GENERAL DIRECTORATE OF KONYA WATER AND SEWERAGE ADMINISTRATION

SUSTAINABLE CITIES PROJECT- ADDITIONAL FINANCE (SCP2-AF)

KONYA-SUĞLA WATER SUPPLY TRANSMISSION LINE PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Haziran 2025

SÜRDÜRÜLEBİLİR ŞEHİRLER

TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI

İLBANK TÜRKİYE'NİN YAPICI GÜCÜ

THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

Project Information

Project	Details
Name	Sustainable Cities Project II- Additional Financing KOSKİ-W3 (Construction of Konya-Suğla Water Supply Transmission Line) Environmental and Social Management Plan (ESMP)
Project Owner	General Directorate of Konya Water And Sewerage Administration (KOSKİ)
Promoter	İLBANK A.Ş.
Consultant	SAFEGE ANKARA Central Branch Office (Türkiye) & SAFEGE (France) (Member) & TÜMAŞ Turkish Engineering Consulting And Contracting Company (Türkiye) (Member) - Joint Venture
Sub-Consultant	POSEİDON Environmental Social Consultancy Engineering Trade Ltd. Co. (POSEİDON)

Record of Issue

Company	Version	Date Issued	Method of Delivery
İLBANK A.Ş.	Rev00	12.02.2025	e-mail: Word and PDF
İLBANK A.Ş.	Rev01	23.05.2025	e-mail: Word and PDF
İLBANK A.Ş.	Rev01	19.06.2025	e-mail: Word and PDF

Prepared by: POSEİDON Environmental Social Consultancy Engineering Trade Ltd. Co. (POSEİDON)

Pelin Deniz YOĞURTÇU	Project Manager/International Projects Coordinator
Hilal AYDIN	Project Engineer / Environmental Engineer
Fikret VAROL	Project Engineer / Environmental Engineer
Begüm AYDOĞAN	Project Engineer / Environmental Engineer
Cansu GÜLER	HSE Expert/ Environmental Engineer
Hüseyin GÜNGÖR	HSE Expert
Merve YILDIRIM	Sociologist
Ali Can CAN	Sociologist

TABLE OF CONTENTS

1. INTRODUCTION 5
1.1. Objectives 5
1.2. Scope 7
2. LEGAL FRAMEWORK 7
2.1. Institutional and Legal Framework in Türkiye Framework 8
2.2. National and International Regulatory Framework 8
2.2.1. National Legislation on Environmental, Social, Labor and Health and Safety 8
2.2.2. International Standards and World Bank Safeguard Policies 16
2.2.3. Comparison of the Requirements of WB OP 4.01 and EIA Regulation 20
2.2.4. Project Standard 22
3. DESCRIPTION OF THE PROPOSED PROJECT 22
3.1. Project Location 27
3.2. Project Population 27
3.3. Water Demand 28
3.4. Technical Characteristic of Suğla Group Water Supply Project 29
3.5. Project Schedule 32
4. ENVIRONMENTAL and SOCIAL BASELINE CONDITIONS 35
4.1. Physical Environment 35
4.1.1. Geographical Location and Topography 35
4.1.2. Land Use and Property 36
4.1.3. Climate Conditions and Meteorology 39
4.1.4. Natural Hazards and Seismicity 40
4.1.5. Geology, Hydrogeology and Hydrology 44
4.1.6. Soil and Soil Quality 58
4.1.7. Air Quality 61
4.1.8. Noise Level 63
4.1.9. Waste Management 65
4.1.10. Landscape 66
4.2. Ecology and Biodiversity 66
4.2.1. Flora 70
4.2.2. Fauna 74
4.2.3. Protected Areas 81
4.3. Socio-Economic Environment 93
4.3.1. Population 93
4.3.2. Socio-Economic Characteristic 97
4.3.3. Agriculture and Livestock 99
4.3.4. Industry 103

4.3.5. Energy and Natural Resources 103
4.3.6. Education 104
4.3.7. Health 105
4.3.8. Transportation 105
4.4. Existing Infrastructure 106
4.4.1. Existing Water Supply, Transmission and Distribution Systems 106
4.4.2. Existing Wastewater System 108
5. ENVIRONMENTAL AND SOCIAL IMPACTS OF THE PROJECT 109
5.1. Impact Assessment Approach 109
5.2. Environmental Impacts 116
5.2.1. Air Quality 116
5.2.2. Soils and Contaminated Land 118
5.2.3. Water Resources 119
5.2.4. Noise and Vibration 121
5.2.5. Biological Environment 121
5.2.6. Landscape and Visual Amenity (Aesthetics) 125
5.2.7. Resources and Waste 125
5.2.8. Climate Change 130
5.2.9. Natural Hazards 131
5.3. Impacts on Socio-Ecomomic Environment 131
5.3.1. Employment and Procurement Opportunities Created by the Project 131
5.3.2. Infrastructure and Services 133
5.3.3. Archaeological and Cultural Heritage 133
5.3.4. Labor and Working Conditions 134
5.3.5. Protecting the Work Force 134
5.3.6. Occupational Health and Safety and Working Conditions 134
5.3.7. Workers Engaged by Third Parties and the Supply Chain 135
5.3.8. Community Health, Safety and Security 135
6. MITIGATION AND MONITORING PLANS 137
Mitigation Plan 137
Monitoring Plan 146
7. INSTITUTIONAL ARRANGEMENTS and Capacity Building 154
7.1. Environmental and Social Management Structure 154
7.2. Roles and Responsibilities 154
7.3. Grievance Redress Mechanism 157
7.4. Capacity Building and Training 162
7.5. Monitoring and Reporting Arrangements 165

