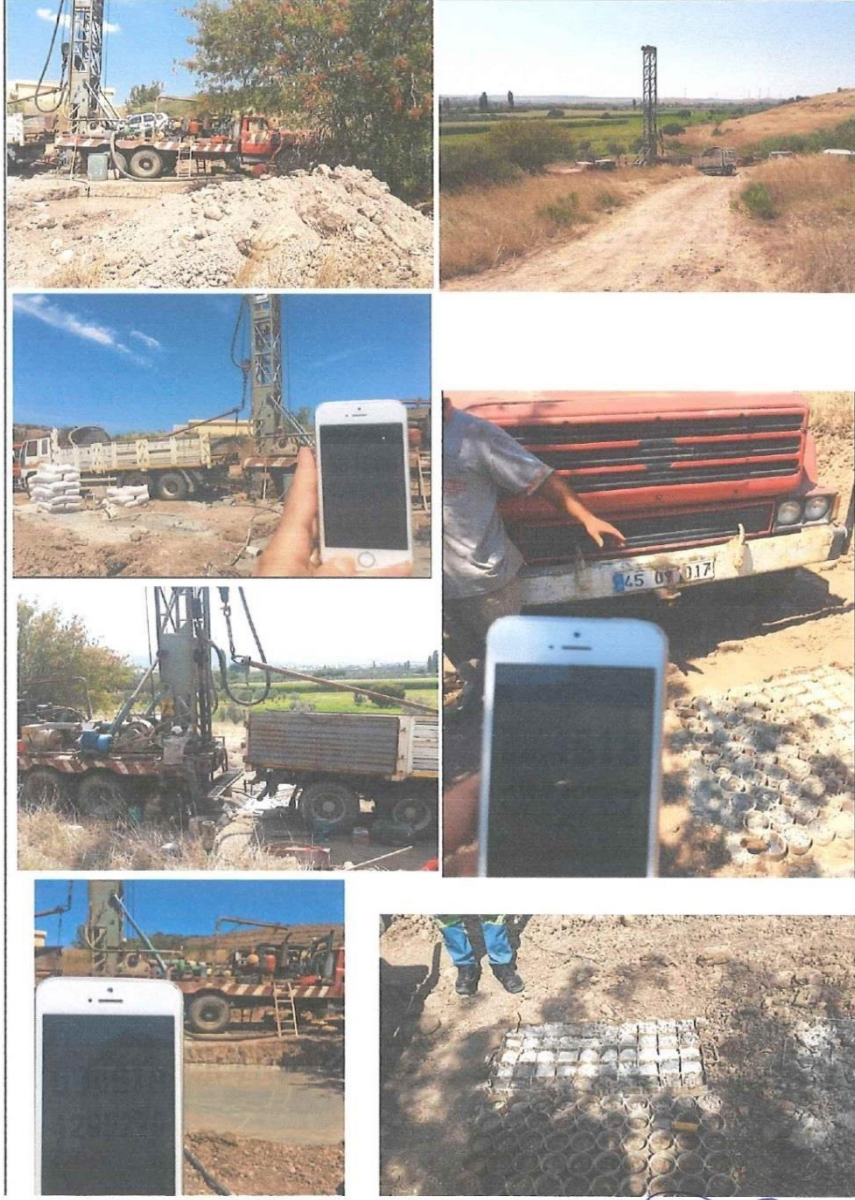
## TEKNİK SORUMLU

Emel GÖÇEN  
Jeoloji Mühendisi

YERKEM SÜNDÜR  
MÜHENDİSLİK HİZMETLERİ  
Emel GÖÇEN  
Evka-3 Mah. 127/18 Sk.No:8  
Bornova-İZMİR  
Bornova V.D. 38350169194



ARMA ORGANİZE SANAYİ BÖLGESİ (ALOSBİ)-1 KUYUSUNA AİT SONDAJ MAKİNASI FOTOĞRAFLARI



PEREL SONDAJ  
MÜHENDİSLİK HİZMETLERİ  
Emel GÖÇEV  
Evke-3 Mh. 127/18 Sk.No:8  
Bornova-İZMİR  
Bornova V.D. 38350169194

## TANITIM FORMU

### TEKNİK SORUMLUNUN

ADI SOYADI : EMEL GÖÇEN - 0.535.3204911  
MESLEĞİ : JEOLJİ MÜHENDİSİ  
ADRES VE TELEFONU : EVKA-3 MH. 127/18 SK. NO:8 BORNOVA İZMİR  
VERGİ DAİRESİ : BORNOVA V.D.  
VERGİ NUMARASI : T.C. 38350168194

### SONDAJ KUYUSUNU AÇTIRANIN

ADI SOYADI : ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ (ALOSBİ)  
ADRESİ : ÇORAKLAR MH. 5005 SK. NO:8/1/1 ALİAĞA İZMİR  
VERGİ DAİRESİ : ÇAKABEY VD  
VERGİ NUMARASI : 0520069145

### SONDAJ KUYUSUNU AÇANIN

FİRMA ADI : İŞBİTİREN SONDAJ  
ADRESİ : K.EVREN SAN.SİT. 5307 SK.NO:104/A MANİSA  
VERGİ DAİRESİ : MESİR V.D.  
VERGİ NUMARASI : 27629225904  
SONDÖRÜN ADI : BEKİR İŞBİTİREN  
SONDÖR BELGE NO : 2003.II R 2682

### KUYUYU AÇACAK SONDAJ MAKİNASININ

TİPİ : Rotary  
PLAKA NUMARASI :

Yukarıda , düzenlemiş olduğum ve ilgili belge ekinde Devlet Su İşlerine beyan etmiş olduğum tüm bilgiler doğrudur.

### TEKNİK SORUMLU

Kaşe ve imza  
JEO.MÜH.EMEL GÖÇEN

VEREL SONDAJ  
MÜHENDİSLİK HİZMETLERİ  
Emel GÖÇEN  
Evka-3 Mh.127/18 SK.No:8  
BornoVA-İZMİR  
BornoVA V.D. 38350168194



## POMPAJ PROGRAMI

Kuyu Sahibi: Aliğa Organize Sanayi Bölgesi Kuyu No:6

Koordinatı : 5 04 412 D. / 42 95 359 K.

## İŞLETME PROGRAMI

İşletme Debisi	:.....24.....	lt/sn
Saatte çekilen su miktarı	:.....86,4.....	ton
Günde çalışacağı süre	:.....19,82.....	saat
Günde çekilen su miktarı	:.....1712,3.....	ton
Yılda çalışacağı süre	:.....365.....	gün
Yılda çekilen su miktarı	:...625000.....	ton
Kullanma amacı	:...Sanayi.....	

Güner Şenkalfa  
Jeo. Müh.



# KUYU YERİNİ GÖSTERİR FOTOĞRAF VE BULDURU HARİTALARI

### NOKTA BİLGİLERİ

Proje Adı	Aliağa Organize Sanayi Bölgesi (Kuyu No:6)
İl / İlçe	İzmir / Aliağa
Köy / Mahalle	Çoraklar Köyü
Pafta no	0
Parsel no	0
Alanı	0
Koordinat	5 04 412 D. / 42 95 359 K.

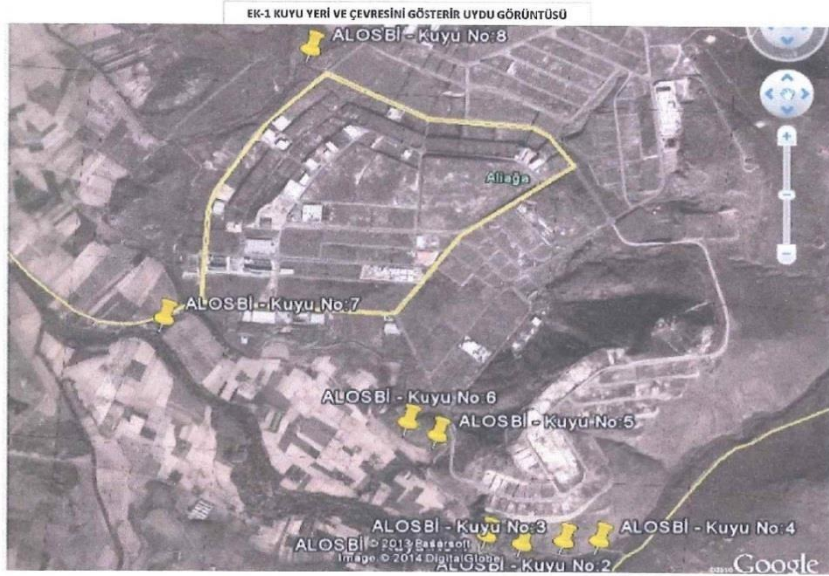
### KONUM VE TARIFI

Aliağa Organize Sanayi Bölgesi sınırları içinde, batı kısmında yer alan kuyudur.

### KUYU YERİNİ GÖSTERİR YOL BULDURU HARİTASI

### FOTOĞRAFI

### 1 / 25000 ÖLÇEKLİ TOPOĞRAFİK HARİTA



POMPA DENEYİ TUTANAĞI



İzmir ili, Aliaga ilçesi, Çoraklar mevkii/mahalle/köy, ...0..pafta, ...0.. ada, ...0.... parselde, 0.. m2 yüz ölçümüne sahip Aliaga Organize Sanayi Bölgesi Kuyu No:6' e ait arazide açılan 140 m'lik sondaj kuyusuna ait bilgiler aşağıdadır ;

POMPA VE KUYU BİLGİLERİ	
Kuyunun açıldığı tarih	Tescil
Kuyunun Arama/Kullanma Belge No	2 K. İz.20.112(4-4)
Kuyunun Koordinatları	5 04 412D./42 95 359K
Kuyu derinliği	140
Pompanın özelliği	Dalgıç
Süresi(saat)	8
Statik seviye(m)	8,15
Dinamik seviye(m)	14,00
Debi(lt/sn)	24,00

Teknik Sorumlusu  
Güner Şenkal

Söndör  
Tescil

Belge sahibi  
Aliaga Organize Sanayi Bölgesi Kuyu No:6

Tarih :25.02.2014

T.C.  
DSİ GENEL MÜDÜRLÜĞÜ  
II. BÖLGE MÜDÜRLÜĞÜ

2179

Belge No : II.K.İz.20.217 (4-4)  
Belge Tarihi : 10.04.2009

10-04-2009

#### YERALTISUYU KULLANMA BELGESİ

1.Belge Sahibi : **ALOSBİ-Aliğa Organize Sanayi Bölgesi**  
: Atatürk Blv.No:372/1 K.7 D.7A.Blok Alsancak / İZMİR

2.Kuyu/Galeri Yeri :  
İli : İZMİR  
İlçesi : Aliğa  
Bucağı : ---  
Mahallesi veya Köyü : Çoraklar Köyü  
Kuyunun DSİ No'su : 2179

3.Kuyu/Galeri Verimi :  
Pompajla : 14 lt/sn  
Artezyen : - lt/sn.  
Statik Seviye : 2 m  
Dinamik Seviye(pompajla) : 18 m  
Çekilecek su miktarı : 1000(14 lt/sn) Ton/gün 100000 Ton/yıl  
Kullanma Amacı : **Kullanma Suyu**

03.04.2009 tarihli dilekçe ile yukarıda belirtilen kuyuyu kullanmak istediğini bildiren **ALOSBİ-Aliğa Organize Sanayi Bölgesi** 'nin müracaatı üzerine yapılan inceleme sonucu, isteğin kanun, tüzük ve yönetmelik hükümlerine uygun olduğu anlaşıldığından, suyun yalnız **Kullanma Suyu** amacıyla kullanılması şartıyla bu kullanma belgesi verilmiştir.

EK : 1 adet onaylı proje

  
DSİ  
II. Bölge Müdürü  
Hüseyin ZERİFA  
Bölge Müdür Yardımcısı

NOT: 1- DSİ Yeraltısuyu -Arama ve Kullanma  
Belgelerinden ücret almamaktadır.

DSİ İş No. : 11.5 / 127-97

O-M / 124.08.067 / 72

YRTSULR-Y.D.



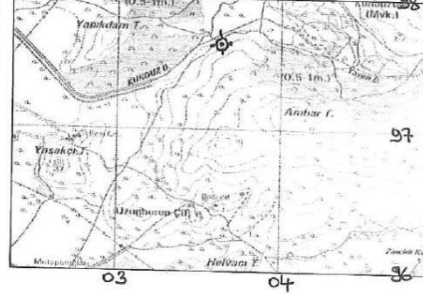
## KUYU KÜTÜĞÜ

### A- GENEL DURUM

Mevkii :	KUNDUZ ÇAYI
İli :	İZMİR
İlçesi :	ALİAĞA
Bucağı :	-----
Köyü :	-----
Koordinatı K18a4	(503627 D-4297651 K)
Kuyu zemin rakımı	-----
Açılış amacı	Kullanma suyu
Başlangıç tarihi/ Bitiş tarihi	07.03.09-12.03.2009
Arama belgesi Nosu ve tarihi	II.A.İz.20.256(4-4)6.03.09

### ALOSBİ\_AliğaOrganizeSanayiBölgesi

#### D-KUYU YERİ KROKİSİ (503627 D-4297651K)



### B-SU VERİM TECRÜBESİ

Akifer	Metreler arası	Süre saat	Ne ile yapıldığı	Statik seviye	Dinamik seviye	Debi (lt/sn)
I	0-60	8	kmpresör	2	18	14
II						

### E- İNKİŞAF

### F-POMPA DURUMU

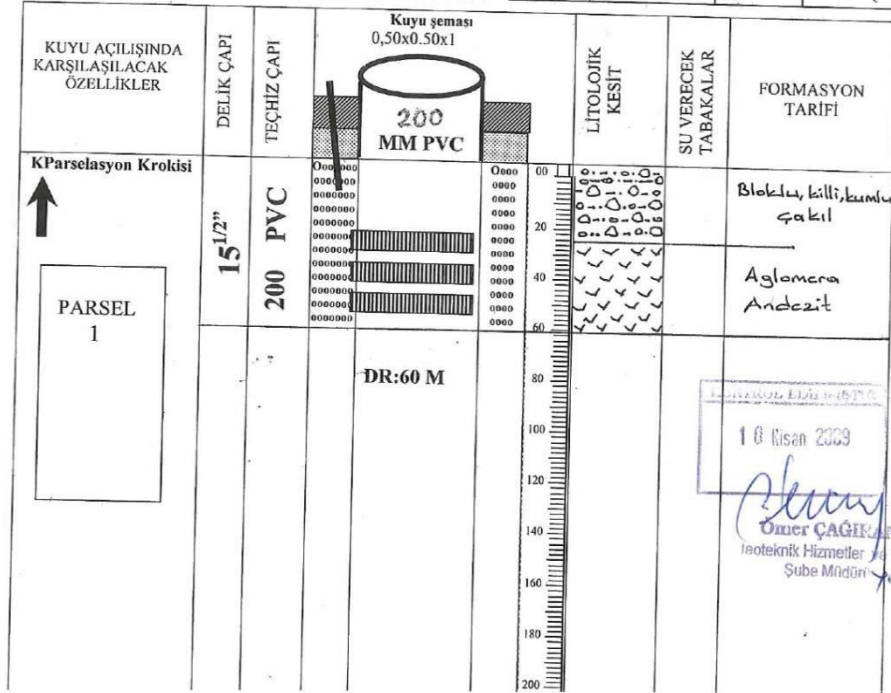
Ne ile yapıldığı	KMPRS	Tipi	DP
Tipi	Açık	Motoru	15 HP
Süresi	8 saat	Çekim	14 Lt/sn

### C- AÇAN FİRMA

Adı	ÜN-SAL MAKİNA SONDAJ
Makinanın tipi	Rotary
Sondaj (m)	60 m
Adres	Yenişehir/İZMİR

### G- MESUL SAHİSLAR

Mesleği	Adı Soyadı	Dip. No.	İmzası
JEO. MÜH	S.KOÇYER	471	
Sondör	A.YILMAZ	81-İIR 1050	



## SULAMA SUYU ANALİZ RAPORU

T.C.

İZMİR VALİLİĞİ  
İL ÖZEL İDARESİİZMİR

SUYUN ALINDIĞI İL - İLÇE: İzmir-Aliağa  
 SUYUN ALINDIĞI KÖY-MEVKİİ: Aliağa Organize Sanayi Bölgesi / Kunduz-1  
 SUYUN NEREDEN ALINDIĞI: Sondaj  
 NUMUNEYİ ALANIN ADI-SOYADI: Süleyman KOÇYER  
 NUM.LAB.GELİŞ TARİHİ: 1/4/2009  
 LAB NO : 39 ADA NO :  
 RAPOR TARİHİ : 2/4/2009 PARSEL NO :

KATYONLAR (Me/Lt)		ANYONLAR (Me/Lt)	
SODYUM	0.78	KARBONAT	0.00
POTASYUM	0.10	BİKARBONAT	6.40
KALSİYUM	4.08	KLORÜR	0.84
MAĞNEZYUM	2.29	SÜLFAT	0.01
TOPLAM	7.25	TOPLAM	7.25
pH	7.08	ARTIK SODYUM KARBONAT	0.03
ELEKTRİKSEL İLETKENLİK (mikrosiemens)	725.00	SAR	0.44
TOTAL TUZ (ppm)	543.75		

SUYUN SINIFI: T2 A1

GEREKLI AÇIKLAMALAR RAPORUN ARKASINDADIR.

Analizleri Yapan

Mustafa ÖĞÜT

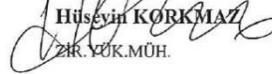
KİMYAGER



Lab. İdr. Sorumlusu

Hüseyin KORKMAZ

ZİR. YÜK. MÜH.