8. CONSULTATIONS WITH AFFECTED GROUPS AND NON-GOVERNMENTAL ORGANIZATIONS 166

8.1. Identification of Consultation Participants 166

8.2. Consultation Documentation 168

9. ANNEXES 170

ANNEX-A EIA EXEMPTION DECISION 171

ANNEX-B SWH 4th Regional Directorate Opinion Letter 172

ANNEX-C Drilling Well Logs and Analysis Result 173

ANNEX-D ANALYSIS REPORT 177

ANNEX-E CHANCE FIND PROCEDURE 209

ANNEX-F CODE OF CONDUCT 214

ANNEX-G SAMPLE GRIEVANCE AND GRIEVANCE CLOSE-OUT FORMS 216

ANNEX-H SAMPLE CONSULTATION FORM 218

LIST OF TABLES

Table 1-1.Summary of Mitigation Measures 3
Table 2-1.Regulations and/or Communiques regarding Environmental, Social, Labor, Health and Safety Aspects 9
Table 2-2.World Bank's Environmental and Social Safeguard Policies 18
Table 2-3.Comparison of EIA Regulation and WB OP 4.01 20
Table 3-1 Konya Sugla Group Population Projections According to the ILBANK Method 28
Table 3-2. Current Water Demand (October 2024) 29
Table 4-1. Long Term Meteorological Data of Konya Province (1929-2020) 39
Table 4-2. Boreholes in Konya Province 48
Table 4-3. Groundwater Bodies 49
Table 4-4. Dams and Ponds in Konya Province 50
Table 4-5 Surface Water Sources in Konya Province 51
Table 4-6 Closest Sensitive Receptors to the Sampling Locations 53
Table 4-7 Groundwater Sampling Measurement Parameters, Location and Analysis Results 54
Table 4-8 Surface Water Sampling Measurement Parameters, Location and Analysis Results 55
Table 4-9. Agricultural Potentials Represented by Different Land Use Capability Classes and Their Characteristics 58
Table 4-10 Analysis Results of Soil Sample of Project Area 60
Table 4-11 Air Quality Parameters Measured in Karatay District 61
Table 4-12 PM10 and PM2.5 Measurement Results for AML-1 and AML-2 with WBG EHS Guideline and Turkish Regulation Limit Values 62
Table 4-13 Environmental Noise Limits Values provided in RENC 63
Table 4-14 Noise Level Guidelines of WBG EHS Guidelines 64
Table 4-15 Background Noise Level Measurement Results for NML-1 and NML-2 64
Table 4-16 Number of solid waste processing plants in Konya Province as of 2019 65
Table 4-17 Annexes to the Bern Convention 69
Table 4-18 Appendices to CITES 69
Table 4-19 IUCN Red List Categories and Criteria 70
Table 4-20 Flora Species in and around the Project Area 71
Table 4-21. Possible Fish Species in and around the Project Area 76
Table 4-22 Reptile and Amphibian Species in and around the Project Area 76
Table 4-23 Bird Species in and around the Project Area 79
Table 4-24 Mammal Species in and around the Project Area 81
Table 4-25 Population of Konya Districts 93
Table 4-26 Census Results for Konya Province 94
Table 4-27 Population of Ahirli District 94
Table 4-28 Population of Yalihuyuk District 94
Table 4-29 Indicators for Development Level of Konya Province 98
Table 4-30 Socio-Economic Development Ranking of Districts of Konya 99
Table 4-31 Quantities of Crops Produced in Significant Amounts and Cultivation Area in Konya (2022) 100
Table 4-32 Quantities of Crops Produced in Significant Amounts and Cultivation Area in Ahirli District (2022) 101

Table 4-33 Quantities of Crops Produced in Significant Amounts and Cultivation Area in Yalihuyuk District (2022) 102
Table 4-34 Workplace and Employment Numbers of Industrial Areas of Konya Province 103
Table 4-35 Road Distances of Ahirli District to Some Important Cities 105
Table 4-36 Road Distances of Yalihuyuk District and Some Important Cities 106
Table 4-37 Ahirli District, Existing Water Supply System Components in the Project Area 106
Table 4-38 Yalihuyuk District, Existing Water Supply System Components in the Project Area 107
Table 4-39 Ahirli District, Existing Water Transmission and Distribution Components in the Project Area .. 107
Table 4-40 Yalihuyuk District, Existing Water Transmission and Distribution Components in the Project Area 108
Table 4-41 Sewerage Network Access Status and Network Specifics of the Project Area 108
Table 5-1 Impact Significance Matrix 109
Table 5-2.Environmental and Social Impact Identification during Pre-Construction Phase 111
Table 5-3.Environmental and Social Impact Identification during Land Preparation and Construction Phase 112
Table 5-4 Ambient Air Quality Limit Values – Turkish Regulations 117
Table 5-5. Emission Limits for Stack and Non-Stack Sources 117
Table 5-6. Water Requirement of the Project 120
Table 5-7. Criteria for Sensitivity/Value of Resource 123
Table 5-8. Assessment of Impacts on Terrestrial Habitats and Flora/Fauna 124
Table 5-9 List of Possible Waste Types to be generated during Land Preparation and Construction Phase of the Project 127
Table 5-10 List of Possible Waste Types to be Generated During Operation Phase 130
Table 6-1. Mitigation Plan for the Land Preparation and Construction Phase Impacts of the Project 138
Table 6-2.Mitigation Plan for the Operation Phase Impacts of the Project 144
Table 6-3. Monitoring Plan for the Land Preparation and Construction Phase of the Project 147
Table 6-4. Monitoring Plan for the Operation Phase of the Project 151
Table 7-1 Structure of KOSKI/PIU 155
Table 7-2 Sample Grievance Register 160
Table 7-3 Proposed Training Program 163
Table 8-1 List of Potential Project-Affected Groups and Local NGOs 167
Table 8-2 Details of Planned Public/Stakeholder Consultation 168

LIST OF FIGURES

Figure 3-1.Suğla Group Water Supply Project 25
Figure 3-2.Newly Added Transmission Line (10 km) After the Change in the Project 26
Figure 3-3.Schematic Plan of Project 30
Figure 3-4. Existing Reservoirs 32
Figure 3-5. Project Schedule 34
Figure 4-1 Land Use Map According to Environmental Master Plan (Konya-Karaman Planning Area) 37
Figure 4-2 Land Use Map of the Project 38
Figure 4-3 Rockfall Map of Ahirli, and Yalihuyuk Districts 40
Figure 4-4 Floods Map of Ahirli, and Yalihuyuk Districts 41
Figure 4-5 Earthquake Hazard Map of Türkiye 42
Figure 4-6 Active Fault Map of the Project 43
Figure 4-7 Geology Map of the Project 47
Figure 4-8 Hydrology Map of the Project 52
Figure 4-9 Groundwater and Surface Water Sampling 53
Figure 4-10. Sampling Locations 57
Figure 4-11 Great Soil Groups and Land Use Capability Classes for the Project Area 59
Figure 4-12.Photograph Taken During Soil Sampling 61
Figure 4-13 Photographs from Air Quality Measurement Locations 63
Figure 4-14 Photograph from Noise Level Measurement Point 65
Figure 4-15 Photos Taken at the Project Area During Site Visit 66
Figure 4-16 Biological Field Studies in and around the Project Area 67
Figure 4-17 Bioecological Location of the Project Area 68
Figure 4-18 Geographic range map of Cyprinus carpio (Source: www.iucnredlist.org) 75
Figure 4-19 Geographic Range Map of Turtle Dove (*Streptopelia turtur)* 78
Figure 4-20 Key Biodiversity Areas in and around the Project Area 87
Figure 4-21. Important Plant Areas in and around the Project Area 88
Figure 4-22. Important Bird Areas in and around the Project Area 89
Figure 4-23. AZE Areas around the Project Area 90
Figure 4-24 Prohibited and Open Hunting Areas in Konya (2022-2023) 91
Figure 4-25 Protected Areas around the Project Area 92
Figure 4-26 Population Growth Rate of Ahirli District between 2008 and 2022 95
Figure 4-27 Population Growth Rate of Yalihuyuk District between 2008 and 2022 96
Figure 4-28 Age and Gender Distribution of the Population of Ahirli District in 2022 96
Figure 4-29 Age and Gender Distribution of the Population of Yalihuyuk District in 2022 97
Figure 4-30 Konya Subregion (TR52) 98
Figure 4-31 Agricultural Land Use Distribution of Konya Province (Source: TurkStat 2022). 100
Figure 4-32 Agricultural Land Use Distribution of Ahirli District (Source: TurkStat 2022). 101
Figure 4-33 Agricultural Land Use Distribution of Yalihuyuk District (Source: TurkStat 2022). 102
Figure 5-1 Waste Management Hierarchy 126
Figure 5-2 Composition of Municipal Waste (*former Ministry of Science, Industry and Technology, 2014)*. 128
Figure 7-1. Environmental and Social Management Structure 154

Figure 7-2 GRM Graph 159
Figure 8-1 Participation List of Consultation Meeting 169

LIST OF ABBREVIATIONS

ABPRS	Address Based Population Registration System
AF	Additional Financing
AFAD	Disaster and Emergency Management Presidency
AoI	Area of Influence
AZE	Alliance for Zero Extinction
BP	Bank Policy
CCD	UN Convention to Combat Desertification
CEKUL	Foundation for the Protection and Promotion of the Environment and Cultural Heritage
CIMER	Presidency's Communication Center
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLRTAP	Convention on Long Range Transboundary Air Pollution
dBA	Decibels adjusted
DLP	Defect Liability Period
E&S	Environmental and Social
EC	European Commission
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMEP	European Monitoring and Evaluation Programme
ESF	Environmental and Social Framework
ESHS	Environmental, Social Health, and Safety
ESIA	Environmental and Social Impact Assessment
ESMAP	Energy Sector Management Assistance Program
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Monitoring Report
ESMS	Environmental and Social Management System
EU	European Union
FI	Financial Intermediary
GBV	Gender-Based Violence
GHG	Greenhouse Gas
GIS	Geographical Information System
GRM	Grievance Redress Mechanism
GP	Good Practices
IAPCR	Industrial Air Pollution Control Regulation
IBA	Important Bird Area
IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
ILBANK	ILBANK A.S.
ILO	International Labor Organization
IPA	Important Plant Area
IPCC	Intergovernmental Panel on Climate Change
IUCN	The International Union for Conservation of Nature
KBA	Key Biodiversity Area
KGM	General Directorate of Highways
KMM	Konya Metropolitan Municipality

KOSKI	Konya Water and Sewerage Administration
MSDS	Material Safety Data Sheets
MoEUCC	Ministry of Environment, Urbanization and Climate Change
MoLSS	Ministry of Labor and Social Security
MTA	Mineral Research and Exploration General Directorate
NGOs	Non-Governmental Organizations
NTS	Non-Technical Summary
NUTS	Nomenclature of Territorial Units for Statistics
OHS	Occupational Health and Safety
OP	Operational Policies
PIU	Project Implementation Unit
$PM_{2.5}$	Particles with aerodynamic diameter smaller than 2.5μm
PM_{10}	Particles with aerodynamic diameter smaller than 10μm
PMU	Project Management Unit
POP	Persistent Organic Pollutant
PPE	Personal Protective Equipment
PIF	Project Introduction File
SCM	Stakeholder Consultation Meeting
Project	Suğla Group Transmission Line Project
PS	Performance Standard
RAMAQ	Regulation on the Assessment and Management of Air Quality
RAMSAR	Convention on Wetlands of International Importance, Especially as Waterfowl Habitat
RCA	Root Cause Analysis
RENC	Regulation on Environmental Noise Control
RESU	Regional Environment Sector Unit
SCM	Stakeholder Consultation Meeting
SCP-I	First Sustainable Cities Project
SCP-II	Second Sustainable Cities Project
SCP-II AF	Second Sustainable Cities Project Additional Financing
SEA/SH	Sexual Exploitation and Abuse/Sexual Harassment
SEGE	Socio-Economic Development Ranking Survey of Provinces and Regions
SEP	Stakeholder Engagement Plan
SEPA	Special Environmental Protection Areas
TAP	Union of Transportable Battery Manufacturers and Importers
TAYCED	Waste and Environmental Management Association
TCDD	General Directorate of Turkish State Railways
TEMA	Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats
TMP	Traffic Management Plan
ToR	Terms of Reference
TUBIVES	Türkiye Plant Data Service
TurkStat	Turkish Statistical Institute
TUMAS	Turk Muhendislik Musavirlik ve Muteahhitlik A.S.
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	UN Framework Convention on Climate Change
USEPA	United States Environmental Protection Agency

VU	Vulnerable
WB	World Bank
WBG	World Bank Group
WDA	Wildlife Development Areas
WHO	World Health Organization
WWTP	Wastewater Treatment Plant
YIMER	Presidency's Communication Center for Foreigners

EXECUTIVE SUMMARY

Sugla Group Water Supply Project ("the Project") is one of the sub-projects covered under the Sustainable Cities Project-II - Additional Financing (SCP-II-AF) to support sustainable development in Turkish cities. The emergence of the SCP-II-AF is a response to ongoing technical assistance for sustainable urban development and capital investment planning being provided under Component A of SCP-I. This exceptional demand includes identification of investments to improve public transport, water and sanitation, solid waste management, energy, environment, disaster risk management and climate resilience, and social infrastructure. The Project will be financed by the World Bank (WB). ILBANK A.S (ILBANK) is the Borrower of the loan, serving as a Financial Intermediary (FI) to Konya Water and Sewerage Administration (KOSKI). KOSKI will be responsible for the implementation of the Project at the local level (the Project Owner).