#### POMPAJ PROGRAMI

Kuyu Sahibi : ALOSBI-Altıağa Organize Sanayi Bölgesi  
Kuyu Yeri : ALİAĞA /İZMİR

#### İŞLETME PROGRAMI

İşletme Debisi : 14 Lt/sn  
Saatte Çekilecek Su Miktarı : 50 ton/saat  
Günde Çalışacağı Süre : 20 Saat  
Günde Çekilecek Su Miktarı : 1000 ton/gün  
Yılda Çalışacağı Süre : 100gün  
Yılda Çekilecek Su Miktarı : 100 000 ton/yıl  
Kullanma Amacı : KULLANMA SUYU

Teknik Sorumlu

Süleyman KOÇYER  
Jeoloji Mühendisi

**BATI SONDAJ**

SÜLEYMAN KOÇYER  
1593/1 Sk.No:63 K:4/31 Manavkuyu  
Tel:232.4616224 Fax:3882227  
K.Y. No: V.D. A.C.No:3837 416 7302



T.C.  
DSİ GENEL MÜDÜRLÜĞÜ  
II. BÖLGE MÜDÜRLÜĞÜ

2180

Belge No : II.K.İz.20.216 (4-4)  
Belge Tarihi : 10.04.2009

10-04-2009

#### YERALTISUYU KULLANMA BELGESİ

1. Belge Sahibi : **ALOSBİ-Aliğa Organize Sanayi Bölgesi**  
: Atatürk Blv.No:372/1 K.7 D.7A.Blok Alsancak / İZMİR

2. Kuyu/Galeri Yeri :  
İli : İZMİR  
İlçesi : Aliğa  
Bucığı : ----  
Mahallesi veya Köyü : Çoraklar Köyü  
Kuyunun DSİ No'su : 2180

3. Kuyu/Galeri Verimi :  
Pompajla : 8 lt/sn  
Artezyen : - lt/sn.  
Statik Seviye : 5 m  
Dinamik Seviye(pompajla) : 38 m  
Çekilecek su miktarı : 560(8 lt/sn) Ton/gün 56000 Ton/yıl  
Kullanma Amacı : **Kullanma Suyu**

03.04.2009 tarihli dilekçe ile yukarıda belirtilen kuyuyu kullanmak istediğini bildiren **ALOSBİ-Aliğa Organize Sanayi Bölgesi** 'nin müracaatı üzerine yapılan inceleme sonucu, isteğin kanun, tüzük ve yönetmelik hükümlerine uygun olduğu anlaşıldığından, suyun yalnız **Kullanma Suyu** amacıyla kullanılması şartıyla bu kullanma belgesi verilmiştir.

EK : 1 adet onaylı proje

  
DSİ  
II. Bölge Müdürü  
Hüseyin ZERMAN  
Bölge Müdür Yardımcısı

NOT: 1- DSİ Yeraltısuyu -Arama ve Kullanma  
Belgelerinden ücret almamaktadır.

DSİ İş No. : 11.5 / 127-97

O-M / 124.08.067 / 72

YRTSULR-Y.D.



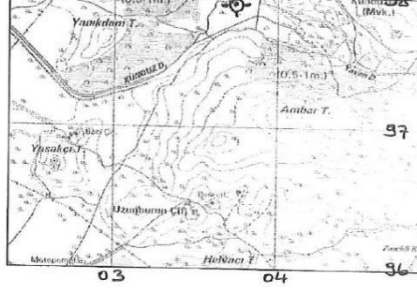
## KUYU KÜTÜĞÜ

### A- GENEL DURUM

Mevkii :	KUNDUZ ÇAYI
İli :	İZMİR
İlçesi :	ALIAĞA
Bucağı :	-----
Köyü :	-
Koordinatı K18a4 :	(503810 D-4297873 K)
Kuyu zemin rakımı :	
Açılış amacı :	Kullanma suyu
Başlangıç tarihi/ Bitiş tarih :	13.03.09-19.03.2009
Arama belgesi Nosu ve tarihi :	II.A.İz.20.257(4-4)6.03.09

### ALOSBİ\_Aliağa Organize Sanayi Bölgesi

#### D-KUYU YERİ KROKİSİ (503810 D-4297873K)



### B- SU VERİM TECRÜBESİ

Akifer	Metreler arası	Süre saat	Ne ile yapıldığı	Statik seviye	Dinamik seviye	Debi (lt/sn)
I	0-60	8	kmpresör	5	38	8
II						

### E- İNKİŞAF

Ne ile yapıldığı	KMPRS	Tipi	DP
Tipi	Açık	Motoru	10 HP
Süresi	8 saat	Cekim	8 Lt/sn

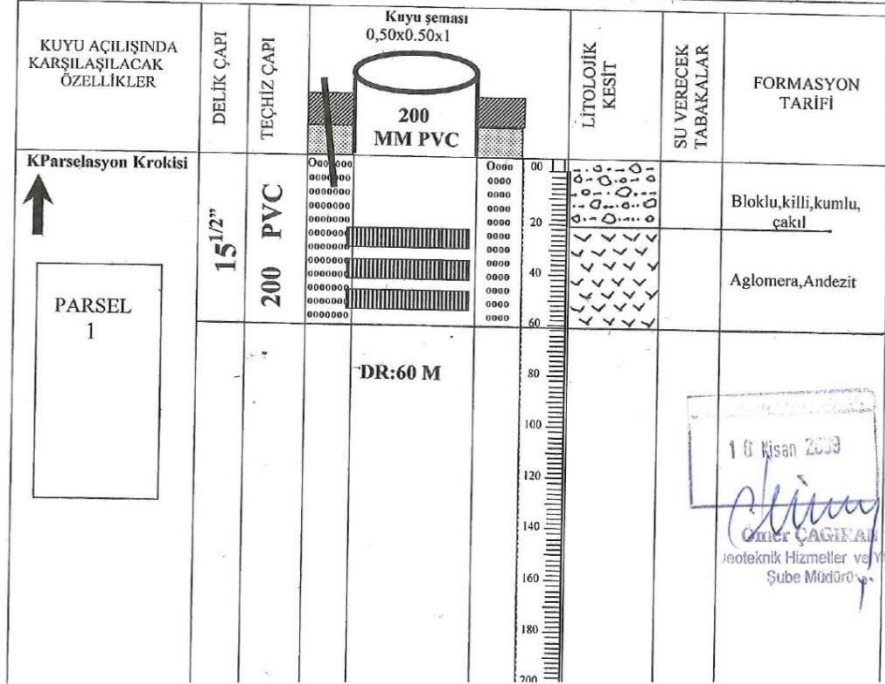
### F-POMPA DURUMU

### C- AÇAN FİRMA

Adı	ÜN-SAL MAKİNA SONDAJ
Makinanın tipi	Rotary
Sondaj (m)	60 m
Adres	Yenişehir/İZMİR

### G- MESUL SAHİSLAR

Mesleği	Adı Soyadı	Dip. No.	İmzası
JEO. MÜH	S.KOÇYER	471	
Sondör	A.YILMAZ	81-İIR 1050	



## SULAMA SUYU ANALİZ RAPORU

T.C.

İZMİR VALİLİĞİ  
İL ÖZEL İDARESİİZMİR

SUYUN ALINDIĞI İL - İLÇE: İzmir-Aliağa  
 SUYUN ALINDIĞI KÖY-MEVKİİ: Aliağa Organize Sanayi Bölgesi / Kunduz-2  
 SUYUN NEREDEN ALINDIĞI: Sondaj  
 NUMUNEYİ ALANIN ADI-SOYADI: Süleyman KOÇYER  
 NUM.LAB.GELİŞ TARİHİ: 1/4/2009  
 LAB NO : 40 ADA NO : -  
 RAPOR TARİHİ : 2/4/2009 PARSEL NO : -

KATYONLAR (Me/Lt)		ANYONLAR (Me/Lt)	
SODYUM	1.36	KARBONAT	0.00
POTASYUM	0.10	BİKARBONAT	6.32
KALSİYUM	3.60	KLORÜR	1.01
MAĞNEZYUM	2.29	SÜLFAT	0.02
TOPLAM	7.35	TOPLAM	7.35
pH	7.18	ARTIK SODYUM KARBONAT	0.43
ELEKTRİKSEL İLETKENLİK (mikrosiemens)	735.00	SAR	0.79
TOTAL TUZ (ppm)	551.25		

SUYUN SINIFI: T2 A1

GEREKLİ AÇIKLAMALAR RAPORUN ARKASINDADIR.

Analizleri Yapan

**Mustafa ÖĞÜT**

KİMYAGER



Lab. Adr. Sorumlusu  
**Hüseyin KORKMAZ**  
 ZİR.YÜK.MÜH.



#### POMPAJ PROGRAMI

Kuyu Sahibi : ALOSBI-Aliğa Organize Sanayi Bölgesi  
Kuyu Yeri : ALİAĞA /İZMİR

#### İŞLETME PROGRAMI

İşletme Debisi : 8 Lt/sn  
Saatte Çekilecek Su Miktarı : 28 ton/saat  
Günde Çalışacağı Süre : 20 Saat  
Günde Çekilecek Su Miktarı : 560 ton/gün  
Yılda Çalışacağı Süre : 100gün  
Yılda Çekilecek Su Miktarı : 56 000 ton/yıl  
Kullanma Amacı : KULLANMA SUYU

Teknik Sorumlu

Süleyman KOÇYER  
Jeoloji Mühendisi

**BATI SONDAJ**

SÜLEYMAN KOÇYER  
1593/1 Sk.No:63 K:4/31 Manavkuyu  
Tel:232-4616723 Faks:3852232-İZMİR  
K.yaka V.D. T.C.No:3637 416 7302

#### ANNEX-9 EFFLUENT ANALYSIS REPORTS







Y-35/287/2021

Sayfa  
(Page No) 2 / 3  
Protokol No  
(Protocol Number) 8231002



**SU ANALİZ LABORATUVARI**  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30

**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8231002

01-23

Numune Kod No / Mühür No	AKRETEST2295-2268
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	02.01.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ - 02.01.2023 - 12:00-14:00
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 2 LT STERİL CAM ŞİŞE-12 LT PLASTİK ŞİŞE / 14,0 LİTRE
Analizin Başlama - Bitiş Tarih ve Saati	02.01.2023 14:00:37 / 27.01.2023 15:00:39
Numunenin Durumu / Alınış Metodu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Fiziksel Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*Renk Tayini	Pt/Co	TS EN ISO 7887 B C SPEKTROFOTOMETRE	2	02.01.2023	-	280	3.44
Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	02.01.2023	6.00	9.00	8.30
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLEKS METOT	10	02.01.2023	-	250	49.6
*Çinko Tayini	mg/L	EPA 200.7 ICP-OES METODU	-	03.01.2023	-	5	0.053
*Sülfat Tayini	mg/L	SM 4500- SO <sub>4</sub> <sup>2-</sup> E SPEKTROFOTOMETRE	1	02.01.2023	-	1500	41.69
*ZSF Balık Biyodeneği Tayini	-	TS 5676 SKKY TEBLİĞİ EK-1	-	02.01.2023	-	10	4
*Krom+6 Tayini	mg/L	SM 3500 Cr+6 B SPEKTROFOTOMETRE	0.1	02.01.2023	-	0.5	<0.1
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	02.01.2023	-	20	<10
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	02.01.2023	-	200	<3
*Cıva Tayini	mg/L	EPA 200.7 ICP-OES METODU	0.0005	03.01.2023	-	0.05	<0.0005
*Bakır Tayini	mg/L	EPA 200.7 ICP-OES METODU	-	03.01.2023	-	3	0.0083
*Kadmiyum Tayini	mg/L	EPA 200.7 ICP-OES METODU	0.001	03.01.2023	-	0.1	<0.001
*Toplam Krom Tayini	mg/L	EPA 200.7 ICP-OES METODU	0.002	03.01.2023	-	2	<0.002
*Toplam Siyanür Tayini	mg/L	SM 4500 CN- C ve E	0.005	03.01.2023	-	1	<0.005

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.

Sonuçlar deneyi yapılan numune için geçerlidir.  
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Testing reports without signature and seal are not valid  
The results are valid for item which is tested.

Akre Çevre Gıda ve End. Analiz Hizm. San. Tic. Ltd. Şti  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30  
e-posta: akretest@akretest.com  
Web: www.akretest.com

Form No: AKRE-Frm 66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Y-35/287/2021

Sayfa  
(Page No) 3 / 3  
Protokol No  
(Protocol Number) 8231002



**SU ANALİZ LABORATUVARI**  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30



AB-0972-T

8231002

01-23

**ANALİZ RAPORU**  
*Analysis Report*

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
#Demir Tayini	mg/L	EPA 200.7 ICP-OES METODU	-	03.01.2023	-	10	0.011
#Florür Tayini	mg/L	SM 4500 F B D SPANDS METODU	-	03.01.2023	-	15	0.43
#Kurşun Tayini	mg/L	EPA 200.7 ICP-OES METODU	-	03.01.2023	-	2	0.017
#Toplam Fosfor Tayini	mg/L	SM 4500 P B, E	0.5	03.01.2023	-	2	<0.5
#Toplam Kjeldahl Azotu Tayini	mg/L	SM 4500 Norg B MAKRO KJELDAHL METODU	5	03.01.2023	-	20	<5

**NOT :**

- \*\*\* ile işaretli deneyler akreditasyon kapsamındadır.
- \*#\* ile işaretli parametreler İşbirliği Sözleşmesi Kapsamında ÇSB'den yetkili İşbirliği tarafından yapılmıştır.
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 17.12.2022 tarih ve 32046 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

Numune Alma Sorumlusu	Kimya Lab. Sorumlusu	Raporlama Sorumlusu
<b>İsmail DOĞAN</b> Çevre Mühendisi	<b>Özge ŞAHİN</b> Kimya Mühendisi	<b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi
<i>e-imzalıdır.</i>	<i>e-imzalıdır.</i>	<i>e-imzalıdır.</i>
	<b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Omer ÖNDER</b> Kimyager	
	 <i>e-imzalıdır.</i>	

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürsüz raporlar geçersizdir.  
Sonuçlar deneyi yapılan numune için geçerlidir.  
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Testing reports without signature and seal are not valid  
The results are valid for item which is tested.

Akre Çevre Gıda ve End. Analiz Hizm. San. Tic. Ltd. Şti  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30  
e-posta: akretest@akretest.com  
Web: www.akretest.com

Form No: AKRE Fm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi: 06 / 01.06.2022





Y-06/203/2022  
İlk Basım: 03.05.2010  
RP.01 / Rev.08  
Rev. Tarihi: 30.06.2022  
Sayfa 1 / 2



**SEGAL ÇEVRE ÖLÇÜM ve ANALİZ LABORATUVARI**  
Aşağı Öveçler Mah. 1322.Cad (Eski 6.cad) No:12 Çankaya-ANKARA  
Tel: 0 312 481 83 00 Fax: 0 312 481 83 99  
mail: [segal@segalanaliz.com](mailto:segal@segalanaliz.com)  
web: [www.segalanaliz.com](http://www.segalanaliz.com), [www.segal.com.tr](http://www.segal.com.tr)



Test  
TS EN ISO IEC 17025  
AB-0425-T

AB-0425-T  
R-64727/23  
01/23

### DENEY RAPORU / Test Report

**Müşterinin Adı/ Adresi**  
Customer Name / Address  
AKRE ÇEVRE GIDA ve END. ANALİZ HİZ.SAN. ve TİC.LTD.ŞTİ.  
İsmet İnönü Mah. 2083 Sok. No:12/B Çeşme İZMİR

**Numuneyi Alan Kurum / Kuruluş**  
Sampler Institution / Company  
AKRE ÇEVRE GIDA ve END. ANALİZ HİZ.SAN. ve TİC.LTD.ŞTİ.

**Numunenin Adı ve Örneklem Tarihi**  
Name and Sampling Date of the Sample  
Atıksu N-69637/23 – 02.01.2023

**Numunenin Alınış Sekli / Metodu**  
Receipt of the Sample Shape / Method  
Kompozit 2 saatlik / ---

**Numuneyi Teslim Eden**  
Deliverer of the Sample  
Kargodan teslim edildi.

**Proje No**  
Number of the Project  
P-30307/23

**Numunenin Kabul Tarihi**  
Date of Sample Acceptance  
03.01.2023

**Numunenin Teslim Koşulları**  
Delivery Conditions of the Sample  
Plastik kap, soğuk ortam, kimyasal korumalı, mühürlü

**Açıklamalar**  
Remarks  
8231002 numaralı atıksu numunesinin SKKY Tablo 19'a göre analizi

**Deneyin Yapıldığı Tarih**  
Date of the Test  
03.01.2023 – 06.01.2023

**Raporun Tarihi ve Sayfa Sayısı**  
Number and date of the Pages of the Report  
19.01.2023 – 2 sayfa

Deney laboratuvarı olarak faaliyet gösteren SEGAL Çevre Ölçüm ve Analiz Laboratuvarı Müh. Müş. Proje Hizm. San. Tic. Ltd. Şti. TÜRKAK'tan AB-0425-T ile TS EN ISO IEC 17025 standardına göre akredite edilmiştir. SEGAL Çevre Ölçüm ve Analiz Laboratuvarı Müh. Müş. Proje Hizm. San. Tic. Ltd. Şti. accredited by TÜRKAK under registration number AB-0425-T for TS EN ISO IEC 17025 as test laboratory" Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports

Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve deney/ölçüm metodları takip eden sayfalarda verilmiştir. The test and /or measurements results, the uncertainties with confidence probability and test methods are given on the following pages which are part of this report.