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 Safeguard Policies and the national legislation in force in Türkiye. This ESMP is therefore prepared to identify potential adverse environmental and social (E&S) impacts/risks, establish E&S baseline conditions and set out site specific mitigation, monitoring and institutional measures to be taken during land preparation, construction and operation phases of the above-mentioned Water Supply Project to eliminate adverse environmental and social impacts/risks, offset or reduce them to acceptable levels. This report has been prepared by TUMAS Turk Muhendislik Musavirlik ve Muteahhitlik A.S. (TUMAS) & POSEİDON Environmental Social Consultancy Engineering Trade Ltd. Co. (POSEİDON) Joint Venture in the scope of the environmental and social impact and risk assessment studies conducted for Sugla Water Supply Project. Furthermore, a Stakeholder Engagement Plan (SEP) has also been prepared by TUMAS & POSEİDON Joint Venture for the Project. The SEP encompasses identification of stakeholders, planned stakeholder consultation activities and the process of stakeholder engagement

The Project will be performed in Sugla Group (Ahirli, and Yalihuyuk Districts) in Konya Province located in the Central Anatolia Region of Türkiye. Sugla Group Water Supply Project included in the sub-projects of the SCP-II-AF aims to provide safe, reliable and sustainable drinking water in Sugla Groups Districts by providing reliable services through construction of 55.5 km drinking water transmission line, Akkise reservoir, and pumping stations. Within the scope of the Project, Sugla Group drinking water supply will be met by wells to be drilled in Asagikaraoren Neighborhood of Seydisehir District selected by State Hydraulic Works (SHW) 4th Regional Directorate. Water will be supplied to the project neighborhoods with four pumping stations and a new collection reservoir to be built across Sugla Lake.

The expected results from the Project are listed below:

- The Project will enable KOSKI to provide safe and sufficient drinking water to the Suğla Group Districts;
- The Project will provide contribution for Türkiye to comply with the national and EU's regulatory requirements established for the drinking water; and
- The Project will increase access to improved water services for the people living in the Project area.

The Project's anticipated environmental and social impacts/risks will be in terms of air quality, soil, water resources, noise, biological environment, landscape, resources and waste, climate change, socioeconomic environment and occupational health and safety, cultural heritage, and community health, safety and security.

The Project will be in compliance with the good international practice, including WB Safeguard Policies, guides, standards and best practices documents alongside the national legislation. Specific standards related to the project are as follows:

- WB Operational Policy (OP) 4.01 – Environmental Assessment,
- WB OP 4.04 – Natural Habitats,
- WB OP 4.11 – Physical Cultural Resources,
- WB OP 4.12 – Involuntary Resettlement,
- Bank Policy (BP) 17.50 Bank Disclosure Policy,

- World Bank Group (WBG) General Environmental, Health and Safety (EHS) Guidelines,
- WBG Industry Sector Guidelines for Infrastructure - EHS Guidelines for Water and Sanitation.

According to the repealed Environmental Impact Assessment (EIA) Regulation (Official Gazette dated November 25, 2014, and numbered 29186), water and stormwater systems are out of the scope of the EIA Regulation. Therefore, an EIA study was not required for this project and "EIA Exemption" certificate was issued by Provincial Directorate of Environment, Urbanization and Climate Change (*see Annex-2*). This "EIA Exemption" certificate should still be valid as water and stormwater systems are still out of the scope of the latest EIA Regulation (Official Gazette dated 29.07.2022 and numbered 31907).

On the other hand, the Project has been categorized as Category B Project according to the definitions in WB OP/BP 4.01 on Environmental Assessment. In addition, the Project is classified as Moderate Risk according to WB's Environmental and Social (E&S) Policy. Reasoning of the risk characterization of the Project is given below:

- The planned Project is exempt from the EIA process according to latest Turkish EIA Regulation;
- Expropriation of private parcels is not foreseen within the Project;
- There is no national protected area in or around the Project Area;
- Regarding internationally recognized areas, the 200 m of the transmission line is within the Geyik Mountains Key Biodiversity Area (KBA) / Important Bird Area (IBA). However, the transmission line will pass through the existing roads. The area affected by the construction of the line in the KBA consists of ruderal vegetation. It was determined by literature and field studies that no protected species are identified in this region; and
- With the realization of the Project, access to water services will be improved for the people living in the project area. Therefore, the Project will have a positive impact on the public.

Within the scope of the Project, the construction of drinking water transmission line will be carried out in rural and urban areas. Transmission lines will mainly follow cadastral roads, and reservoirs will be constructed on public lands belonging to KOSKI, Konya Metropolitan Municipality, Ahirli Municipality and National Property Directorate. In the scope of the Project, there are 17 creek and one irrigation channel crossings in the transmission line route. Creek crossings will be carried out by underpass pipe crossing while irrigation channel crossing will be carried out with a suspended pipe. An official application has been made for the irrigation channel crossing and creek crossings by KOSKI, and technical files are expected to come from the Konya Cadastre Directorate. Permission procedures will be completed after the technical files arrive. In addition to this, the proposed transmission line will pass under the D330 highway in the Alicerci town of Ahirli District. An application was made by KOSKI to the 3rd Regional Directorate of Highways of the Republic of Türkiye for highway crossing permit process.

Based on the conducted site visit, no land use by formal and informal land users and squatters for any purpose was detected for the areas, on which the Project components will be located. All the lands are free of competing claims and other encumbrances as well.

Overall, the Project does not trigger OP 4.12 – Involuntary Resettlement; no land acquisition, resettlement nor economic displacement will be caused by the Project. The relevant parcels are not used by the residents of the neighborhood for livestock purposes. The impact on local businesses in the settlement area during the construction of drinking water transmission line and the pumping station will only be temporary and short term. These impacts can be noise, dust and/or traffic impacts from construction activities. Road closures will be avoided as much as possible and therefore shops/stores are not expected to be closed due to the construction activities.