Raporu Hazırlayan  
Prepared by

Esra ÜZEL  
Kimyager

Raporu Onaylayan  
Confirm by

Fevzi KARAKAYA  
Laboratuvar Müdürü



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Y-06/203/2022  
İlk Basım: 03.05.2010  
RP.01 / Rev.08  
Rev. Tarihi: 30.06.2022  
Sayfa 2 / 2



**SEGAL ÇEVRE ÖLÇÜM ve ANALİZ LABORATUVARI**  
Aşağı Öveçler Mah. 1322.Cad (Eski 6.cad) No:12 Çankaya-ANKARA  
Tel: 0 312 481 83 00 Fax: 0 312 481 83 99  
mail: [segal@segalanaliz.com](mailto:segal@segalanaliz.com)  
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Test  
TS EN ISO/IEC 17025  
AB-0425-T

AB-0425-T

R-64727/23

01/23

### DENEY RAPORU / Test Report

Numune Adı ve Numune No: Atıksu – N-69637/23  
Sample Name and Number

Parametre-Birim Parameter-Unit	Analiz Sonucu Test Result	SKKY Tablo 19 Sınır Değeri Kompozit 2 saatlik	Ölçüm Belirsizliği Uncertainties	Analiz Metodu Test Method
Bakır (mg/L)	0,0083	3	% ± 11,35	EPA 200.7
Cıva (mg/L)	<0,0005	0,05	% ± 2,12	EPA 200.7
Çinko (mg/L)	0,053	5	% ± 4,72	EPA 200.7
Demir (mg/L)	0,011	10	% ± 5,55	EPA 200.7
Florür (mg/L)	0,43	15	% ± 5,91	SM 4500 Cl B
Kadmiyum (mg/L)	<0,001	0,1	% ± 5,99	EPA 200.7
Krom (toplam) (mg/L)	<0,002	<0,002	% ± 9,69	SM 3030 K, EPA 200.7
Kurşun (mg/L)	0,017	2	% ± 5,21	EPA 200.7
Toplam Siyanür (mg/L)	<0,005	1	% ± 8,12	SM 4500 CN C E

Laboratuar, yetkili personeli tarafından alınmayan ve/veya uygun koşullarda gelmeyen numunelerden, teknik ve hukuki olarak sorumluluk kabul etmemektedir.

Laboratuvarımız tarafından alınmayan numunelere ait ölçüm belirsizliği değerleri, numune almadan kaynaklanan belirsizlik değerleri dahil edilmeden belirtilmiştir.

**Laboratuvarımızda numune TA.33 Numune Alma Standart Çalışma Talimatı'na göre alınmakta, LS.22 Numune Saklama Koşulları Listesi'ne göre saklanmakta ve muhafaza edilmektedir. Numunenin laboratuvarımızda saklama ve muhafaza süresi içerisinde kimyasal, mikrobiyolojik ve fiziksel açıdan bozulan veya tehlike arz eden numuneler, numune saklama süresinin bitimi beklemeden imha edilir.**

### Çevre Koşulları:

Hava Durumu Açık Yağış Var Hava Sıcaklığı Koordinatlar E  
Kapalı Yok °C N



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**EKOSFER LABORATUVAR VE  
ARAŞTIRMA HİZMETLERİ  
SAN. VE TİC.LTD.ŞTİ  
SU VE ATIKSU  
LABORATUVARI  
ANALİZ RAPORU**



Y-35/267/2020

AB-0870-T

S230001

01-23

Sayfa:1/2

Rapor No	S230001
Rapor Yayın Tarihi	27.01.2023
Müşteri Adı	ALIAGA KIMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Müşteri Adresi	ÇORAKLAR MAH. 5005. SK. NO:8/1-1 ALİAĞA İZMİR
Numunenin Geliş Sebebi/Özel İstek/Resmi İstek	RESMİ İSTEK
Numuneyi Alan Kurum/ Kişi	AKRETEST LABORATUVARI
Numunenin Cinsi	ATIKSU
Numunenin Miktarı/Ambalaj Şekli	1 L / PE ŞİŞE - 1 L / PE ŞİŞE
Numunenin Alındığı Adres / Alma Noktası	AAT ÇIKIŞ
Numunenin Alınış Amacı	İÇ İZLEME
Numune Alım Standardı	TS EN ISO 5667-3
Numunenin Alınış Şekli/Sektörü/SKKY Tablo No)	2 Saatlik Kompozit / TABLO 19
Numune Alınış Tarihi / Tutanak No	02.01.2023 / -
Mühür Durumu /Mühür No:	VAR / AKRETEST
Numuneye Uygulanan İşlemler	KORUMAYA ALINMIŞ GETİRİLİŞİ UYGUN
Laboratuvara Kabul Tarihi / Saati	02.01.2023 15:00
Analize Başlama - Analiz Bitiş Onay Tarihi	02.01.2023 - 17.01.2023
Açıklamalar/Müşteri Beyanı	AKRETEST LABORATUVARINA AİT 8231002 PROTOKOL NUMARALI NUMUNE

Deney laboratuvarı olarak faaliyet gösteren EKOSFER LABORATUVARI VE ARAŞTIRMA HİZMETLERİ SAN. VE TİC.LTD.ŞTİ, TÜRKAK 'tan AB-0870-T Akreditasyon numarası ile TS EN ISO 17025 standardına göre akredite edilmiştir.

Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırılığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma antlaşması imzalamıştır.

Analiz Raporunda (\*) işaretli parametreler TÜRKAK akreditasyonuna, (\*\*) işaretli analizler ise TÜRKAK akreditasyonu ile Çevre ve Şehircilik Bakanlığı analiz yeterliliğine(\*) işaretli parametreler Çevre ve Şehircilik bakanlığından yetkiye sahiptir. Raporunda (\*\*\*) işaretli analizlerde İşbirliği Laboratuvar sonuçları yer almaktadır.

Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu raporun tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. Ölçüm belirsizliğine göre Uygunluk Beyan istenmesi durumunda Karar Kuralı Talimatına göre verilmektedir.

Numuneler TS EN ISO 5667-3 Su Kalitesi-Numune Alma Bölüm-3:Numunelerin Muhafaza ve Taşıma Kuralları Çerçevesinde saklanır. Bu süre içerisinde kimyasal, fiziksel açıdan bozulan veya tehlike arz eden numuneler, numune saklama süresinin bitimi beklemeden imha edilir.

Numune alma ve taşıma işlemleri PR10 kodlu Prosedür ve F:119 kodlu Numune Alma Planına uygun olarak gerçekleştirilmiştir.

Feragat Beyanı: müşteri tarafından beyan edilen bilgilerin sonuçların geçerliliğini etkilemesi durumundan, Ekosfer Laboratuvar ve Araştırma Hizmetleri Tic. Ltd. Şti. feragat eder.

F:68/KY/01

Ekosfer Laboratuvar ve Araştırma Hizmetleri San. ve Tic.Ltd.Şti.  
Adres: Erzene mh. 114 sk. no:6/B evka3 Bornova/İzmir  
Tel: 0232 462 08 81-82 Fax: 0232 462 08 83 www.ekosferlab.com.tr



**KİMYASAL ANALİZLER****SKKY Tablo: TABLO 19**

Analizlenen Parametreler	Analiz Sonuçları	Birimi	Analiz Ölçüm Metodu	Raporlama Limiti/	Mevzuat Değeri
**Toplam Fosfor Tayini	<0,5	mg/L	SM 4500-P B,E Özütleme-Spektrofotometrik Metot 23.Edition 2017	0,5	2
**Toplam Kjeldahl-Azotu Tayini	<5	mg/L	SM 4500 Norg B Makro Kjeldahl Metodu 23.Edition 2017	5	20

**Mevzuat değeri:**31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayınlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği(SKKY) ve 24.04.2011 tarih ve 27914 sayılı Resmi Gazetede yayınlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği'nde Değişiklik Yapılmasına Dair Yönetmelik

**Laboratuvar Sorumlusu**  
Zeynep AKTAŞ ONUKE-İmzalayan: ZEYNEP AKTAŞ ONUK  
Tarih: 27.01.2023**Laboratuvar Yöneticisi**  
Esin ÇINARE-İmzalayan: ESİN ÇINAR  
Tarih: 27.01.2023

Bu belge 5070 sayılı elektronik imza kanununa göre güvenli elektronik imza ile imzalanmıştır.

**Açıklamalar**

- Bu rapordaki sonuçlar ve görüşler yukarıda belirtilen numune için geçerlidir.
- Bu rapor, Ekosfer Laboratuvarı'nın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.
- İmzasız ve mühürlü raporlar geçersizdir.
- Analizlere ait teklif, fatura ve ödeme dekontu ekindedir.
- Karar Kuralı Talimatı(T:01/LBSA-Eİ /01) www.ekosferlab.com.tr'de ver almaktadır.

F:68/KY/01

Ekosfer Laboratuvar ve Araştırma Hizmetleri San. ve Tic.Ltd.Şti.  
Adres: Erzene mh. 114 sk. no:6/B evka3 Bornova/İzmir  
Tel: 0232 462 08 81-82 Fax: 0232 462 08 83 www.ekosferlab.com.tr



Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



**Parametreler**

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

**Açıklamalar**

İzmir içinden bir laboratuvar tercihimizdir.  
İLETİŞİM  
TOLGAHAN CEN - 554 230 08 55  
KEZİBAN ÖZTÜRK - 544 551 23 65



Y-35/287/2021

Protokol Number



Sayfa  
(Page No) : 1 / 2



SU ANALİZ LABORATUVARI

İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30



AB-0972-T

8231106

02-23

ANALİZ RAPORU  
Analysis Report

**Müşterinin Adı**  
(Customer Name) : ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ

**Müşterinin Adresi**  
(Customer Address) : ÇORAKLAR MAH. 5001/1 SOKAK NO:3/18 - ALİAĞA/İZMİR

**Gelen Eyrak Tarih ve Sayısı**  
(Date and number of the incoming document) : 16.01.2023 / 1

**Numunenin Cinsi ve Sınıfı**  
(The kind and class of the test item) : ATIK SU

**Numuneyi Alan-Alındığı Yer-Tarih-Saat**  
(Date of Test) : AKRETEST - AAT ÇIKIŞ - 16.01.2023 - 14:00 - 16:00

**Numunenin Kabul Tarihi**  
(The date of receipt of test item) : 16.01.2023

**Raporun Sayfa Sayısı**  
(Number of pages of the Report) : 2

**Açıklamalar**  
(Remarks) : MELBES B111007 Başvuru Numaralı Numune S.K.K.Y. Tablo 19'a Göre AKRETEST Tarafından Çalışılmıştır.

\*Deney laboratuvarı olarak faaliyet gösteren AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti. TÜRKAK'tan AB-0972-T ile TS EN ISO 17025:2017 standardına göre akredite edilmiştir. AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti. accredited by TÜRKAK under registration number AB-0972-T for TS EN ISO 17025:2017 as test laboratory.

\*\*Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

\*\*\*Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

\*\*\*\*Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070

Mühür  
(Seal)



Tarih  
(Date)

03.02.2023

Laboratuvar Müdürü  
(Laboratory Manager)

Ömer ÖNDER  
Kimyager



e-imzalıdır.

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
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e-posta: akretest@akretest.com  
Web: www.akretest.com

Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8231106



**SU ANALİZ LABORATUVARI**  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30

**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8231106

02-23

Numune Kod No / Mühür No	AKRETEST2274
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	16.01.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ - 16.01.2023 - 14:00/16:00
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 4 LT P.E SİSE
Analizin Başlama - Bitiş Tarih ve Saati	16.01.2023 16:00:10 / 18.01.2023 13:02:47
Numunenin Durumu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTIMETRE	-	16.01.2023	6.00	9.00	7.74
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	16.01.2023	-	200	9.2
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	16.01.2023	-	250	66.64
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	16.01.2023	-	20	<10

**NOT :**  
\*\*\* ile işaretli deneyler akreditasyon kapsamındadır.  
\*#\* ile işaretli parametreler İlgili Sözleşme Kapsamında ÇSB'den yetkili İlgili Kurum tarafından yapılmıştır.  
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 17.12.2022 tarih ve 32046 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

**Uygunluk Beyanı**  
(Evaluation of the test results)

<b>Numune Alma Sorumlusu</b> <b>İsmail DOĞAN</b> Çevre Mühendisi  <i>e-imzalıdır.</i>	<b>Kimya Lab. Sorumlusu</b> <b>Özge ŞAHİN</b> Kimya Mühendisi  <i>e-imzalıdır.</i>  <b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Ömer ÖNDER</b> Kimyager  <i>e-imzalıdır.</i>	<b>Raporlama Sorumlusu</b> <b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi  <i>e-imzalıdır.</i>
---	--	--

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürsüz raporlar geçersizdir.  
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Web: www.akretest.com

Form No: AKRE Fm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi: 06 / 01.06.2022



Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.  
İLETİŞİM  
TOLGAHAN CEN - 554 230 08 55  
KEZİBAN ÖZTÜRK - 544 551 23 65



Y-35/287/2021

Protokol Number



Sayfa  
(Page No) : 1 / 2



**SU ANALİZ LABORATUVARI**

İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30



AB-0972-T

8231282

02-23

**ANALİZ RAPORU**  
*Analysis Report*

**Müşterinin Adı**  
(Customer Name) : ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ

**Müşterinin Adresi**  
(Customer Address) : ÇORAKLAR MAH. 5001/1 SOKAK NO:3/18 - ALİAĞA/İZMİR

**Gelen Evrak Tarih ve Sayısı**  
(Date and number of the incoming document) : 03.02.2023 / 1

**Numunenin Cinsi ve Sınıfı**  
(The kind and class of the test item) : ATIK SU

**Numuneyi Alan-Alındığı Yer-Tarih-Saat**  
(Date of Test) : AKRETEST - AAT ÇIKIŞ - 03.02.2023 - 14:00

**Numunenin Kabul Tarihi**  
(The date of receipt of test item) : 03.02.2023

**Raporun Sayfa Sayısı**  
(Number of pages of the Report) : 2

**Açıklamalar**  
(Remarks) : MELBES B111007 Başvuru Numaralı Numune S.K.K.Y. Tablo 19'a Göre AKRETEST Tarafından Çalışılmıştır.

\*Deney laboratuvarı olarak faaliyet gösteren AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, TÜRKAK'tan AB-0972-T ile TS EN ISO 17025:2017 standardına göre akredite edilmiştir. AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, accredited by TÜRKAK under registration number AB-0972-T for TS EN ISO 17025:2017 as test laboratory.  
\*\*Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırılığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.  
\*\*\*Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.  
\*\*\*\*Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070

**Mühür**  
(Seal)



**Tarih**  
(Date)

17.02.2023

**Laboratuvar Müdürü**  
(Laboratory Manager)

Ömer ÖNDER  
Kimyager



e-imzalıdır.

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.  
Sonuçlar deneyi yapılan numune için geçerlidir.  
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Web: www.akretest.com

Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8231282



**SU ANALİZ LABORATUVARI**  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30

**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8231282

02-23

Numune Kod No / Mühür No	AKRETEST2286
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	03.02.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ - 03.02.2023 - 14:00/16:00
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 2 LT P.E SİŞE-2 LT CAM SİŞE / 4,0 LİTRE
Analizin Başlama - Bitiş Tarih ve Saati	03.02.2023 16:00:56 / 06.02.2023 15:55:56
Numunenin Durumu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTIMETRE	-	03.02.2023	6.00	9.00	7.73
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	03.02.2023	-	20	11
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	03.02.2023	-	200	26.8
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	03.02.2023	-	250	85.32

**NOT :**  
\*\*\* ile işaretli deneyler akreditasyon kapsamındadır.  
\*#\* ile işaretli parametreler İlgili Sözleşme Kapsamında ÇSB'den yetkili İlgirlikli tarafından yapılmıştır.  
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 17.12.2022 tarih ve 32046 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

**Uygunluk Beyanı**  
(Evaluation of the test results)

<b>Numune Alma Sorumlusu</b> <b>İsmail DOĞAN</b> Çevre Mühendisi  <i>e-imzalıdır.</i>	<b>Kimya Lab. Sorumlusu</b> <b>Özge ŞAHİN</b> Kimya Mühendisi  <i>e-imzalıdır.</i>  <b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Ömer ÖNDER</b> Kimyager   <i>e-imzalıdır.</i>	<b>Raporlama Sorumlusu</b> <b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi  <i>e-imzalıdır.</i>
---	--	--

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürsüz raporlar geçersizdir.  
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e-posta: akretest@akretest.com  
Web: www.akretest.com

Form No: AKRE Fm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi: 06 / 01.06.2022



Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.  
İLETİŞİM  
TOLGAHAN CEN - 554 230 08 55  
KEZİBAN ÖZTÜRK - 544 551 23 65



Y-35/287/2021

Protokol Number



Sayfa  
(Page No) : 1 / 2



**SU ANALİZ LABORATUVARI**

İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
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AB-0972-T

8231443

03-23

**ANALİZ RAPORU**  
*Analysis Report*

**Müşterinin Adı**  
(Customer Name) : ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ

**Müşterinin Adresi**  
(Customer Address) : ÇORAKLAR MAH. 5001/1 SOKAK NO:3/18 - ALİAĞA/İZMİR

**Gelen Evrak Tarih ve Sayısı**  
(Date and number of the incoming document) : 20.02.2023 / 1

**Numunenin Cinsi ve Sınıfı**  
(The kind and class of the test item) : ATIK SU

**Numuneyi Alan-Alındığı Yer-Tarih-Saat**  
(Date of Test) : AKRETEST - AAT ÇIKIŞ - 20.02.2023 - 10:30/12:30

**Numunenin Kabul Tarihi**  
(The date of receipt of test item) : 20.02.2023

**Raporun Sayfa Sayısı**  
(Number of pages of the Report) : 2

**Açıklamalar**  
(Remarks) : MELBES B111007 Başvuru Numaralı Numune S.K.K.Y. Tablo 19'a Göre AKRETEST Tarafından Çalışılmıştır.

\*Deney laboratuvarı olarak faaliyet gösteren AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, TÜRKAK'tan AB-0972-T ile TS EN ISO 17025:2017 standardına göre akredite edilmiştir. AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, accredited by TÜRKAK under registration number AB-0972-T for TS EN ISO 17025:2017 as test laboratory.  
\*\*Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırılığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.  
\*\*\*Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.  
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**Mühür**  
(Seal)



**Tarih**  
(Date)

06.03.2023

**Laboratuvar Müdürü**  
(Laboratory Manager)

Ömer ÖNDER  
Kimyager



e-imzalıdır.

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.  
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Web: www.akretest.com

Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8231443



**SU ANALİZ LABORATUVARI**  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30

**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8231443

03-23

Numune Kod No / Mühür No	AKRETEST2049
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarihi ve Sayısı	20.02.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ - 20.02.2023 - 10:30/12:30
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 2 LT P.E SİSE-2 LT CAM SİSE / 4,0 LİTRE
Analizin Başlama - Bitiş Tarihi ve Saati	20.02.2023 12:30:54 / 22.02.2023 13:45:13
Numunenin Durumu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	20.02.2023	6.00	9.00	6.82
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	20.02.2023	-	250	47.6
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	20.02.2023	-	20	<10
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	20.02.2023	-	200	<3

**NOT :**  
\*\*\* ile işaretli deneyler akreditasyon kapsamındadır.  
\*#\* ile işaretli parametreler İlgili Sözleşme Kapsamında ÇSB'den yetkili İlgirlikli tarafından yapılmıştır.  
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 17.12.2022 tarih ve 32046 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

(Evaluation of the test results)

<b>Numune Alma Sorumlusu</b> <b>İsmail DOĞAN</b> Çevre Mühendisi  <i>e-imzalıdır.</i>	<b>Kimya Lab. Sorumlusu</b> <b>Özge ŞAHİN</b> Kimya Mühendisi  <i>e-imzalıdır.</i>  <b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Ömer ÖNDER</b> Kimyager   <i>e-imzalıdır.</i>	<b>Raporlama Sorumlusu</b> <b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi  <i>e-imzalıdır.</i>
---	--	--

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.  
Sonuçlar deneyi yapılan numune için geçerlidir.  
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İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
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Form No: AKRE Fm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022



Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.  
İLETİŞİM  
TOLGAHAN CEN - 554 230 08 55  
KEZİBAN ÖZTÜRK - 544 551 23 65





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8231541



**SU ANALİZ LABORATUVARI**  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30

**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8231541

03-23

Numune Kod No / Mühür No	AKRETEST2088
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	03.03.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ - 03.03.2023 - 16:30/18:30
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 2 LT P.E SİSE-2 LT CAM SİSE / 4,0 LİTRE
Analizin Başlama - Bitiş Tarih ve Saati	03.03.2023 18:30:21 / 04.03.2023 17:00:41
Numunenin Durumu / Alınış Metodu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	03.03.2023	6.00	9.00	7.72
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	03.03.2023	-	200	10
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	03.03.2023	-	250	88.92
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	03.03.2023	-	20	<10

**NOT :**  
\*\*\* ile işaretli deneyler akreditasyon kapsamındadır.  
\* # : ile işaretli parametreler İşbirliği Sözleşmesi Kapsamında ÇSB'den yetkilili tarafından yapılmıştır.  
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkte yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 17.12.2022 tarih ve 32046 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

**Uygunluk Beyanı**  
(Evaluation of the test results)

<b>Numune Alma Sorumlusu</b> <b>İsmail DOĞAN</b> Çevre Mühendisi  <i>e-imzalıdır.</i>	<b>Kimya Lab. Sorumlusu</b> <b>Özge ŞAHİN</b> Kimya Mühendisi  <i>e-imzalıdır.</i>  <b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Ömer ÖNDER</b> Kimyager  <i>e-imzalıdır.</i>	<b>Raporlama Sorumlusu</b> <b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi  <i>e-imzalıdır.</i>
---	--	--

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.  
Sonuçlar deneyi yapılan numune için geçerlidir.  
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İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30  
e-posta: akretest@akretest.com  
Web: www.akretest.com

Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022



Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.  
İLETİŞİM  
TOLGAHAN CEN - 554 230 08 55  
KEZİBAN ÖZTÜRK - 544 551 23 65





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8231688



**SU ANALİZ LABORATUVARI**  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30

**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8231688

04-23

Numune Kod No / Mühür No	AKRETEST2400
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	24.03.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ - 24.03.2023 - 11:00/13:00
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 2 LT P.E SİSE-2 LT CAM SİSE / 4,0 LİTRE
Analizin Başlama - Bitiş Tarih ve Saati	24.03.2023 13:00:56 / 25.03.2023 14:27:06
Numunenin Durumu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	24.03.2023	6.00	9.00	7.69
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	24.03.2023	-	200	6.8
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	24.03.2023	-	250	49.4
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	24.03.2023	-	20	<10

**NOT :**  
\*\*\* ile işaretli deneyler akreditasyon kapsamındadır.  
\*#\* ile işaretli parametreler İşbirliği Sözleşmesi Kapsamında ÇSB'den yetkili İşbirliği tarafından yapılmıştır.  
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 17.12.2022 tarih ve 32046 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

**Uygunluk Beyanı**  
(Evaluation of the test results)

<b>Numune Alma Sorumlusu</b> <b>İsmail DOĞAN</b> Çevre Mühendisi  <i>e-imzalıdır.</i>	<b>Kimya Lab. Sorumlusu</b> <b>Özge ŞAHİN</b> Kimya Mühendisi  <i>e-imzalıdır.</i>  <b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Ömer ÖNDER</b> Kimyager   <i>e-imzalıdır.</i>	<b>Raporlama Sorumlusu</b> <b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi  <i>e-imzalıdır.</i>
---	--	--

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürsüz raporlar geçersizdir.  
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e-posta: akretest@akretest.com  
Web: www.akretest.com

Form No: AKRE Fm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi: 06 / 01.06.2022



Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.  
İLETİŞİM  
TOLGAHAN CEN - 554 230 08 55  
KEZİBAN ÖZTÜRK - 544 551 23 65



Y-35/287/2021

Protokol Number



Sayfa  
(Page No) : 1 / 2



SU ANALİZ LABORATUVARI

İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
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AB-0972-T

8231862

04-23

ANALİZ RAPORU  
Analysis Report

**Müşterinin Adı**  
(Customer Name) : ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ

**Müşterinin Adresi**  
(Customer Address) : ÇORAKLAR MAH. 5001/1 SOKAK NO:3/18 - ALİAĞA/İZMİR

**Gelen Evrak Tarih ve Sayısı**  
(Date and number of the incoming document) : 07.04.2023 / 1

**Numunenin Cinsi ve Sınıfı**  
(The kind and class of the test item) : ATIK SU

**Numuneyi Alan-Alındığı Yer-Tarih-Saat**  
(Date of Test) : AKRETEST - AAT ÇIKIŞ SUYU - 07.04.2023 - 12:45/14:45

**Numunenin Kabul Tarihi**  
(The date of receipt of test item) : 07.04.2023

**Raporun Sayfa Sayısı**  
(Number of pages of the Report) : 2

**Açıklamalar**  
(Remarks) : MELBES B111007 Başvuru Numaralı Numune S.K.K.Y. Tablo 19'a Göre AKRETEST Tarafından Çalışılmıştır.

\*Deney laboratuvarı olarak faaliyet gösteren AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, TÜRKAK'tan AB-0972-T ile TS EN ISO 17025:2017 standardına göre akredite edilmiştir. AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, accredited by TÜRKAK under registration number AB-0972-T for TS EN ISO 17025:2017 as test laboratory.

\*\*Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

\*\*\*Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

\*\*\*\*Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070

Mühür  
(Seal)



Tarih  
(Date)

20.04.2023

Laboratuvar Müdürü  
(Laboratory Manager)

Ömer ÖNDER  
Kimyager



e-imzalıdır.

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.  
Sonuçlar deneyi yapılan numune için geçerlidir.  
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Web: www.akretest.com

Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8231862



**SU ANALİZ LABORATUVARI**  
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Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30

**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8231862

04-23

Numune Kod No / Mühür No	AKRETEST2310
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	07.04.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ SUYU - 07.04.2023 - 12:45/14:45
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiket / Miktarı	BARKOD ETİKETLİ / 4 LT P.E SİSE
Analizin Başlama - Bitiş Tarih ve Saati	07.04.2023 14:45:38 / 08.04.2023 11:07:56
Numunenin Durumu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	07.04.2023	6.00	9.00	7.65
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	07.04.2023	-	200	8.8
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	07.04.2023	-	250	69.44
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	07.04.2023	-	20	<10

**NOT :**  
\*\*\* ile işaretli deneyler akreditasyon kapsamındadır.  
\*#\* ile işaretli parametreler İlgili Sözleşme Kapsamında ÇSB'den yetkili İlgili Kurum tarafından yapılmıştır.  
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 17.12.2022 tarih ve 32046 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

(Evaluation of the test results)

<b>Numune Alma Sorumlusu</b> <b>İsmail DOĞAN</b> Çevre Mühendisi  <i>e-imzalıdır.</i>	<b>Kimya Lab. Sorumlusu</b> <b>Özge ŞAHİN</b> Kimya Mühendisi  <i>e-imzalıdır.</i>  <b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Ömer ÖNDER</b> Kimyager   <i>e-imzalıdır.</i>	<b>Raporlama Sorumlusu</b> <b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi  <i>e-imzalıdır.</i>
---	--	--

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.  
Sonuçlar deneyi yapılan numune için geçerlidir.  
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e-posta: akretest@akretest.com  
Web: www.akretest.com

Form No: AKRE Fm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi: 06 / 01.06.2022



Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.  
İLETİŞİM  
TOLGAHAN CEN - 554 230 08 55  
KEZİBAN ÖZTÜRK - 544 551 23 65



Y-35/287/2021

Protokol Number



8231970

Sayfa  
(Page No) : 1 / 2



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AB-0972-T

8231970

05-23

ANALİZ RAPORU  
Analysis Report

**Müşterinin Adı**  
(Customer Name) : ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ

**Müşterinin Adresi**  
(Customer Address) : ÇORAKLAR MAH. 5001/1 SOKAK NO:3/18 - ALİAĞA/İZMİR

**Gelen Evrak Tarih ve Sayısı**  
(Date and number of the incoming document) : 25.04.2023 / 1

**Numunenin Cinsi ve Sınıfı**  
(The kind and class of the test item) : ATIK SU

**Numuneyi Alan-Alındığı Yer-Tarih-Saat**  
(Date of Test) : AKRETEST - AAT ÇIKIŞ - 25.04.2023 - 09:45 - 11:45

**Numunenin Kabul Tarihi**  
(The date of receipt of test item) : 25.04.2023

**Raporun Sayfa Sayısı**  
(Number of pages of the Report) : 2

**Açıklamalar**  
(Remarks) : MELBES B111007 Başvuru Numaralı Numune S.K.K.Y. Tablo 19 a Göre AKRETEST Tarafından Çalışılmıştır.

\*Deney laboratuvarı olarak faaliyet gösteren AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, TÜRKAK'tan AB-0972-T ile TS EN ISO 17025:2017 standardına göre akredite edilmiştir. AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, accredited by TÜRKAK under registration number AB-0972-T for TS EN ISO 17025:2017 as test laboratory.

\*\*Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırılığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

\*\*\*Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

\*\*\*\*Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070

Mühür  
(Seal)



Tarih  
(Date)

12.05.2023

Laboratuvar Müdürü  
(Laboratory Manager)

Ömer ÖNDER  
Kimyager



e-imzalıdır.

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.  
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Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8231970



**SU ANALİZ LABORATUVARI**  
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**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8231970

05-23

Numune Kod No / Mühür No	AKRETEST2056
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	25.04.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ - 25.04.2023 - 09:45 - 11:45
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 2 LT PLASTİK ŞİŞE, 2 LT CAM ŞİŞE / 4,0 LİTRE
Analizin Başlama - Bitiş Tarih ve Saati	25.04.2023 11:45:53 / 26.04.2023 17:00:19
Numunenin Durumu / Alınış Metodu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	25.04.2023	6.00	9.00	6.59
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	25.04.2023	-	200	14
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	25.04.2023	-	250	75.84
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	25.04.2023	-	20	<10

**NOT :**  
\*\*\* ile işaretli deneyler akreditasyon kapsamındadır.  
\*#\* ile işaretli parametreler İlgili Sözleşme Kapsamında ÇSB'den yetkili İlgiliği tarafından yapılmıştır.  
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 17.12.2022 tarih ve 32046 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

**Uygunluk Beyanı**  
(Evaluation of the test results)

<b>Numune Alma Sorumlusu</b> <b>İsmail DOĞAN</b> Çevre Mühendisi  <i>e-imzalıdır.</i>	<b>Kimya Lab. Sorumlusu</b> <b>Özge ŞAHİN</b> Kimya Mühendisi  <i>e-imzalıdır.</i>  <b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Ömer ÖNDER</b> Kimyager  <i>e-imzalıdır.</i>	<b>Raporlama Sorumlusu</b> <b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi  <i>e-imzalıdır.</i>
---	--	--

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
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Web: www.akretest.com

Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022



Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.  
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KEZİBAN ÖZTÜRK - 544 551 23 65





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8232066



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**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8232066


05-23

Numune Kod No / Mühür No	AKRETET2359
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	05.05.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ SUYU - 05.05.2023 - 11:30/13:30
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 5 LT P.E SİSE
Analizin Başlama - Bitiş Tarih ve Saati	05.05.2023 13:30:13 / 06.05.2023 17:30:38
Numunenin Durumu / Alınış Metodu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	05.05.2023	6.00	9.00	7.67
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	05.05.2023	-	200	5.6
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	05.05.2023	-	250	28.56
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	05.05.2023	-	20	<10

**NOT :**  
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- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 12.05.2023 tarih ve 32188 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

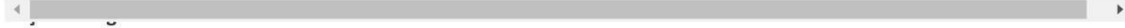
<b>Numune Alma Sorumlusu</b> <b>İsmail DOĞAN</b> Çevre Mühendisi  <i>e-imzalıdır.</i>	<b>Kimya Lab. Sorumlusu</b> <b>Özge ŞAHİN</b> Kimya Mühendisi  <i>e-imzalıdır.</i>  <b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Ömer ÖNDER</b> Kimyager  <i>e-imzalıdır.</i>	<b>Raporlama Sorumlusu</b> <b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi  <i>e-imzalıdır.</i>
---	--	--

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
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Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.

İLETİŞİM

TOLGAHAN CEN - 554 230 08 55

KEZİBAN ÖZTÜRK - 544 551 23 65



Y-35/287/2021

Protokol Number



Sayfa  
(Page No) : 1 / 2



SU ANALİZ LABORATUVARI

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AB-0972-T

8232255

06-23

ANALİZ RAPORU  
Analysis Report

**Müşterinin Adı**  
(Customer Name) : ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ

**Müşterinin Adresi**  
(Customer Address) : ÇORAKLAR MAH. 5001/1 SOKAK NO:3/18 - ALİAĞA/İZMİR

**Gelen Evrak Tarih ve Sayısı**  
(Date and number of the incoming document) : 22.05.2023 / 1

**Numunenin Cinsi ve Sınıfı**  
(The kind and class of the test item) : ATIK SU

**Numuneyi Alan-Aldığı Yer-Tarih-Saat**  
(Date of Test) : AKRETEST - AAT ÇIKIŞ SUYU - 22.05.2023 - 14:30/16:30

**Numunenin Kabul Tarihi**  
(The date of receipt of test item) : 22.05.2023

**Raporun Sayfa Sayısı**  
(Number of pages of the Report) : 2

**Açıklamalar**  
(Remarks) : MELBES B111007 Başvuru Numaralı Numune S.K.K.Y. Tablo 19 a Göre AKRETEST Tarafından Çalışılmıştır.

\*Deney laboratuvarı olarak faaliyet gösteren AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, TÜRKAK'tan AB-0972-T ile TS EN ISO 17025:2017 standardına göre akredite edilmiştir. AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti, accredited by TÜRKAK under registration number AB-0972-T for TS EN ISO 17025:2017 as test laboratory.

\*\*Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırılığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

\*\*\*Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

\*\*\*\*Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070

Mühür  
(Seal)



Tarih  
(Date)

09.06.2023

Laboratuvar Müdürü  
(Laboratory Manager)

Ömer ÖNDER  
Kimyager



e-imzalıdır.

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.  
Sonuçları deneyi yapılan numune için geçerlidir.  
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Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8232255



**SU ANALİZ LABORATUVARI**  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
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**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8232255

06-23

Numune Kod No / Mühür No	AKRETEST2355
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	22.05.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ SUYU - 22.05.2023 - 14:30/16:30
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 2 LT P.E SİSE-2 LT CAM SİSE / 4,0 LİTRE
Analizin Başlama - Bitiş Tarih ve Saati	22.05.2023 16:30/31 / 23.05.2023 17:30/38
Numunenin Durumu / Alınış Metodu	MÜHÜRLÜ / 2 SAATLİK KOMP

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	22.05.2023	6.00	9.00	7.83
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	22.05.2023	-	200	5.1
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	22.05.2023	-	250	47.6
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	22.05.2023	-	20	<10

**NOT :**

- \*\*\* ile işaretli deneyler akreditasyon kapsamındadır.
- \*# ile işaretli parametreler İşbirliği Sözleşmesi Kapsamında ÇSB'den yetkili İşbirliği tarafından yapılmıştır.
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 12.05.2023 tarih ve 32188 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

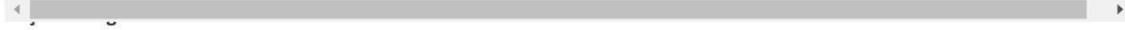
Numune Alma Sorumlusu	Kimya Lab. Sorumlusu	Raporlama Sorumlusu
İsmail DOĞAN Çevre Mühendisi	Özge ŞAHİN Kimya Mühendisi	Ezgi ŞİRİNOĞLU Gıda Mühendisi
<i>e-imzalıdır.</i>	<i>e-imzalıdır.</i>	<i>e-imzalıdır.</i>
	Laboratuvar Müdürü (Laboratory Manager) Ömer ÖNDER Kimyager	
	 <i>e-imzalıdır.</i>	

Analiz sonuçları, sadece numune alma esasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürlü raporlar geçersizdir.  
Sonuçlar deneyi yapılan numune için geçerlidir.  
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Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodenyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.