The transmission line will mainly follow the existing cadastral roads. It has been determined by literature and field studies that there are no protected species are identified in this region.

Although the exact total number of workers to be employed during the construction and operation phases is currently unknown, it is estimated as 100 and 10 for the construction and operation phases, respectively. In

the employment process, priority will be given to the local community. The construction of the Project is planned to be completed in twelve (12) months.

ESMP Content and Key Mitigation Measures

The ESMP has described legal framework and WB Operational Policies applicable to the project, as well as E&S baseline conditions. In addition, it has identified mitigation measures and monitoring activities to reduce and avoid environmental and social impacts/risks associated with the project. This ESMP defines:

- Description of the environmental and social baseline conditions;
- Description of the potential environmental and social impacts/risks;
- Detailed mitigation measures and roles and responsibilities for mitigation implementation;
- Monitoring activities and roles and responsibilities for implementation of the monitoring activities;
- Institutional structure for oversight and management of the Project;
- Capacity building requirements; and
- Consultations with affected groups and non-governmental organizations.

A summary of mitigation measures addressed in this ESMP is provided in *Table 1*.

Table 1.Summary of Mitigation Measures

Areas of Potential Environmental and Social (E&S) Impacts	Mitigation Measures
Air Quality	Dust and exhaust emissions management Air quality monitoring
Soil and Contaminated Land	Topsoil preservation and restoration Prevention of soil contamination Erosion control measures
Water Resources	Proper storage of chemicals Prevention of surface runoff
Noise and Vibration	Regular maintenance of the construction machinery, equipment and vehicles Establishment of a robust grievance redress mechanism
Biological Environment	Re-vegetation, where possible Measures to further avoid and minimize the construction footprint
Landscape and Visual	Planting trees around the pumping station Painting the visible buildings to colors that suit to the background
Resources and Waste	Waste management in accordance with the waste management hierarchy and monitoring Selection of most appropriate raw materials by evaluating clean production options Designation of temporary storage areas
Climate Change	Optimal utilization of the available construction equipment and materials Regular maintenance of construction vehicles and equipment
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 redress mechanism Preparation of information materials Managing and monitoring the performance of contractors in relation to the prohibition of child labor, unregistered employment and forced labor Proper adaptation of human rights policy and labor rights
Community Health, Safety and Security	Preparation of Traffic Management Plan Usage of appropriate traffic signage

Areas of Potential Environmental and Social (E&S) Impacts	Mitigation Measures
Occupational Health and Safety	Awareness raising training for workers Code of Conduct
Archaeological and Cultural Heritage	Informing related Conservation Board or Museum Directorate as per Chance Find Procedure

KOSKİ is responsible for the implementation of the ESMP.

.

1. INTRODUCTION

ILBANK A.Ş. (ILBANK) is implementing the Sustainable Cities Project (SCP) as a Series of Projects and SCP I and II are already in implementation; with technical and financial support from the World Bank (WB) and European Union (EU). The SCP aims to improve the infrastructure service needs of participating municipalities and utilities.

SCP II - Additional Financing (AF) aims to establish an additional support mechanism for meeting the increasing demand from municipalities for investments in sustainable urban development: respond to current and increasing demands for urban services; plan for future infrastructure service needs in a sustainable manner; mobilize financing to fund priority investment; and adhere to new spatial planning mandates and infrastructure service requirements as prescribed by the amended Metropolitan Municipality Law No 6360 in December 2012. SCP I, SCP II and SCP II-AF are the next generation operation which will provide a more dedicated focus to urban planning systems and broadening the program to broader sectors, such as urban transport; zero waste; energy efficiency, renewable energy, municipal social services, disaster recovery, urban renovation, and restoration sectors.

The proposed sub-project investments of municipalities defined under the SCP-II AF are subject to environmental and social impact and risk assessment studies undertaken by consultant firms. Depending on the type of project and the nature and magnitude of the impacts, an Environmental and Social Management Plan (ESMP) will be prepared for the projects to be financed as defined in the Environmental and Social Management Framework (ESMF) of SCP-II AF prepared by ILBANK A.Ş. on April 2019[1].

The Project is planned to be implemented in Ahırlı, Seydişehir and Yalıhüyük Districts. Within the scope of the Project, it is aimed to provide water supply, storage, transmission and distribution through transmission lines, tanks and pumping stations to meet the drinking water needs of the neighborhoods of Ahırlı, Seydişehir and Yalıhüyük Districts. However, in the course of time, wells have been drilled to meet the urgent water needs of Seydişehir district and the drinking water of Seydişehir neighborhoods is supplied from these wells. For this reason, KOSKI requests Seydişehir neighborhoods to be excluded from the scope of the Project. With the changes in the scope, the Project will serve the neighborhoods of Ahırlı and Yalıhüyük districts (hereinafter referred to as Suğla Group). With this Project, it will be possible to improve water quality, reduce public health risks and support sustainable economic growth. In addition, in neighborhoods where the current drinking water system is inadequate, the drinking water system will be increased to levels that comply with national and EU standards. The Project aims to provide reliable and sustainable drinking water to Sugla Group by constructing a 55.5 km drinking water transmission line. Sugla Group's water needs will be met from wells opened in Aşağıkaraören Neighborhood of Seydişehir District. Water will be supplied to the Project neighborhoods with 3 pump stations and a new collection reservoir to be constructed.

1.1. Objectives

The Project will be financed under SCP-II-AF. According to ILBANK's technical specifications, technical and financial feasibility studies of the Project under SCP-II-AF have been initiated. In addition to these studies, this ESMP has been prepared in accordance with Turkish environmental and social legislation, WB Protection Policies including Operational Policies (OPs), WBG General EHS Guidelines and Industry Sector Guidelines and ILBANK's ESMF.

[1] İLBANK A.Ş. (2019). Türkiye Sustainable Cities Project – II Additional Financing (P170612). Environmental And Social Management Framework. Retrieved from https://documents1.worldbank.org/curated/ru/921361554098772741/pdf/Environmental-and-Social-Management-Framework.pdf

A screening process based on Turkish Regulation on Environmental Impact Assessment (EIA) (dated 29.07.2022 and numbered 31907), EU EIA Directive (85/337/EEC) and the Environmental and Social Safeguard Policies of the WB have been conducted for the Project. Within the scope of the WB OP concerning Environmental Assessment (OP 4.01), projects are classified under the categories of A, B, C by the degree of their impacts on the environment. The defined classification is based on the type, location, sensitivity, scale of the project, the structure, and aspects of its potential impacts. On the other hand, national EIA Regulation and EU EIA Directive have a similar approach to determine the project categorization by examining the effects of projects based on thresholds/criteria and using the projects listed in their Annex-I and Annex-II. In the national EIA Regulation, the projects are classified as "EIA Required" and "EIA Not Required" or "EIA Exempt", while it is categorized as "Mandatory EIA" and "EIA at Discretion of Member States" in EU EIA Directive.