İLETİŞİM

TOLGAHAN CEN - 554 230 08 55

KEZİBAN ÖZTÜRK - 544 551 23 65





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8232378



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**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8232378

06-23

Numune Kod No / Mühür No	AKRETEST2392
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	02.06.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ - 02.06.2023 - 11:00/13:00
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 2 LT P.E SİSE-2 LT CAM SİSE / 4,0 LİTRE
Analizin Başlama - Bitiş Tarih ve Saati	02.06.2023 13:00:48 / 03.06.2023 17:30:47
Numunenin Durumu / Alınış Metodu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	02.06.2023	6.00	9.00	7.65
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	02.06.2023	-	200	6.2
*Kimyasal Oksijen İhtiyacı (KOİ) Tayini	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	02.06.2023	-	250	37.92
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	02.06.2023	-	20	<10

**NOT :**  
\*\*\* ile işaretli deneyler akreditasyon kapsamındadır.  
\*#\* ile işaretli parametreler İlgili Sözleşme Kapsamında ÇSB'den yetkili İlgiliği tarafından yapılmıştır.  
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirliçlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 12.06.2023 tarih ve 32188 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

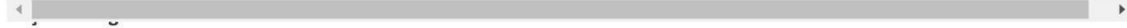
<b>Numune Alma Sorumlusu</b> <b>İsmail DOĞAN</b> Çevre Mühendisi  <i>e-imzalıdır.</i>	<b>Kimya Lab. Sorumlusu</b> <b>Özge ŞAHİN</b> Kimya Mühendisi  <i>e-imzalıdır.</i>  <b>Laboratuvar Müdürü</b> (Laboratory Manager) <b>Ömer ÖNDER</b> Kimyager   <i>e-imzalıdır.</i>	<b>Raporlama Sorumlusu</b> <b>Ezgi ŞİRİNOĞLU</b> Gıda Mühendisi  <i>e-imzalıdır.</i>
---	--	--

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
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Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Başvuru No	B111007
Başvuru Tarihi	14.12.2022 13:11
Tesis	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ
Laboratuvar	AKRE ÇEVRE GIDA VE END. ANALİZ HİZM. SAN. VE TİC. LTD. ŞTİ.



#### Parametreler

Parametre	Adet	Fiyat	Toplam
pH	12	90,00 ₺	1.080,00 ₺
Kompozit Numune Alma (2 Saatlik)	12	565,00 ₺	6.780,00 ₺
Yağ ve Gres	12	510,00 ₺	6.120,00 ₺
Toplam Kjeldahl Azotu	1	400,00 ₺	400,00 ₺
Balık Biyodeneyi	1	390,00 ₺	390,00 ₺
Kimyasal Oksijen İhtiyacı	12	390,00 ₺	4.680,00 ₺
Toplam Siyanür	1	370,00 ₺	370,00 ₺
Toplam Fosfor	1	240,00 ₺	240,00 ₺
Toplam Krom	1	205,00 ₺	205,00 ₺
Florür	1	210,00 ₺	210,00 ₺
Sülfat	1	205,00 ₺	205,00 ₺
Renk	1	205,00 ₺	205,00 ₺
Kurşun	1	205,00 ₺	205,00 ₺
Krom VI	1	205,00 ₺	205,00 ₺
Kadmiyum	1	205,00 ₺	205,00 ₺
Demir	1	205,00 ₺	205,00 ₺
Çinko	1	205,00 ₺	205,00 ₺
Bakır	1	205,00 ₺	205,00 ₺
Civa	1	205,00 ₺	205,00 ₺
Askıda Katı Madde	12	160,00 ₺	1.920,00 ₺
Metal Analizleri Ön İşlem	1	290,00 ₺	290,00 ₺
Taban Fiyat:			+ 10.140,00 ₺
Kdv Hariç Toplam:			34.670,00 ₺

#### Açıklamalar

İzmir içinden bir laboratuvar tercihimizdir.

İLETİŞİM

TOLGAHAN CEN - 554 230 08 55

KEZİBAN ÖZTÜRK - 544 551 23 65



Y-35/287/2021

Protokol Number



Sayfa  
(Page No) : 1 / 2



SU ANALİZ LABORATUVARI

İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
Tel: 0(232) 712 14 16 Fax: 0(232) 712 28 30



AB-0972-T

8232691

07-23

ANALİZ RAPORU  
Analysis Report

**Müşterinin Adı**  
(Customer Name) : ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ

**Müşterinin Adresi**  
(Customer Address) : ÇORAKLAR MAH. 5001/1 SOKAK NO:3/18 - ALİAĞA/İZMİR

**Gelen Evrak Tarih ve Sayısı**  
(Date and number of the incoming document) : 20.06.2023 / 1

**Numunenin Cinsi ve Sınıfı**  
(The kind and class of the test item) : ATIK SU

**Numuneyi Alan-Aldığı Yer-Tarih-Saat**  
(Date of Test) : AKRETEST - AAT ÇIKIŞ SUYU - 20.06.2023 - 12:40

**Numunenin Kabul Tarihi**  
(The date of receipt of test item) : 20.06.2023

**Raporun Sayfa Sayısı**  
(Number of pages of the Report) : 2

**Açıklamalar**  
(Remarks) : MELBES B111007 Başvuru Numaralı Numune S.K.K.Y. Tablo 19 a Göre AKRETEST Tarafından Çalışılmıştır.

\*Deney laboratuvarı olarak faaliyet gösteren AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti. TÜRKAK'tan AB-0972-T ile TS EN ISO 17025:2017 standardına göre akredite edilmiştir. AKRE Çevre Gıda ve End. Analiz Hizm. San. ve Tic. Ltd. Şti. accredited by TÜRKAK under registration number AB-0972-T for TS EN ISO 17025:2017 as test laboratory.

\*\*Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınirliği konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

\*\*\*Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

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Mühür  
(Seal)



Tarih  
(Date)

14.07.2023

Laboratuvar Müdürü  
(Laboratory Manager)

Ömer ÖNDER  
Kimyager



e-imzalıdır.

Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
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Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Y-35/287/2021

Sayfa  
(Page No) 2 / 2  
Protokol No  
(Protocol Number) 8232691



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**ANALİZ RAPORU**  
Analysis Report



AB-0972-T

8232691

07-23

Numune Kod No / Mühür No	AKRETEST2244
Numunenin Geliş Sebebi	İÇ İZLEME
Numuneyi Gönderen Kişi/Kurum/Kuruluş	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SAN. BÖLGESİ
İlgi Yazı Tarih ve Sayısı	20.06.2023 / 1
Numuneyi Alan - Alındığı Yer - Tarih - Saat	AKRETEST - AAT ÇIKIŞ SUYU - 20.06.2023 - 12:40
Numunenin Adı - Cinsi - Markası	ATIK SU
Numunenin Ambalaj Sekli ve Etiketi / Miktarı	BARKOD ETİKETLİ / 2 LT P.E SİSE-2 LT CAM SİSE / 4,0 LİTRE
Analizin Başlama - Bitiş Tarih ve Saati	20.06.2023 14:40:31 / 21.06.2023 17:00:54
Numunenin Durumu / Alınış Metodu	MÜHÜRLÜ / 2 SAATLİK KOMP / TS 5667-10

Kimyasal Parametreler	Birim (Unit)	Metot (Method)	Tayin Limiti (LOQ)	Analize Alındığı Tarih	Mevzuat Limiti		Deney Sonucu (The test result)
					En Az	En Çok	
*pH Tayini	- log H	TS EN ISO 10523 MULTİMETRE	-	20.06.2023	6.00	9.00	7.50
*Askıda Katı Madde Tayini	mg/L	SM 2540 D GRAVİMETRİK METOT	3	20.06.2023	-	200	6.8
*Kimyasal Oksijen İhtiyacı (KOİ) Tayin	mg/L	SM 5220 B AÇIK REFLAKS METOT	10	20.06.2023	-	250	57.12
*Yağ Gres Tayini	mg/L	SM 5520 B GRAVİMETRİK METOT	10	20.06.2023	-	20	<10

**NOT :**  
\*\*\* ile işaretli deneyler akreditasyon kapsamındadır.  
\* # : ile işaretli parametreler İlgili Sözleşme Kapsamında ÇSB'den yetkililiği tarafından yapılmıştır.  
- Numune Akretest Numune Kabul Kriterleri'ne uygun olarak kabul edilmiştir.  
- Genişletilmiş Ölçüm Belirsizlikleri Müşteri talebi veya yasal mevzuatlar zorunlu kıldığı durumlarda belirtilir.  
- Koyu renkte ve kırmızı renkle yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.

**Deney sonuçlarının değerlendirilmesi :** (31.12.2004 tarih ve 25687 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliği (S.K.K.Y) ve 12.05.2023 tarih ve 32188 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren Su Kirliliği Kontrol Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik)

**Uygunluk Beyanı**  
(Evaluation of the test results)

<b>Numune Alma Sorumlusu</b>  İsmail DOĞAN Çevre Mühendisi  e-imzalıdır.	<b>Kimya Lab. Sorumlusu</b>  Özge ŞAHİN Kimya Mühendisi  e-imzalıdır.  <b>Laboratuvar Müdürü</b> (Laboratory Manager) Ömer ÖNDER Kimyager   e-imzalıdır.	<b>Raporlama Sorumlusu</b>  Ezgi ŞİRİNOĞLU Gıda Mühendisi  e-imzalıdır.
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Analiz sonuçları, sadece numune alma esnasındaki proses koşullarıyla ilgilidir.  
Bu raporun hiçbir bölümü laboratuvarın yazılı izni olmadan kopyalanıp çoğaltılamaz.  
İmzasız ve mühürsüz raporlar geçersizdir.  
Sonuçlar deneyi yapılan numune için geçerlidir.  
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Testing reports without signature and seal are not valid  
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Akre Çevre Gıda ve End. Analiz Hizm. San. Tic. Ltd. Şti  
İsmet İnönü Mahallesi 2083. Sokak No:12/B Çeşme/İZMİR  
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Web: www.akretest.com

Form No: AKRE.Frm.66 Yayın Tarihi: 02.02.2019 Form Revizyon No / Tarihi : 06 / 01.06.2022





Yeterlik Belge No  
Y-35/292/2021



Test  
TS EN ISO/IEC 17025  
AB-0012-T

AB-0012-T

IZE AS.23.0706005

08-23

**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
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**ANALİZ RAPORU**

Rapor No / Tarihi	IZE.AS.23.0706005 / 07/08/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliaga/Izmir/Türkiye		
Numune No	IZE.AS.23.0706005	Numunenin Alındığı Yer	A.A.T ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	06/07/2023 15:30:00 06/07/2023 17:30:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Soğuk Zincir - Kimyasal Koruma
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi-Saati	06/07/2023 - 18:38:44
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş Tarihi	07/07/2023 07/07/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	2500 ml Cam / Plastik Kap		
Metot Numarası	Metot Adı - Tarih		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		
Taşeron Laboratuvar Metodu			

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmektedir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporunda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.	(1 / 2) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.:  
26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T
IZE.AS.23.0706005
08-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.0706005 / 07/08/2023			
Analiz Parametreleri	Analiz Metodu	Birim	Analiz Sonucu	SKKY-Tablo 19 (Sınır Değer)
Askıda Katı Madde (a)	Taşeron Laboratuvar Metodu	mg/L	<4	200
Kimyasal Oksijen İhtiyacı (a)	Taşeron Laboratuvar Metodu	mg/L	20,3	250
Yağ ve Gres (a)	Taşeron Laboratuvar Metodu	mg/L	<10	20
pH (*y)	SM 4500-H+ B		7,5	6-9
* İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*y) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür. (a) İşaretili parametreler taşeron laboratuvarı tarafından analiz edilmiş olup, IST.AS.23.0707100 nolu analiz raporu ekte sunulmuştur.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

Didem ÖZÇEVİK  
Şube Kalite Yöneticisi  
Elektronik olarak imzalanmıştır.

Uğur Buğra ÇEVİK  
Şube Laboratuvar Müdürü  
Elektronik olarak imzalanmıştır.

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.	Sayfa ( 2 / 2 )
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.:  
26.05.2023





Yeterlik Belge No  
Y-35/292/2021



Test  
TS EN ISO/IEC 17025  
AB-0012-T

AB-0012-T

IZE AS.23.0731005

08-23

**ARTEK MÜHENDİSLİK**  
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**ANALİZ RAPORU**

Rapor No / Tarihi	IZE.AS.23.0731005 / 22/08/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliağa/İzmir/Türkiye		
Numune No	IZE.AS.23.0731005	Numunenin Alındığı Yer	A.A.T ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	31/07/2023 13:55:00 31/07/2023 15:55:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Soğuk Zincir - Kimyasal Koruma
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi-Saati	31/07/2023 - 23:19:47
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	01/08/2023 01/08/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	2500 ml Cam / Plastik Kap		
Metot Numarası	Metot Adı - Tarih		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		
Taşeron Laboratuvar Metodu			

<p>Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.</p>	( 1 / 2 ) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.:  
26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T
IZE.AS.23.0731005
08-23

Firma Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
Rapor No / Tarihi	IZE.AS.23.0731005 / 22/08/2023			
Analiz Parametreleri	Analiz Metodu	Birim	Analiz Sonucu	SKKY-Tablo 19 (Sınır Değer)
Askıda Katı Madde (a)	Taşeron Laboratuvar Metodu	mg/L	10,7	200
Kimyasal Oksijen İhtiyacı (a)	Taşeron Laboratuvar Metodu	mg/L	<15	250
Yağ ve Gres (a)	Taşeron Laboratuvar Metodu	mg/L	<10	20
pH (*y)	SM 4500-H+ B		7,39	6-9
* İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*y) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür. (a) İşaretili parametreler taşeron laboratuvarı tarafından analiz edilmiş olup, IST.AS.23.0801105 nolu analiz raporu ekte sunulmuştur.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

Didem ÖZÇEVİK  
Şube Kalite Yöneticisi  
Elektronik olarak imzalanmıştır.

Uğur Buğra ÇEVİK  
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Elektronik olarak imzalanmıştır.

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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.:  
26.05.2023





Yeterlik Belge No  
Y-35/292/2021



AB-0012-T
IZE.AS.23.0814007
09-23

## ARTEK MÜHENDİSLİK Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş. ÇEVRE LABORATUVARI

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### ANALİZ RAPORU

Rapor No / Tarihi	IZE.AS.23.0814007 / 04/09/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliağa/İzmir/Türkiye		
Numune No	IZE.AS.23.0814007	Numunenin Alındığı Yer	A..A.T ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	14/08/2023 14:55:00 14/08/2023 16:55:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Soğuk Zincir - Kimyasal Koruma
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi-Saati	14/08/2023 - 17:53:14
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	15/08/2023 17/08/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	2500 ml Cam / Plastik Kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

<p>Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporun yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.</p>	( 1 / 2 ) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T

IZE.AS.23.0814007

09-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.0814007 / 04/09/2023			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	27	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	7,8	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*y)	SM 4500-H+ B		8,29	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*y) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

**Didem ÖZÇEVİK**  
**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporlarda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamaktadır.

Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



AB-0012-T

IZE AS.23.0829001

09-23

## ARTEK MÜHENDİSLİK Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş. ÇEVRE LABORATUVARI

Zübeyde Hanım Mah. 7532 Sok. No:196/A Karşıyaka / İZMİR  
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### ANALİZ RAPORU

Rapor No / Tarihi	IZE.AS.23.0829001 / 25/09/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliaga/İzmir/Türkiye		
Numune No	IZE.AS.23.0829001	Numunenin Alındığı Yer	A.A.T ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	28/08/2023 09:30:00 28/08/2023 11:30:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Soğuk Zincir
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi - Saati	29/08/2023 - 08:21:26
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	29/08/2023 31/08/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	3500 ml Cam / Plastik kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporun yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.	(1 / 2) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T
IZE.AS.23.0829001
09-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.0829001 / 25/09/2023			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	74,3	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	69,6	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*)	SM 4500-H+ B		8,33	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

**Didem ÖZÇEVİK**  
**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporlarda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.

Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



Test  
TS EN ISO/IEC 17025  
AB-0012-T

AB-0012-T

IZE.AS.23.0913004

09-23

## ARTEK MÜHENDİSLİK Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş. ÇEVRE LABORATUVARI

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### ANALİZ RAPORU

Rapor No / Tarihi	IZE.AS.23.0913004 / 25/09/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliağa/İzmir/Türkiye		
Numune No	IZE.AS.23.0913004	Numunenin Alındığı Yer	AAT ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	12/09/2023 18:00:00 12/09/2023 20:00:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Kimyasal Korumu- Soğuk Zincir
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi- Saati	13/09/2023 - 08:26:14
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	14/09/2023 19/09/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	3500 ml Cam / Plastik kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

Deneysel laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deneysel raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deneysel ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deneysel metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporlarda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.	(1 / 2) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T
IZE.AS.23.0913004
09-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.0913004 / 25/09/2023			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	51	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	25,4	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*y)	SM 4500-H+ B		8,81	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*y) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

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**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

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Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



AB-0012-T

IZE.AS.23.0927002

10-23

**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

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**ANALİZ RAPORU**

Rapor No / Tarihi	IZE.AS.23.0927002 / 20/10/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliaga/İzmir/Türkiye		
Numune No	IZE.AS.23.0927002	Numunenin Alındığı Yer	AAT ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	27/09/2023 15:00:00 27/09/2023 17:00:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Kimyasal Korumu- Soğuk Zincir
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi- Saati	27/09/2023 - 17:50:00
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	27/09/2023 29/09/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	3500 ml Cam / Plastik kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

Deneysel laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deneysel raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deneysel ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deneysel metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporlarda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.	( 1 / 2 ) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T
IZE.AS.23.0927002
10-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.0927002 / 20/10/2023			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	40	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	26,5	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*)	SM 4500-H+ B		7,91	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

**Didem ÖZÇEVİK**  
**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporlarda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.

Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



AB-0012-T
IZE.AS.23.1011003
10-23

## ARTEK MÜHENDİSLİK Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş. ÇEVRE LABORATUVARI

Zübeyde Hanım Mah. 7532 Sok. No:196/A Karşıyaka / İZMİR  
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### ANALİZ RAPORU

Rapor No / Tarihi	IZE.AS.23.1011003 / 30/10/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliağa/İzmir/Türkiye		
Numune No	IZE.AS.23.1011003	Numunenin Alındığı Yer	AAT ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	11/10/2023 13:20:00 11/10/2023 15:20:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Kimyasal Korumu- Soğuk Zincir
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi- Saati	11/10/2023 - 17:45:26
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	11/10/2023 14/10/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	3500 ml Cam / Plastik kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

<p>Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporada yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.</p>	( 1 / 2 ) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T

IZE.AS.23.1011003

10-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.1011003 / 30/10/2023			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	51	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	11,6	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*)	SM 4500-H+ B		8,2	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

**Didem ÖZÇEVİK**  
**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

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Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



Test  
TS EN ISO/IEC 17025  
AB-0012-T

AB-0012-T

IZE.AS.23.1025001

11-23

## ARTEK MÜHENDİSLİK Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş. ÇEVRE LABORATUVARI

Zübeyde Hanım Mah. 7532 Sok. No:196/A Karşıyaka / İZMİR  
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### ANALİZ RAPORU

Rapor No / Tarihi	IZE.AS.23.1025001 / 28/11/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliağa/İzmir/Türkiye		
Numune No	IZE.AS.23.1025001	Numunenin Alındığı Yer	AAT ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	25/10/2023 09:50:00 25/10/2023 11:50:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Kimyasal Korumu- Soğuk Zincir
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi- Saati	25/10/2023 - 17:03:01
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	25/10/2023 27/10/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	3500 ml Cam / Plastik kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporada yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.	(1 / 2) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T

IZE.AS.23.1025001

11-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.1025001 / 28/11/2023			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	36,8	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	31,5	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*y)	SM 4500-H+ B		7,97	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*y) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

**Didem ÖZÇEVİK**  
**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

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Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



AB-0012-T
IZE AS.23.1110005
11-23

**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

Zübeyde Hanım Mah. 7532 Sok. No:196/A Karşıyaka / İZMİR  
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**ANALİZ RAPORU**

Rapor No / Tarihi	IZE.AS.23.1110005 / 28/11/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliaga/İzmir/Türkiye		
Numune No	IZE.AS.23.1110005	Numunenin Alındığı Yer	A.A.T. ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	09/11/2023 17:25:00 09/11/2023 19:25:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Kimyasal Korumu- Soğuk Zincir
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi- Saati	10/11/2023 - 09:29:10
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	10/11/2023 13/11/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	3500 ml Cam / Plastik kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

Deneysel laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deneysel raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deneysel ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deneysel metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporun yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.	( 1 / 2 ) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T
IZE.AS.23.1110005
11-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.1110005 / 28/11/2023			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	30	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	19,2	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*)	SM 4500-H+ B		8,45	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

**Didem ÖZÇEVİK**  
**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporlarda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamaktadır.

Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



Test  
TS EN ISO/IEC 17025  
AB-0012-T

AB-0012-T

IZE.AS.23.1124015

12-23

## ARTEK MÜHENDİSLİK Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş. ÇEVRE LABORATUVARI

Zübeyde Hanım Mah. 7532 Sok. No:196/A Karşıyaka / İZMİR  
Tel: +90 232 375 77 33 (Pbx) Faks: +90 232 375 77 11

www.artekcevre.com.tr

### ANALİZ RAPORU

Rapor No / Tarihi	IZE.AS.23.1124015 / 11/12/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliaga/İzmir/Türkiye		
Numune No	IZE.AS.23.1124015	Numunenin Alındığı Yer	AAT ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	24/11/2023 14:15:00 24/11/2023 16:15:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Kimyasal Korumu- Soğuk Zincir
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi- Saati	24/11/2023 - 17:43:56
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	24/11/2023 28/11/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	3500 ml Cam / Plastik kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

<p>Deneysel laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deneysel raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deneysel ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deneysel metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporlarda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.</p>	( 1 / 2 ) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T
IZE.AS.23.1124015
12-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.1124015 / 11/12/2023			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	<15	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	13,7	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*)	SM 4500-H+ B		8,05	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

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**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

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Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

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**ANALİZ RAPORU**

Rapor No / Tarihi	IZE.AS.23.1208049 / 25/12/2023	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliaga/İzmir/Türkiye		
Numune No	IZE.AS.23.1208049	Numunenin Alındığı Yer	A.A.T. ÇIKIŞ
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	08/12/2023 09:10:00 08/12/2023 11:10:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Kimyasal Korumu- Soğuk Zincir
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi- Saati	08/12/2023 - 17:45:49
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	08/12/2023 13/12/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	3500 ml Cam / Plastik kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporun yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.	( 1 / 2 ) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T
IZE.AS.23.1208049
12-23

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.1208049 / 25/12/2023			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	58	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	19,9	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*)	SM 4500-H+ B		7,15	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

**Didem ÖZÇEVİK**  
**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporlarda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamaktadır.

Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



Test  
TS EN ISO/IEC 17025  
AB-0012-T

AB-0012-T

IZE.AS.23.1222001

01-24

## ARTEK MÜHENDİSLİK Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş. ÇEVRE LABORATUVARI

Zübeyde Hanım Mah. 7532 Sok. No:196/A Karşıyaka / İZMİR  
Tel: +90 232 375 77 33 (Pbx) Faks: +90 232 375 77 11

www.artekcevre.com.tr

### ANALİZ RAPORU

Rapor No / Tarihi	IZE.AS.23.1222001 / 08/01/2024	Rapor Onay Tarihi	
Müşterinin Adı	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ		
Müşterinin Adresi	Çoraklar Mah. 5001/1 Sok. No: 3/18 Aliağa/İzmir/Türkiye		
Numune No	IZE.AS.23.1222001	Numunenin Alındığı Yer	A.A.T. Çıkış
Müşteri Numune No		Numunenin Alınma Tarihi - Saati	22/12/2023 14:05:00 22/12/2023 16:05:00
Numune Türü	ATIK SU	Numuneye Uygulanan İşlemler	Kimyasal Korumu- Soğuk Zincir
Numuneyi Alan	ARTEK İZMİR ŞUBE	Numunenin Kabul Tarihi- Saati	22/12/2023 - 17:37:11
Numunenin Alınma Şekli	2 Saatlik	Analiz Başlangıç / Bitiş	22/12/2023 25/12/2023
Numunenin Getirilişi	Yerinden Alınma	Sayfa Sayısı	2
Numune Miktarı / Ambalajı	3500 ml Cam / Plastik kap		
Metot Numarası	Metot Adı - Tarih		
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)		
SM 5520 B	Standard Methods - Oil and Grease - Liquid Liquid,Partition-Gravimetric Method-(2011)		
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)		
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)		
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atık Sulardan Numune Alma Kilavuzu-(2021)		

Deneysel laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TÜRKAK) deneysel raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deneysel ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deneysel metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporun yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.	(1 / 2) Sayfa
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FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023





Yeterlik Belge No  
Y-35/292/2021



**ARTEK MÜHENDİSLİK**  
**Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.**  
**ÇEVRE LABORATUVARI**

**ANALİZ RAPORU**

AB-0012-T

IZE.AS.23.1222001

01-24

<b>Firma Adı</b>	ALİAĞA KİMYA İHTİSAS VE KARMA ORGANİZE SANAYİ BÖLGESİ			
<b>Rapor No / Tarihi</b>	IZE.AS.23.1222001 / 08/01/2024			
<b>Analiz Parametreleri</b>	<b>Analiz Metodu</b>	<b>Birim</b>	<b>Analiz Sonucu</b>	<b>SKKY-Tablo 19 (Sınır Değer)</b>
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	72	250
Askıda Katı Madde (*)	SM 2540 D	mg/L	11,2	200
Yağ Gres (*)	SM 5520 B	mg/L	<10	20
pH (*)	SM 4500-H+ B		7,81	6-9
(*) İşaretili parametreler Bakanlık ve Türkak kapsamında raporlanmıştır. (*) İşaretili parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.				
<b>Açıklamalar :</b> Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.				

Sorumlu İmzalar :

**Didem ÖZÇEVİK**  
**Şube Kalite Yöneticisi**  
**Elektronik olarak imzalanmıştır.**

**Uğur Buğra ÇEVİK**  
**Şube Laboratuvar Müdürü**  
**Elektronik olarak imzalanmıştır.**

Deney laboratuvarı olarak faaliyet gösteren ARTEK, TÜRKAK' tan [AB-0012-T] ile [TS EN ISO/IEC 17025] standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu(TURKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan sayfalarda verilmiştir. İmzasız raporlar geçersizdir. Bu rapor laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. Bu raporun hiçbir bölümü tek başına veya ayrı ayrı kullanılamaz. Raporlarda yer alan sonuçlar sadece incelenen numuneye aittir. Firmamız tarafından alınan numunelerde; numune alma ve taşıma işlemleri Numune Alma Prosedürüne, Numune Alma Talimatına ve numune alma planına uygun olarak gerçekleştirilmiştir. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır. E-imzalı raporların geçerliliği sadece dijital doküman üzerinden sağlanmaktadır. Raporun basımı halinde geçerliliği doğrulanamamaktadır.

Sayfa ( 2 / 2 )

FORM NO:FR.510.01-01  
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023



## ANNEX-10 STAKEHOLDER CONSULTATION MEETING

### Annex-10.1 Announcements and Presentation for the Stakeholder Consultation Meeting



Figure- 19 Local Newspaper Announcement of SCM (Yeni Asır-September 3, 2024)

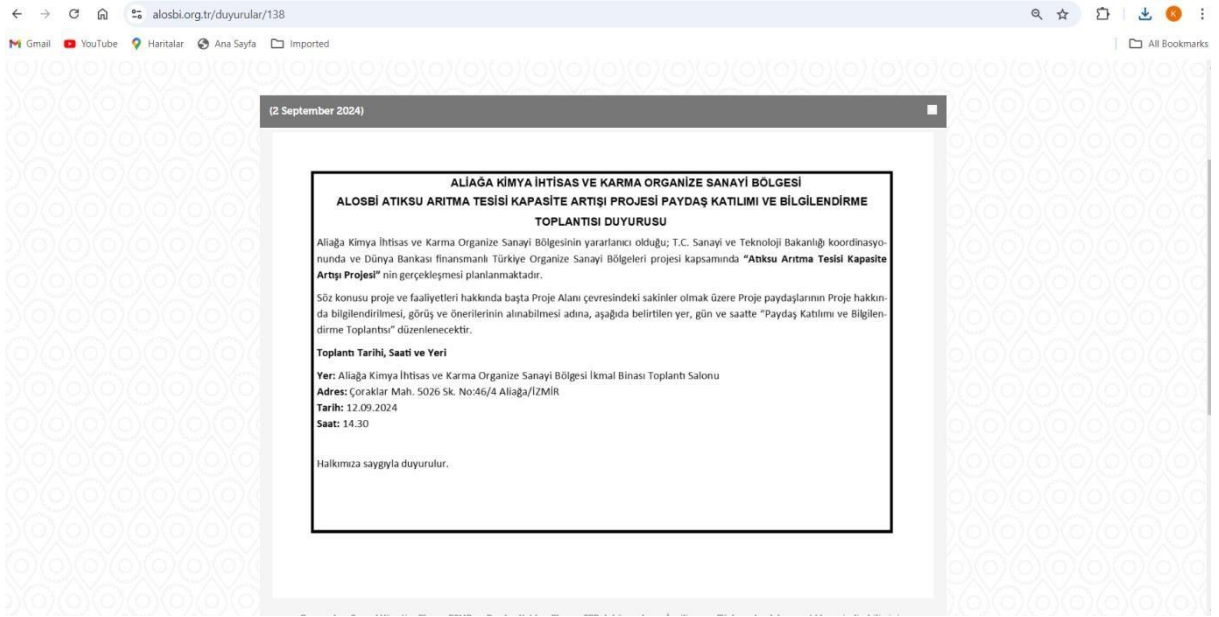


Figure- 20 Website Announcement of SCM



Figure- 21 Announcements in Neighborhood Mukhtar's Offices

## Annex-10.2 Institutional Invitation Letters



e-İmzalıdır

Sayı : 202409000064

04.09.2024

Konu : Aliğa Kimya İhtisas ve Karma Organize Sanayi Bölgesi Atıksu Arıtma Tesisi Kapasite Artışı Projesi  
Paydaş Katılım Toplantısı Hk.

T.C.

ALİAĞA KAYMAKAMLIĞI

Aliğa Kimya İhtisas ve Karma Organize Sanayi Bölgesinin Sanayi ve Teknoloji Bakanlığı koordinasyonunda ve Dünya Bankası finansmanlı, Türkiye Organize Sanayi Bölgeleri projesi kapsamında “ALOSBİ Atıksu Arıtma Tesisi Kapasite Artışı Projesi” nin gerçekleştirilmesi planlanmaktadır.

Söz konusu proje ve faaliyetleri hakkında başta Proje Alanı çevresindeki sakinler olmak üzere Proje paydaşlarının Proje hakkında bilgilendirilmesi, görüş ve önerilerinin alınabilmesi adına Kurumunuzdan bir temsilcinin toplantıya katılmasını ve toplantı tarih ve saat bilgilendirme broşürünü kamu kurumu bilgilendirme panosunda paylaşılması hususunda gereği arz olunur.

İlana çıkma tarihi: 02/09/2024

İlanın bitiş tarihi: 09/09/2024

Saygılarımla,

e-İmzalıdır

Müge Banu BENEK  
Bölge Müdürü

### EKLER :

1. Ek) 1 Adet Duyuru Metni

Adres : Aliğa Kimya İhtisas ve Karma Organize Sanayi Bölgesi,  
Çoraklar Mahallesi 5028 Sokak No 6 Aliğa/İZMİR  
Tel : 0232 621 50 50 Faks : 0232 621 50 60

Ayrıntılı Bilgi İçin : Murat DİLEKÇİ  
E-Posta : murat.dilekci@alosbi.org.tr

Bu belge 5070 sayılı e-İmza kanununa göre Müge Banu BENEK tarafından 04.09.2024 tarihinde e-imzalanmıştır.  
Evrak <http://erp.alosbi.org.tr:82/colab.ebys/eimzakontrol/?202409000064> linkinden doğrulayabilirsiniz.





Sayı : 202409000061

04.09.2024

**Konu :** Aliğa Kimya İhtisas ve Karma Organize Sanayi Bölgesi Atıksu Arıtma Tesisi Kapasite Artışı Projesi  
Paydaş Katılımı Toplantısı Hk.

T.C.  
**İZMİR VALİLİĞİ**  
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Aliğa Kimya İhtisas ve Karma Organize Sanayi Bölgesinin Sanayi ve Teknoloji Bakanlığı koordinasyonunda ve Dünya Bankası finansmanlı, Türkiye Organize Sanayi Bölgeleri projesi kapsamında “ALOSBİ Atıksu Arıtma Tesisi Kapasite Artışı Projesi” nin gerçekleştirilmesi planlanmaktadır.

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İlana çıkma tarihi: 02/09/2024

İlanın bitiş tarihi: 09/09/2024

Saygılarımla,

e-İmzalıdır

Müge Banu BENEK  
Bölge Müdürü

**EKLER :**

1. Ek) 1 Adet Duyuru Metni

Adres : Aliğa Kimya İhtisas ve Karma Organize Sanayi Bölgesi,  
Çoraklar Mahallesi 5028 Sokak No:6 Aliğa/İZMİR  
Tel : 0232 621 50 50 Faks : 0232 621 50 60

Ayrıntılı Bilgi İçin : Murat DİLEKÇİ  
E-Posta : murat.dilekci@alosbi.org.tr

Bu belge 5070 sayılı e-İmza kanununa göre Müge Banu BENEK tarafından 04.09.2024 tarihinde e-imzalanmıştır.  
Evrak <http://erp.alosbi.org.tr:82/colab.ebys/eimzakontrol/?202409000061> linkinden doğrulayabilirsiniz.



e-İmzalıdır

Sayı : 202409000059

04.09.2024

**Konu :** Aliaga Kimya İhtisas ve Karma Organize Sanayi Bölgesi Atıksu Arıtma Tesisi Kapasite Artışı Projesi  
Paydaş Katılım Toplantısı Hk.

**İZMİR ALİAĞA AÇIK CEZA İNFAZ KURUMU**

Aliaga Kimya İhtisas ve Karma Organize Sanayi Bölgesinin Sanayi ve Teknoloji Bakanlığı koordinasyonunda ve Dünya Bankası finansmanlı, Türkiye Organize Sanayi Bölgeleri projesi kapsamında “ALOSBİ Atıksu Arıtma Tesisi Kapasite Artışı Projesi” nin gerçekleştirilmesi planlanmaktadır.

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İlana çıkma tarihi: 02/09/2024

İlanın bitiş tarihi: 09/09/2024

Saygılarımla,

e-İmzalıdır

Müge Banu BENEK  
Bölge Müdürü

**EKLER :**

1. Ek) 1 Adet Duyuru Metni

Adres : Aliaga Kimya İhtisas ve Karma Organize Sanayi Bölgesi,  
Çoraklar Mahallesi 5028 Sokak No:6 Aliaga/İZMİR  
Tel : 0232 621 50 50 Faks : 0232 621 50 60

Ayrıntılı Bilgi İçin : Murat DİLEKÇİ  
E-Posta : murat.dilekci@alosbi.org.tr

Bu belge 5070 sayılı e-İmza kanununa göre Müge Banu BENEK tarafından 04.09.2024 tarihinde e-imzalanmıştır.  
Evrak <http://erp.alosbi.org.tr:82/colab.ebys/eimzakontrol/?202409000059> linkinden doğrulayabilirsiniz.



e-İmzalıdır

Sayı : 202409000058

04.09.2024

**Konu :** Aliağa Kimya İhtisas ve Karma Organize Sanayi Bölgesi Atıksu Arıtma Tesisi Kapasite Artışı Projesi  
Paydaş Katılım Toplantısı Hk.