When the Project components are evaluated as per the national EIA Regulation, it is concluded that the Project is included in the Annex II of the regulation as per the following article:

> "*44-Projects related to riverbeds; b) Projects in which 5 km or more arrangements are made in the beds of streams showing continuous flow*,"

Therefore, a Project Introduction File will be prepared in accordance with the format given in Annex IV of the regulation by authorized environmental consultancy company for the project and will be submitted to Ministry of Environment, Urbanization and Climate Change (MoEUCC). After the evaluation of the MoEUCC, it is decided whether an "EIA is required" or "EIA is not required" for the project and the procedure will continue regarding the decision of the MoEUCC. Therefore, "EIA Exemption" decision was given for this Project and provided in *Annex-A*.

According to WB OP 4.01, the Project defined as **Category B Project** where the potential impacts are mostly reversible, site-specific and have a range of potential mitigation measures.

In order to support the implementation of this Category B project, the ESMP has been prepared to ensure that all positive and adverse impacts during construction and operation phases are considered and the appropriate mitigation measures are proposed as required by the relevant national laws and regulations and the WB Safeguard Policies.

The purpose of this ESMP is to provide a general framework for the Environmental and Social Management System (ESMS) planned to be implemented within the scope of the Project and to provide the necessary management tools to ensure compliance with the project standards in achieving the environmental and social objectives. The main objectives of this ESMP are as follows:

- To outline the environmental and social goals of the Project,
- To present an overview of the ESMS that will be implemented to ensure systematic and effective execution of the environmental and social commitments relevant to the construction and operation phases of the Project,
- To identify possible environmental and social impacts/risks and relevant mitigation measures which are linked to the monitoring program,
- To ensure stakeholders are informed about the sub-project's environmental and social risks and impacts on an ongoing basis and are aware of the Grievance Redress Mechanism (GRM),
- To determine the roles and responsibilities of KOSKİ and its Contractors/Sub-contractors,
- To establish programs to meet the objectives and targets, oriented to continuous improvement,
- To ensure the awareness and competence of personnel of KOSKİ and contractors regarding policies, objectives, and targets,
- To provide mitigation plan and monitoring program which consists of periodic internal and external audits and inspection,
- To review the progress in achieving the environmental and social objectives and targets and make improvements.

1.2. Scope

This ESMP provides instructions, responsibilities, and guidelines to the responsible parties with a set of mitigations, monitoring, and institutional measures to be taken during the implementation and operation of the Project to avoid adverse environmental and social impacts/risks or reduce to acceptable levels. For all monitoring requirements, the technical parameters are defined along with the appropriate responsibilities and reporting procedures. Moreover, a grievance redress mechanism for receiving and addressing all grievances, complaints, and comments related to the Project is set out in this ESMP.

The ESMP has been structured as follows:

- ***Introduction:*** The basis, scope, objectives, and implementation of the ESMP and project background and rationale.
- ***Legal Framework:*** The description of the national and international legislation and standards to be followed by and applicable to the Project.
- ***Description of Proposed Project:*** The summary information on the scope of the project, the location, and the characteristics of the Project.
- ***Environmental and Social Baseline Conditions:*** The summary information regarding the current environmental and social aspects and conditions of the project area with information of existing infrastructure.
- ***Environmental and Social Impacts:*** The summary of identification and assessment of possible environmental and social impacts/risks of the project during the pre-construction, construction, and operation phases.
- ***Mitigation Plan:*** The description of the steps to be taken to mitigate the major adverse potential impacts on land, water, air, and other aspects as well as possible socio-economic impacts during the pre-construction, construction, and operation phases.
- ***Monitoring Plan:*** The description of the key parameters to be monitored to ensure that all phases of the Project are in conformance with Turkish legislation and relevant international norms and standards including WB Environmental and Social Safeguard Policies.
- ***Institutional Arrangements:*** The determination of roles and responsibilities for the implementation of the ESMP in terms of analyzing the data obtained and reporting, capacity building for the efficienct implementation of the ESMP, training requirements in terms of environmental, social and health and safety aspects, risk and measures, description of how to collect monitoring data and how to use for sound environmental and social performance, and responsibilities of authorities.
- ***Grievance Redress Mechanism:*** The summary of grievance redress mechanism for the project activities.
- ***Consultations with Affected Groups and Non-Governmental Organizations:*** The summary of the stakeholder engagements, consultation meetings, findings, and outcomes

2. 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 agreements and conventions explained in the following sections are also to be complied with during different stages of the Project, including land preparation, construction and operation.

2.1. Institutional and Legal Framework in Türkiye Framework

In Türkiye, institutional framework consists of central and local administrations. Türkiye is structured by provinces according to economical and geographical conditions. Each province is managed by local administrations consisting of municipalities, villages/neighborhoods. Representatives of the administrative structure of municipalities and villages/neighborhoods are mayors and mukhtar, respectively. Ministries, which are central administrative units, provide services to local areas through their local branches including provincial organizations affiliated to governor and district organizations affiliated to district governors.

Environmental impacts, permits, management and inspection of the project is under the scope of authority of Ministry of Environment, Urbanization and Climate Change (MoEUCC), Ministry of Agriculture and Forestry, Ministry of Culture and Tourism, Ministry of Labor and Social Security and Ministry of Health. MoEUCC is the key authority regulating policies and procedures related to conservation and protection of natural environment, management of natural resources and settlements by its general directorates. Those principally related to the Project are given as follows:

- General Directorate of Environmental Impact Assessment, Permit, and Inspection,
- General Directorate of Environmental Management,
- General Directorate of Protection of Natural Assets,
- General Directorate of Infrastructure and Urban Transformation Services,
- General Directorate of Spatial Planning,
- General Directorate of Land Registry and Cadastral.