**ALOSBİ JANDARMA KARAKOL KOMUTANLIĞI**

Aliağa Kimya İhtisas ve Karma Organize Sanayi Bölgesinin Sanayi ve Teknoloji Bakanlığı koordinasyonunda ve Dünya Bankası finansmanlı, Türkiye Organize Sanayi Bölgeleri projesi kapsamında “ALOSBİ Atıksu Arıtma Tesisi Kapasite Artışı Projesi” nin gerçekleştirilmesi planlanmaktadır.

Söz konusu proje ve faaliyetleri hakkında başta Proje Alanı çevresindeki sakinler olmak üzere Proje paydaşlarının Proje hakkında bilgilendirilmesi, görüş ve önerilerinin alınabilmesi adına Kurumunuzdan bir temsilcinin toplantıya katılmasını ve toplantı tarih ve saat bilgilendirme broşürünü kamu kurumu bilgilendirme panosunda paylaşılması hususunda gereği arz olunur.

İlana çıkma tarihi: 02/09/2024

İlanın bitiş tarihi: 09/09/2024

Saygılarımla,

e-İmzalıdır

Müge Banu BENEK  
Bölge Müdürü

**EKLER :**

1. Ek) 1 Adet Duyuru Metni

Adres : Aliağa Kimya İhtisas ve Karma Organize Sanayi Bölgesi,  
Çoraklar Mahallesi 5028 Sokak No:6 Aliağa/İZMİR  
Tel : 0232 621 50 50 Faks : 0232 621 50 60

Ayrıntılı Bilgi İçin : Murat DİLEKÇİ  
E-Posta : murat.dilekci@alosbi.org.tr

Bu belge 5070 sayılı e-İmza kanununa göre Müge Banu BENEK tarafından 04.09.2024 tarihinde e-imzalanmıştır.  
Evrak <http://erp.alosbi.org.tr:82/colab.ebys/eimzakontrol/?202409000058> linkinden doğrulayabilirsiniz.



e-İmzalıdır

Sayı : 202409000060

04.09.2024

**Konu :** Aliğa Kimya İhtisas ve Karma Organize Sanayi Bölgesi Atıksu Arıtma Tesisi Kapasite Artışı Projesi  
Paydaş Katılım Toplantısı Hk.

**T.C.**  
**ALİAĞA BELEDİYE BAŞKANLIĞI**

Aliğa Kimya İhtisas ve Karma Organize Sanayi Bölgesinin Sanayi ve Teknoloji Bakanlığı koordinasyonunda ve Dünya Bankası finansmanlı, Türkiye Organize Sanayi Bölgeleri projesi kapsamında “ALOSBİ Atıksu Arıtma Tesisi Kapasite Artışı Projesi” nin gerçekleştirilmesi planlanmaktadır.

Söz konusu proje ve faaliyetleri hakkında başta Proje Alanı çevresindeki sakinler olmak üzere Proje paydaşlarının Proje hakkında bilgilendirilmesi, görüş ve önerilerinin alınabilmesi adına Kurumunuzdan bir temsilcinin toplantıya katılmasını ve toplantı tarih ve saat bilgilendirme broşürünü kamu kurumu bilgilendirme panosunda paylaşılması hususunda gereği arz olunur.

İlana çıkma tarihi: 02/09/2024

İlanın bitiş tarihi: 09/09/2024

Saygılarımla,

e-İmzalıdır

Müge Banu BENEK  
Bölge Müdürü

**EKLER :**

1. Ek) 1 Adet Duyuru Metni

Adres : Aliğa Kimya İhtisas ve Karma Organize Sanayi Bölgesi,  
Çoraklar Mahallesi 5028 Sokak No:6 Aliğa/iZMİR  
Tel : 0232 621 50 50 Faks : 0232 621 50 60

Ayrıntılı Bilgi İçin : Murat DİLEKÇİ  
E-Posta : murat.dilekci@alosbi.org.tr

Bu belge 5070 sayılı e-İmza kanununa göre Müge Banu BENEK tarafından 04.09.2024 tarihinde e-imzalanmıştır.  
Evrak <http://erp.alosbi.org.tr:82/colab.ebys/eimzakontrol/?202409000060> linkinden doğrulayabilirsiniz.

Sayı:

02/09/2024

**Konu:** Aliağa Kimya İhtisas ve Karma Organize Sanayi Bölgesi  
Atıksu Arıtma Tesisi Paydaş Katılım Toplantısı

### ÇORAKLAR MAHALLESİ MUHTARLIĞI

Aliağa Kimya İhtisas ve Karma Organize Sanayi Bölgesinin Sanayi ve Teknoloji Bakanlığı koordinasyonunda ve Dünya Bankası finansmanlı, Türkiye Organize Sanayi Bölgeleri projesi kapsamında "ALOSBI Atıksu Arıtma Tesisi Kapasite Artışı Projesi"nin gerçekleştirilmesi planlanmaktadır.

Söz konusu proje ve faaliyetleri hakkında başta Proje Alanı çevresindeki sakinler olmak üzere Proje paydaşlarının Proje hakkında bilgilendirilmesi, görüş ve önerilerinin alınabilmesi adına Kurumunuzdan bir temsilcinin toplantıya katılmasını ve toplantı tarih ve saat bilgilendirme broşürünü kamu kurumu bilgilendirme panosunda paylaşılması hususunda gereği arz olunur.

İlana çıkma tarihi: 02/09/2024

İlanın bitiş tarihi: 09/09/2024

Müge Banu BENEK  
Bölge Müdürü

Elden Teslim aldım

Ek1) Duyuru Metni

Ek2) Proje Tanıtım Broşürü

Aliağa Kimya İhtisas ve Karma Organize Sanayi Bölgesi  
Çoraklar Mah. 5028 Sk. No:6 Aliağa / İzmir

T: 0232 621 50 50 F: 0232 621 50 60 W: www.alosbi.org.tr M: info@alosbi.org.tr


**Sayı:****02/09/2024****Konu:** Aliağa Kimya İhtisas ve Karma Organize Sanayi Bölgesi  
Atıksu Arıtma Tesisi Paydaş Katılım Toplantısı**ÇALTILIDERE MAHALLESİ MUHTARLIĞI**

Aliağa Kimya İhtisas ve Karma Organize Sanayi Bölgesinin Sanayi ve Teknoloji Bakanlığı koordinasyonunda ve Dünya Bankası finansmanlı, Türkiye Organize Sanayi Bölgeleri projesi kapsamında "ALOSBi Atıksu Arıtma Tesisi Kapasite Artışı Projesi"nin gerçekleştirilmesi planlanmaktadır.

Söz konusu proje ve faaliyetleri hakkında başta Proje Alanı çevresindeki sakinler olmak üzere Proje paydaşlarının Proje hakkında bilgilendirilmesi, görüş ve önerilerinin alınabilmesi adına Kurumunuzdan bir temsilcinin toplantıya katılmasını ve toplantı tarih ve saat bilgilendirme broşürünü kamu kurumu bilgilendirme panosunda paylaşılması hususunda gereği arz olunur.

**İlana çıkma tarihi:** 02/09/2024**İlanın bitiş tarihi:** 09/09/2024  
Müge Banu BENEK  
Bölge Müdürü**Ek1) Duyuru Metni****Ek2) Proje Tanıtım Broşürü**

67 den tebliğati aldım  
Ahmet Söğüt Ulu

Aliağa Kimya İhtisas ve Karma Organize Sanayi Bölgesi  
Çoraklar Mah. 5028 Sk. No:6 Aliağa / İzmir

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## Annex 10.3 SCM Brochure and Presentation

Ayrıca ÇSYP kapsamında uygulanacak **izleme ve denetim faaliyetleri** de tanımlanmıştır. ÇSYP çalışmaları kapsamında toprak ve hava ortamları, gürültü, koku, su kaynakları, atıklar, trafik üzerinde oluşabilecek etkiler belirlenmiş ve ilgili etki azaltma önlemleri belirtilmiştir.

İzleme gereklilikleri de ÇSYP kapsamındaki izleme tablolarında tanımlanarak sunulmuştur. Buna göre projenin inşaat aşamasında, üst toprak kaybı, toprak kirliliği, toz emisyonları, gürültü, sızıntı, su kirliliği, atık üretimi ve iş sağlığı ve güvenliği, işletme aşamasında ise kimyasalların depolanması ve kullanımı, atıklar, gürültü, geçim kaynakları, şikâyetler, topluluk çatışmaları, paydaş katılımı, iş sağlığı ve güvenliği ve işgücü parametreleri **ÇSYP'de belirlenen şartlara uygun olarak izlenecektir.**

Bu ÇSYP'nin uygulanmasından sorumlu ana kuruluş Aliğa OSB'dir. Operasyonel ve idari görevleri yürütmek üzere bir Proje Yönetim Birimi (PYB) kurulacaktır. Ayrıca, Projenin farklı aşamalarında (inşaat öncesi, inşaat ve işletme), ÇSYP kapsamındaki çeşitli işler için farklı taraflar (Danışman, Yükleniciler, İnşaat Denetim Danışmanı, STB/PUB) sorumluluk olacaktır. Söz konusu tüm çalışmalar Aliğa OSB tarafından koordine edilecektir.

Proje dokümanları Aliğa OSB'nin internet sitesi (<https://www.alosbi.org.tr/>) ve STB Proje Uygulama Birimi (PUB) internet sitesi (<https://yesiloseb.sanayi.gov.tr/>) üzerinden kamuya açık olacaktır.

Bölge halkının hem inşaat hem de işletme aşamasında Proje ile ilgili endişelerini, görüşlerini, şikâyetlerini ve önerilerini almak adına bir **Şikâyet Giderme Mekanizması** kurulmuştur.

Bu mekanizma aracılığıyla iletilen şikâyetler, hızlı ve hassas bir şekilde ele alınacaktır.

Şikâyet Giderme Mekanizması'nın kurulmasından ve uygulanmasından sorumlu kurum Aliğa OSB olacaktır. Bu kapsamda proje ile ilgili beklenti, görüş, öneri ve şikâyetlerin paylaşılması için aşağıda verilen iletişim kanalları da ayrıca kullanılabilir:

**Paydaş Katılım Toplantıları**

**İzmir Aliğa OSB ile iletişim kanalları:**

**Telefon: +90 232 621 50 50**  
**E-mail: <https://www.alosbi.org.tr>**  
**<https://www.alosbi.org.tr/>**

Tüm iç ve dış paydaşlar, projeye ilgili şikâyetlerini ve geri bildirimlerini doğrudan devlet yetkililerine iletmek için Cumhurbaşkanlığı İletişim Merkezi (CİMER) gibi diğer şikâyet giderme mekanizmalarından da yararlanma hakkına sahip olacaktır.

- [www.cimer.gov.tr](http://www.cimer.gov.tr)
- Çağrı merkezi: 150
- Telefon numarası: +90 312 525 55 55



**T.C. Sanayi ve Teknoloji Bakanlığı**  
**Sanayi Bölgeleri Genel Müdürlüğü**  
**Türkiye Organize Sanayi Bölgeleri Projesi**



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**İzmir**  
**Aliğa Organize Sanayi Bölgesi**  
**Atıksu Arıtma Tesisi Kapasite Artışı Projesi**

**Bilgilendirme Broşürü**

**EYLÜL 2024**

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**İzmir Aliğa OSB Atıksu Arıtma Tesisi Kapasite Artışı Projesi ("Proje")**, Türkiye Organize Sanayi Bölgeleri Projesi kapsamındaki alt projelerden biridir. Proje, Türkiye'deki Organize Sanayi Bölgelerinin (OSB) verimliliğini, çevresel sürdürülebilirliğini ve rekabet gücünü artırmayı hedeflemektedir.

Dünya Bankası (DB)/Uluslararası İmar ve Kalkınma Bankası (IBRD) tarafından finanse edilen proje, T.C. Sanayi ve Teknoloji Bakanlığı (STB) aracılığı ile Aliğa OSB tarafından uygulanacaktır.

**Proje, mevcut AAT'nin genişletilmesi ve iyileştirilmesi için planlar geliştirilmiştir.**

Halihazırda kapasitesi 3,500 m<sup>3</sup>/gün olan ve 3 ana kolektörden beslenen mevcut bir Atıksu Arıtma Tesisi bulunmaktadır. Proje ile mevcut arıtma ünitelerinin bulunduğu parsel üzerinde günlük 8.500 m<sup>3</sup>/gün kapasiteli ikinci bir AAT inşaat edilmesi ve mevcut AAT ile aynı deşarj hattının kullanılması planlanmaktadır.

Proje, OSB'nin yerleşik sanayi alanındaki mevcut AAT arazisi içinde inşa edilecektir. Mevcut AAT alanı Aliğa OSB'ye aittir (parsel no: 141/24). (Bkz. Şekil.1)

Aliğa OSB Atıksu Arıtma Tesisi'nde ise tesisin kapasitesi 8.500 m<sup>3</sup>/gün artırılabilecektir. Dolayısıyla arıtma tesisi 12.000 m<sup>3</sup>/gün kapasite ile hizmet verecektir. Atıksu arıtma tesisi işletmeye alındıktan sonra, çamur miktarı ve karakterizasyonuna göre bu Proje kapsamında ilişkili tesis olarak belirlenen bir

**Solar Kurutma Ünitesi** inşa edilecektir. Solar Kurutma Tesisi, planlanan AAT işletmeye alındıktan sonra üretilen çamurun miktarına ve karakterizasyonuna göre inşa edilecektir.

**Proje'nin beklenen sonuçları aşağıdaki gibidir:**

- Proje, Aliğa Organize Sanayi Bölgesi'ndeki hem mevcut hem de potansiyel işletmeler tarafından üretilen tüm endüstriyel atıksuların arıtılmasını sağlayacak ve böylece halk sağlığı, çevre ve doğal kaynaklara yönelik risklerin azalmasını sağlayacaktır,
- Proje, su kalitesinin iyileştirilmesi, kirliliğin azaltılması, hassas su kütlelerinin korunması ve sıkı çevre düzenlemelerine bağlılık sağlayacaktır.
- Proje, Türkiye'nin atıksu sektöründe ulusal ve uluslararası kalite standartlarına uyum çabalarına katkı sağlayacaktır;
- Halkın sağlık standartları projenin uygulanmasıyla iyileştirilecektir.

**Projenin inşaatının on iki (12) ayda tamamlanması planlanmaktadır.**

Proje, ulusal mevzuatın yanı sıra DB Koruma Politikaları, yönergeler, standartlar ve en iyi uygulama belgeleri de dâhil olmak üzere iyi uluslararası uygulamalarla uyumlu olacaktır.

Proje herhangi bir ekonomik yer değiştirmeye neden olmayacaktır. AAT'nin inşası sırasında sadece yerel işletmeler üzerinde önemli

olmayan geçici etki olacaktır. Yolların kapanmasından mümkün olduğunca kaçınılabilecektir. İnşaat faaliyetleri nedeniyle proje çevresindeki işletmelerin kapanması beklenmemektedir.



Şekil 1: Aliğa OSB Atıksu Arıtma Tesisi Haritası

**Beklenen etkilerin yönetimi için bir Çevresel ve Sosyal Yönetim Planı (ÇSYP) geliştirilmiştir.**

ÇSYP, Proje'nin geliştirilmesinden kaynaklanan olası çevresel ve sosyal etki ve riskleri belirlemek ve önemli olumsuz çevresel etkiler için etki azaltma önlemleri önermek amacıyla hazırlanmıştır.

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Figure- 22 Brochure Distributed During the SCM



## TÜRKİYE ORGANİZE SANAYİ BÖLGELERİ PROJESİ

### İZMİR ALİAĞA ORGANİZE SANAYİ BÖLGESİ ATIKSU ARITMA TESİSİ KAPASİTE ARTIŞI PROJESİ

#### PAYDAŞ KATILIMI TOPLANTISI

##### BİLGİLENDİRME SUNUMU

EYLÜL 2024



PROJE YÜRÜTÜCÜSÜ KİMDİR?  
PROJE UYGULAYICISI KİMDİR?  
PROJE FİNANSÖRÜ KİMDİR?

PROJE YÜRÜTÜCÜSÜ: Sanayi ve Teknoloji Bakanlığı

PROJE UYGULAYICISI: İzmir Aliğa Organize Sanayi Bölgesi

PROJE FİNANSÖRÜ: Dünya Bankası



#### PROJENİN AMACI ve FAYDALARI

- Planlanan kapasite artışı, şu anda işletilen Atıksu Arıtma Tesisi (AAT) kapasitesini günlük 12.000 m<sup>3</sup>'e çıkaracaktır.
- Proje, Aliğa OSB'deki hem mevcut hem de potansiyel işletmeler tarafından üretilen tüm endüstriyel atıksuların arıtılmasını sağlayacak ve böylece halk sağlığı, çevre ve doğal kaynaklara yönelik risklerin azalmasını sağlayacaktır.
- Proje, su kalitesinin iyileştirilmesi, kirliliğin azaltılması, hassas su kütellerinin korunması ve sıkı çevre düzenlemelerine bağlılık sağlayacaktır.
- Proje, Türkiye'nin atıksu sektöründe ulusal ve uluslararası kalite standartlarına uyum çabalarına katkı sağlayacaktır.
- Halkın sağlık standartları projenin uygulanmasıyla iyileştirilecektir.



#### PROJENİN YERİ

- ❖ Proje, İzmir'in Aliğa ilçesinde uygulanacaktır.
- ❖ İzmir Aliğa OSB AAT Kapasite Artışı Projesi, mevcut AAT'nin bulunduğu parsel üzerinde inşa edilecektir.
- ❖ AAT için tahsis edilen alan 6,3 hektar olup bu alan Aliğa OSB'ye aittir (parsel no: 141/24).