Administrations at provincial, regional and district levels are field organizations of ministries and related institutions. The project is within the scope of Konya Governorate, Ahırlı and Yalıhüyük Districts, Konya Provincial Directorate of Environment, Urbanization and Climate Change, Konya Provincial Directorate of Agriculture and Forestry, Konya Provincial Directorate of Culture and Tourism, Konya Cultural Heritage Preservation Regional Board Directorate, 4th Regional Directorate of State Hydraulic Works (SHW), Konya Forestry Regional Directorate. For the Project, Konya Municipality, Ahırlı and Yalıhüyük Municipalities, and related village administrations, i.e., mukhtars' offices are considered associated as local administrations.

2.2. National and International Regulatory Framework

2.2.1. National Legislation on Environmental, Social, Labor and Health and Safety

The National legislation applicable to the management of environmental, social, health and safety aspects of the proposed Project has been identified under this section.

The Environmental Law No: 2872 published in the Official Gazette No. 18132 and dated 11.08.1983, and later revised by the Law No. 6486 published in the Official Gazette No. 28661 and dated 29.05.2013, constitutes the basic legal framework of the environmental legislation in Türkiye and is largely in line with the EU Directive on EIA. This law is supported by numerous regulations. Article 10 of Environmental Law forms the main framework of the Environmental Impact Assessment (EIA) Regulation published in the Official Gazette No. 31907 dated 29.07.2022.

As per the EIA Regulation, EIA applications are carried out for identifying the positive and negative impacts of the projects planned to be implemented, for assessing the precautions to be taken to prevent negative impacts or minimize them in a way that will not harm the environment by determining the location and the alternative technologies and for monitoring and checking the implementation of the projects. The EIA process defines the process that includes the application, and the preconstruction, construction, operation, and post-operation works for performing the environmental impact assessment of the planned project. EIA is the process that starts with the presentation of the reports in which all the specified aspects of the projects are expressed and ends with the decision of the MoEUCC. Public engagement is a requirement of the EIA process in Türkiye, to

enable stakeholders who may have an interest in, or who are affected by the Project, to participate in the process and comment on the Project. Public engagement is only mandatory for the Projects listed in Annex-I of national EIA Regulation.

Unless the decision that "EIA is Positive" or "EIA is not Required" is made for projects subject to the EIA Regulation, incentive, approval, permit, building license and use permit for such projects cannot be granted, no investment can be started or tendered for the project. However, this does not preclude applying for the processes of such incentives, approvals, permits, and licenses. As part of the European Union membership process, Türkiye has carried out a variety of organizational and legislative reforms. With these reforms, environmental legislation and environmental protection instruments have been harmonized with international standards.

Even though the displacement and renewal of collector lines and construction of a drinking water treatment plant are not included in the national EIA Regulation annexes, the project is covered by the Annex-II List of EIA Regulation; since the lengths of water transmission lines and structures from the Madra Dam and Karakoç Dam within the scope of the Project components will be more than 5 km.

A Project Introduction File will be prepared in accordance with the format given in Annex IV of the regulation and submitted to MoEUCC. The process will continue in accordance with the decision of the MoEUCC in terms of whether there needs to prepare an EIA Report or not. In the current situation, no national EIA procedure has been started yet.

In addition to Environmental Law No: 2872, several associated laws are complementary regarding the protection and sustainability of the environment as well as the protection of health and safety rights of people. Those laws, which would be applicable to the proposed Project, are listed below:

- Environmental Law No. 2872 (Official Gazette (OG) No: 18132, dated 11.08.1983)
- Expropriation Law No. 2942 (OG No: 18215, dated 08.11.1983)
- Forestry Law No. 6831 (OG No: 9402, dated 08.09.1956)
- Groundwater Law No. 167 (OG No: 10688, dated 23.12.1960)
- National Parks Law No. 2873 (OG No: 18132, dated 11.08.1983)
- Conservation of Cultural and Natural Assets Law No. 2863 (OG No: 18113, dated 23.07.1983)
- Highways Traffic Law No. 2918 (OG No: 18195, dated 13.10.1983)
- Soil Conservation and Land Use Law No. 5403 (OG No: 25880, dated 19.07.2005)
- Terrestrial Hunting Law No. 4915 (OG No: 25165, dated 11.07.2003)
- Animal Protection Law No. 5199 (OG No: 25509, dated 01.07.2004)
- Labor Law No. 4857 (OG No: 25134, dated 10.06.2003)
- Occupational Health and Safety Law No. 6331 (OG No: 28339, dated 30.06.2012)
- Right to Obtain Information Law No: 4982 (OG No.25269 dated 24.10.2003)

The regulations developed under the Environmental Law aim to specify and identify the procedures and principles of the management of environmental aspects. Under the relevant laws, several regulations or communiques are given in Table 2-1[2] by their relevance and implementation for the project and their official gazette number/date in which regulation was published.

Table 2-1.Regulations and/or Communiques regarding Environmental, Social, Labor, Health and Safety Aspects

Regulations / Communiques	OG Number	OG Date	Relevance/Implication for the Project
Environmental Permit and Licenses			

[2] Mevzuat Bilgi Sistemi. (n.d.). Legislation Information System. http://www.mevzuat.gov.tr/Anasayfa/ErrorPage?code=405

Regulations / Communiques	OG Number	OG Date	Relevance/Implication for the Project
Regulation on Environmental Impact Assessment	31907	29.07.2022	Scoping the Project and evaluating impacts during pre-construction, construction, and operation phases of the project.
Regulation on Environmental Permits and Licensing	29115	10. 09.2014	Determination of required environmental permits and licenses at all phases of the Project.
Regulation on Environmental Auditing	31509	12. 06.2021	Environmental audits to be performed by either Project Owner or governmental authorities during construction and operation phases.
Regulation on the Implementation of the Law Concerning Private Security Services	25606	07. 10.2004	During the construction phase for campsite security (in case of any) and during the operation phase for safety purposes for reservoirs (in case of any planning).
Air Quality Control and Greenhouse Gas (GHG) Emissions			
Air Quality Assessment and Management Regulation	26898	06. 06.2008	Emissions during operation phase.
Industrial Air Pollution Control Regulation	27277	03. 07.2009	During the construction phase, dust emissions.
Regulation on the Control of Odor Causing Emissions	28712	19. 07.2013	Possible odorous emissions generated during operation phase.
Exhaust Gas Emission Control Regulation	30004	11. 03.2017	Operation of Project vehicles, machinery, and equipment at all phases of the Project.
Regulation on the Control of Air Pollution from Heating	25699	13. 01.2005	Heating of the operational buildings during operation phase.
Biodiversity Conservation and Protection of Nature			
Regulation on the Protection of Wetlands	28962	04. 04.2014	Measures to be taken for wetland protection near to the Project area during the planning phase of the Project.
Law on Natural Parks No. 2873	18132	11. 08.1983	Measures to be taken for natural parks protection near to the Project area during the planning phase of the Project.
Regulation on Aquaculture	22223	10. 03.1995	Determination measures to be taken for the construction and operation phases.
Regulation on Protection of Wildlife and Wildlife Development Area	25637	08. 11.2004	Measures to be taken for wildlife protection near to the Project area during the planning phase of the Project.