#### PROJENİN ÖZELLİKLERİ

- ❖ Bu Proje, artan atık su girişini karşılamayı ve aynı zamanda atık suyun ıslah amacıyla arıtılmasını sağlayarak kaynak kullanımını ve sürdürülebilirliği optimize etmeyi amaçlamaktadır.
- ❖ AAT, deşarj standartlarına uymak ve metal, gıda, kağıt hamuru ve kağıt, kimyasallar vb. dahil olmak üzere farklı endüstriyel sektörlerde artan sayıda fabrikaya hizmet etmek için gerekli arıtma ünitelerini sağlayacaktır.
- ❖ Projenin personel ihtiyaçları henüz kesinleşmemiş olmakla beraber işe alım sürecinde yerel halka öncelik verilecektir.
- ❖ Projenin inşaat faaliyetlerinin 12 ay süreceği öngörülmektedir.



#### DEŞARJ NOKTASI



#### Çevresel Hassas ve Koruma Alanları

- Proje alanı herhangi bir koruma alanı içerisinde yer almamaktadır.
- Projenin sadece bölgeye değil, Aliağa Körfezi'nin tamamına olumlu etki yapması beklenmektedir.
- Atıksuların uygun şekilde arıtılması ve deşarj edilmesi, deşarj deresinin birleştiği hassas su kütlesi olarak tanımlanan Kunduz Deresi için olumlu olarak değerlendirilmektedir.
- Proje, atık suyun gerekli standartlara uygun şekilde arıtılmasını amaçlamaktadır.



## ÇEVRESEL VE SOSYAL ÇALIŞMALARIN KAPSAMI



## Çevresel Etkiler - Toprak

### Olası Etkiler

- Üst toprak kaybı,
- İnşaat makine ve ekipmanlarında kullanılacak yakıt, boya ve yağların sızması ve dökülmesi nedeniyle toprak kirlenmesi riski,
- Proje kapsamında oluşacak katı veya sıvı atıkların kontrolsüz depolanması veya bertaraf edilmesi durumunda oluşabilecek toprak kirliliği.

### Alınacak Önlemler

- ✓ Sadece belirlenen çalışma sahaları ve güzergahları kullanılarak kirlenmeye maruz kalacak toprak miktarı minimuma indirilecektir.
- ✓ Şantiyede kullanılacak iş makinesi ve araçlar için gerekli olan yakıt, öncelikle en yakın istasyondan sağlanacak; gerekli görülmesi halinde sahada depolanabilecek yakıtlar, gerekli sızdırmazlık önlemlerinin alındığı alanlarda depolanacaktır.
- ✓ Erozyona sebep olmamak için bitkisel toprağın sıyırılması olması gerekenden erken yapılmayacaktır ve sıyrılan toprak uygun koşullarda (çevre düzenlemesi vs) yeniden kullanılmak üzere depolanacaktır.
- ✓ Atıkların toprak kirliliği yaratmayacak şekilde yönetilecektir.



## Çevresel Etkiler-Su Kaynakları

### Olası Etkiler

- Faaliyetler sırasında içme ve kullanım amaçlı su tüketimi,
- İnşaat döneminde yağışlı günlerde yağmursuyunun toprak taşınmasıyla yüzeyel suları kirlenme potansiyeli,
- Oluşan atıksuyun yüzey suyu ve yeraltı suyu kalitesinde kirliliğe sebep olabilecek sızıntı olasılığı,
- Yakıt, kimyasal madde depolama, taşıma veya ekipmanlarda kullanımı sırasında hidrolik yağların veya yakıtların kazara sızması/ yayılması,
- Uygunsuz atık depolama, taşıma nedeniyle yakındaki su kaynaklarında kalitenin bozulması.
- İşletme sırasında atıksuyun yeterince arıtılmaması neticesinde su kaynakları üzerinde kirlilik etkiye sebep olması.

### Alınacak Önlemler

- ✓ Su Kaynakları Yönetim Planı hazırlanacak ve uygulanacaktır. Çalışanlar, bu konuda eğitilecektir. Bu konu, Yüklenicilerin sözleşmelerine dahil edilecektir.
- ✓ Yağmursuyundan kaynaklanan yüzey akışı için gerekli drenaj önlemleri alınacaktır.
- ✓ Dizel yakıt ve tehlikeli sıvı atık varilleri/konteynerleri de dahil olmak üzere tüm kimyasal depolama konteynerleri, inşaat sırasında toprak, yüzey suyu ve yeraltı suyu kirlenmesi riskini en aza indirmek için geçici depolama alanında ikinci muhafaza içine yerleştirilecektir.
- ✓ AAT'nin çıkış suyu kalitesi ilgili yönetmelikte belirtilen sınır değerlerle uyumlu olacak ve deşarj edilen su Kunduz Deresi'nin kirlenmesine neden olmayacaktır.
- ✓ Boruların ve pompaların bakım ve onarım işleri geciktirilmeden yapılacaktır.
- ✓ İnşaat çalışmalarında oluşacak atıksu, su kaynaklarına deşarj edilmeyecektir.



## Çevresel Etkiler-Biyolojik Ortam

### Olası Etkiler

- Alanın habitatı şu anda OSB'nin varlığıyla değiştiğinden, alandaki türlerin bolluğu ve sayısı düşük olduğundan ve söz konusu türler kritik veya endemik öneme sahip olmadığından, bu türlerin tehdit durumunun Proje nedeniyle değişmesi beklenmemektedir.
- Projenin dolaylı etkileri; gürültü, toz ve insan faaliyetlerinden kaynaklanan rahatsızlıklardır. İnşaat öncesi aşamanın bir diğer etkisi de araç trafiği olacaktır.

### Alınacak Önlemler

- ✓ Proje alanı içerisinde korunan ve hassas ekosistemler veya türlerin olması öngörülmektedir.
- ✓ Çalışma alanı sınırları içerisinde gerekli görülmedikçe bitki örtüsü temizliği yapılmayacaktır. Bitki örtüsü temizliği yapılan yerlerde mümkün olduğunca tekrar bitkilendirme yapılacaktır.
- ✓ Arazi hazırlığı aşamasından önce, inşaat faaliyetlerinin yapılacağı bölge önceden belirlenecek ve bu sınırların dışına çıkmayacaktır.
- ✓ İnşaat öncesinde ve sırasında toz, gürültü ve insan faaliyetlerinden kaynaklı etkilere maruz kalabilecek fauna türlerinin, inşaat alanlarını terk etmesi ve yakın çevredeki benzer habitatlara doğru hareket etmesi beklenmektedir.



## Çevresel Etkiler – Atıklar

### Olası Etkiler

- Atıkların ayrıştırılmaması ve/veya atıkların uygunsuz şekilde depolanması, taşınması veya aktarılması nedeniyle kaynakların verimsiz yönetimi ve atık miktarının artması.
- Tehlikeli atıkların uygunsuz depolanması, taşınması ve aktarılması nedeniyle halk sağlığı tehlikesi risklerinin artması, yüzey suyu, yeraltı suyu ve hava kalitesinin bozulması ve/veya toprak kirlenmesi olasılığı.
- Sahada atıkların izinsiz gömülmesi ve yakılması nedeniyle hava ve/veya toprak kirliliği riski oluştuğu.



### Alınacak Önlemler

- Atık Yönetim Planı, Yüklenici tarafından hazırlanacak ve çalışanlara plan hakkında eğitim verilecektir.
- Proje kapsamında oluşacak atıklar, atık yönetimi hiyerarşisine uygun olarak yönetilecektir.
- Atıklar ayrıştırılacak (tehlikeli/tehlikesiz, geri dönüştürülebilir/geri dönüştürülemez) ve belirlenen geçici depolama alanlarında depolanacaktır.
- Atıkların geri dönüşümü, taşınması ve bertarafı lisanslı firmalar ve/veya ilgili Alağa Belediyesi araçları ile gerçekleştirilecektir.
- Atıkların sahada herhangi bir şekilde yakılması veya gömülmesine ve/veya atıkların yakındaki yollara veya su kaynaklarına dökülmesine izin verilmeyecektir.
- Geri dönüştürilemeyen ve değerlendirilemeyen katı atıklar çarşıya sahasındaki çöp konteynörlerinde toplanacak ve belediye tarafından uzaklaştırılacaktır.

### Atık Üretecek Olası Kaynaklar

- İnşaatla çalışacak personel kaynaklı katı atık oluşumu
- Ahşap, kağıt, karton, plastik vb. ambalaj atıkları
- Projenin inşaat ve işletme aşamaları kapsamında oluşabilecek tehlikeli ve özel atıklar, kontamine kaplar, bez ve giderler, atık pil ve akümülatörler, atık yağlar vb.
- Yıkım ve inşaat atıkları



## Çevresel Etkiler - Koku

### Olası Etkiler

- Atıksu arıtma tesisi kaynaklı tesis çevresinde düşük miktarda koku oluşumu görülebilir. Ancak en yakın hassas alıcı, atıksu arıtma tesisinden 3.4 km mesafedeki en yakın yerleşim yeri olan Çatıldere mahallesi'dir. Proje alanı çevresindeki tarım alanlarında ve sanayi tesislerinde etki görülme olasılığı vardır.

### Alınacak Önlemler

- Arıtma işlemi sonrası oluşan fazla çamur, kokuya neden olmayacak şekilde stabilize edilecektir.
- Koku oluşumunu önlemek için çamurun uygun şekilde ve zamanında bertaraf edilmesi sağlanacaktır.
- Kokulu gazların kontrolü için düzenli olarak emisyon ölçümleri gerçekleştirilecektir.
- Koku ile ilgili şikayetleri yönetmek için işleyen bir şikayet giderme mekanizması kurulacaktır.



## Çevresel Etkiler - Hava Kalitesi ve Gürültü

### Olası Etkiler

- Projenin inşaat aşamasında hava kalitesi üzerindeki başlıca etkiler, malzeme taşıma, araç hareketi ve ağır iş makinelerinden (kamyonlar, ekskavatörler, vb.) kaynaklanan emisyonlardan kaynaklı etkiler olacaktır. Hava kirliliği esas olarak toz emisyonları ve egzoz emisyonları ile sera gazı emisyonları kaynaklı olacaktır.
- Sahanın hazırlanması ve inşaat faaliyetleri için kullanılacak ulaşım araçları, makineler ve diğer ekipmanları tarafından gürültü oluşması beklenmektedir.

### Alınacak Önlemler

- İnşaat başlamadan önce Hava Kalitesi ve Emisyon Yönetim Planı ve Gürültü ve Titreşim Yönetim Planı Yüklenici tarafından hazırlanacak ve tüm çalışmalar bu plana uygun olarak yürütülecektir.
- Toprak yığınları da dahil olmak üzere açık alan kaynaklarından kaynaklanan toz, muhafazalar ve örtüler kurmak ve sulama gibi toz kontrol önlemleri kullanılarak en aza indirilecektir.
- İnşaat araçları için hız sınırlamaları tanımlanacak ve bunlara uyulacaktır. Olabildiğince asfalt yollar kullanılacaktır.
- İnşaat sırasında gerekirse toz ve gürültü bariyerleri kullanılarak toz ve gürültü azaltımı sağlanacaktır.
- İnşaat araçlarının şantiyeye girmeyi bekleyen veya şantiyede bekleyen motorlarını çalışır durumda tutmalarına izin verilmeyecektir.
- Proje kapsamında gürültü seviyesi düşük ekipman seçimine özen gösterilecektir.
- İnşaat faaliyetleri mümkün olduğunca gündüz saatlerinde yapılacaktır.



## SOSYO-EKONOMİK ETKİLER



## SOSYO-EKONOMİK ETKİLER

### Olası Etkiler

**Kültürel Miras:** Kültürel miras kaybı.  
**İstihdam / Ekonomi:** Ekonomiye pozitif katkı.  
**Toplum Sağlığı ve Güvenliği:** Toplum üzerinde toz, gürültü, kaynak tüketimi gibi sebeplerle oluşabilecek potansiyel rahatsızlık.  
**Çalışan Sağlığı ve Güvenliği:** Çalışanların çalışma şartları, haklarının korunması, iş sağlığı ve güvenliği.  
**Trafik ve Yaya Güvenliği:** İnşaat faaliyetlerinin trafik ve yayaalara karşı oluşturduğu doğrudan ve dolaylı olumsuz etkiler.

### Alınacak Önlemler

- ✓ İnşaat çalışmalarını sırasında bulunan herhangi bir kültürel varlık "tesadüfı bulgu" olarak belirlenecek ve kaydedilecektir. Tesadüfı bulgu sonrasında izlenecek ve uygulanacak adımlar için bir "Tesadüfı Bulgu Prosedürü" hazırlanmıştır.
- ✓ Yerel malzemelerin kullanılması ve yerli mal ve hizmetlerin yerel kaynaklardan temin edilmesi yoluyla yerel ekonomiye katkıda bulunulmasına özen gösterilecektir. Mümkün olduğunca yerel istihdama öncelik verilecektir.
- ✓ Yüklenicilerin davranış kurallarını oluşturması sağlanacak ve yerel halkın çalışanlardan kaynaklı olumsuz davranışlardan etkilenmemesi için gerekli tedbirler alınacaktır.
- ✓ İnşaat çalışmaları sırasında yürütülecek faaliyetler, yerel halkın sosyal ve ekonomik yaşamını kısıtlamayacak şekilde gerçekleştirilecektir. Halkın güvenliği ve günlük yaşamı üzerinde herhangi bir etkiden kaçınmak için, çalışma öncesinde sahaya güvenlik ve bilgilendirme işaretleri yerleştirilecektir. İnşaat alanının çevresi tel çit ile çevrilecek ve uyarı levhaları asılacaktır.
- ✓ Çalışanlar için Şikayet Mekanizması oluşturulacak ve işletilecektir.
- ✓ Uluslararası Çalışma Örgütü (ILO) düzenlemeleri uyarınca asgari yasal çalışma standartları (çocuk/zorla çalışmanın önüne geçilmesi, ayrımcılıkla mücadele, çalışma saatleri, asgari ücretler) ile uyumlu çalışılacaktır.
- ✓ Hiçbir çalışana dil, din, ırk, cinsiyet, siyasi düşünce, felsefi inanç temelli ayrımcılık yapılmayacaktır. Tüm çalışanlara ayrımcılık ve davranış kuralları konusunda eğitim verilecektir.
- ✓ İşe alım sonrasında işçilerle, ulusal mevzuat ve Davranış Kuralları uyarınca iş tanımı, çalışma saatleri, ücretler, istihdam hüküm ve koşulları ile hakları içeren yazılı sözleşmeler imzalanacaktır.
- ✓ ISG riskleri ile ilgili olarak Projenin uygulanmasını etkin bir şekilde kontrol edecek A Sınıfı uzmanlık sertifikasına sahip bir ISG uzman sahada tam zamanlı olarak bulunacaktır. Tüm çalışanlar ve yükleniciler için yerel ve uluslararası iş sağlığı ve güvenliği mevzuatına ve yönergelerine uyum zorunludur. Tüm personel, gerekli ISG eğitimleri alacaktır.



V

## PAYDAŞ KATILIMI

### Olası Etkiler

Paydaşlarla iletişim eksikliği

### Alınacak Önlemler

- ✓ Proje paydaşlarıyla etkileşim/iletişim ve katılım için gerekli planlama yapılacaktır.
- ✓ Paydaşlar ile aşağıdaki hususlarda düzenli olarak farkındalık ve iletişim sağlanacaktır:
- ✓ Projenin mevcut ilerleyişi hakkında bilgi
- ✓ Şikayet Mekanizması



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## ŞİKAYET MEKANİZMASI

- Şikayet Mekanizması; Proje ile topluluklar arasında tüm tarafların yararına olacak şekilde uzun vadeli iletişim için geliştirilen bir sistemdir.
- Proje kapsamında bir Şikayet Mekanizması kurulacak ve Proje'nin ömrü boyunca aktif olacaktır.
- Şikayet Mekanizması herkes tarafından erişilebilir olacaktır.
- Aliğa OSB tarafından oluşturulan şikayet mekanizmasının uygulanmasına ilişkin bilgiler de Aliğa OSB web sitesinde duyurulacaktır.



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## SÜRECE NASIL DAHİL OLABİLİRSİNİZ?

### Görüş ve Şikayet Bildirme Mekanizması

Proje ile ilgili beklentilerinizi, görüşlerinizi, önerilerinizi ve şikayetlerinizi;

- Paydaş Katılım Toplantıları sırasında,
- Sanayi ve Teknoloji Bakanlığı: [info@sanayi.gov.tr](mailto:info@sanayi.gov.tr) adresinden,
- İzmir Aliğa Organize Sanayi Bölgesi: [info@alosbi.org](mailto:info@alosbi.org) adresinden
- Şikayet Mekanizmasını kullanarak,
- Cumhurbaşkanlığı İletişim Merkezi (CİMER) ve Yabancılar İletişim Merkezi (YİMER) aracılığıyla iletebilirsiniz.



TÜRKİYE ORGANİZE SANAYİ BÖLGELERİ PROJESİ

İZMİR ALİAĞA ORGANİZE SANAYİ BÖLGESİ  
ATIKSU ARITMA TESİSİ KAPASİTE ARTIŞI  
PROJESİ

**KATILIMINIZ VE İLGİNİZ İÇİN TEŞEKKÜR EDERİZ!**

**SORULAR, YORUMLAR VE GÖRÜŞLER ?**



Figure- 23 Project Information Presentation that was presented at the SCM



#### Annex-10.4 Stakeholder Consultation Meeting Photos





**Figure- 24 Photos taken during SCM**



Name-Surname	Profession
Dr. Okan BİLKAY	Mechanical Engineer
Dr. İ.Haluk ÇERİBAŞI	Environmental Engineer
Hüseyin TEKİN	Environmental Engineer, M.Sc.
Ülkü ÖZEREN	Environmental Engineer, M.Sc.
Ebru Güler	Environmental Engineer
Kübra ÇİBUK	Environmental Engineer
Reyyan KARAHAN	Environmental Engineer, M.Sc.
Mehmet Emre ÇALIŞIR	Environmental Engineer
Zafer AYAŞ	Biologist
Sümeyra ÇAKIR	Biologist
Nazan Duygu YIGİTER	Urban Planner, Msc
Barış Uslu	Hydrogeology Engineer
Hüseyin ÇİÇEK	Sociologist, Ph.D.