Regulations / Communiques	OG Number	OG Date	Relevance/Implication for the Project
Chemicals and Other Dangerous Substances			
Regulation on Classification, Labelling, and Package of the Materials and Mixtures	28848	11. 12.2013	Taking measures for chemicals and mixtures to be used during construction and operation phases.
Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals	30105	23. 06.2017	Determination of chemicals to be used during the operation phase.
Regulation on Persistent Organic Pollutants	30595	14. 11.2018	Determination of chemicals to be used during the operation phase.
Regulation on the Control of Polychlorinated Biphenyls (PCBs) and Polychlorinated Terphenyls (PCTs)	26739	27. 12.2007	Usage of transformers, capacitors. electrical equipment including voltage regulators, switches, oil used in motors, old electrical devices or appliances containing PCB capacitors, fluorescent light ballasts during the operation phase.
Noise			
Regulation on Environmental Noise Control	32029	30. 11.2022	Determination of noise emissions and measures to be taken at construction and operation phases.
Regulation on the Environmental Noise Emissions Caused by Equipment Used Outdoors	26392	30. 12.2006	Regulating the noise levels caused by noise sources within the Project site at the construction and operation phases.
Soil and Land Use			
Regulation on the Control of Soil Pollution and Lands Contaminated by Point Sources	27605	08. 06.2010	Determination of risks of soil contamination at construction and operation phases.
Regulation on Control of Excavated Soil, Construction and Demolition Wastes	25406	18. 03.2004	Management of excavated soil and construction and demolition wastes at the source.
Regulation on Protection, Use, and Planning of Agricultural Lands	30265	09. 12.2017	Management of change in the land use during the planning phase of the Project.
Waste			
Regulation on Waste Management	29314	02. 04.2015	Management of waste from generation to disposal without harming the environment and human health during construction and operation phases.
Zero Waste Regulation	30829	12. 07.2019	General principles regarding the establishment, development, monitoring,

Regulations / Communiques	OG Number	OG Date	Relevance/Implication for the Project
			financing, recording and certification of the zero waste management system in line with sustainable development goals during construction and operation phases.
Regulation on Packaging Waste Control	30283	27. 12.2017	Preventing the formation of packaging waste, reducing the amount of unavoidable packaging waste to be disposed of using reuse, recycling and recovery methods in construction and operation phases.
Regulation on Waste Oil Management	30985	21. 12.2019	Waste oils included in the definition of waste oil and the management, recovery, disposal of these wastes, precautions to be taken and notifications to be made
Regulation on Medical Waste Control	29959	25. 01.2017	Collection of medical waste in the places where it is produced, temporary storage, transportation to the medical waste processing facilities and disposal
Circular on COVID-19 Measures in the Management of Personal Hygiene Material Wastes such as Disposable Masks, Gloves (2020/12)	- (Published in MoEUCC website)	07. 04.2020	Measures and management of wastes disposable masks, gloves and similar personal hygiene material wastes during the construction and operation phases.
Regulation on Control of Waste Electrical and Electronic Equipment	28300	22. 05.2012	Management of electrical and electronic equipment wastes during construction and operation phases.
Regulation on Control of Waste Batteries and Accumulators	25569	31. 08.2004	Establishment of a collection system and management for the recovery or final disposal of waste batteries and accumulators.
Regulation on Control of End-of-life Tires	26357	25. 11.2006	Establishing a collection and management system for ensuring the necessary regulations and standards in the management of end-of-life tires during the construction and operation phases.
Water and Wastewater			
Regulation on Management of Surface Water Quality	28483	30. 11.2012	Regulating discharge of treated effluent and monitoring of water quality at receiving body during operation phase.
Regulation on the Monitoring of Surface Waters and Groundwater	28910	11. 02.2014	Monitoring of water quality at receiving body during operation phase.
Regulation on Water Pollution Control	25687	31. 12.2004	Discharge of treated effluent during operation phase of the Project.
Regulation on the Protection of Groundwater against Pollution and Deterioration	28257	07. 04.2012	Protection of groundwater sources against pollution during construction and operation phases.

Regulations / Communiques	OG Number	OG Date	Relevance/Implication for the Project
Regulation on the Control of Pollution Caused by Hazardous Substances in and around Water Environment	26005	26. 11.2005	Management of hazardous substances during construction and operation phases.
Regulation on Water Intended for Human Consumption	25730	17. 02.2005	Management of drinking water supplied during construction and operation phases.
Regulation on Quality and Treatment of Water Supplied for Drinking Water	30823	06. 07.2019	Determination and monitoring of quality of water to be supplied during the operation phase.
Regulation on Wastewater Collection and Remote Systems	29940	06. 01.2017	Procedures and principles regarding the planning, design and project design, construction and operation of wastewater collection and removal systems.
Regulation on Control of Water Loss in Drinking Water Supply and Distribution Systems	28994	08. 05.2014	Procedures and principles regarding the duties and responsibilities of water administrations for reducing water losses in water supply, storage, transmission, distribution and consumption.
Regulation on the Procedures and Principles to Be Followed in the Determination of Wastewater Infrastructure and Domestic Solid Waste Disposal Plant	27742	27. 10.2010	Establishment, maintenance, repair, operation, closure and monitoring of wastewater infrastructure facilities, determination of full cost-based tariffs that can cover all services, adjustment and implementation of wastewater infrastructure management by metropolitan municipalities and municipalities
Regulation on Urban Wastewater Treatment	26047	08. 01.2006	Procedures and principles regarding the sewerage systems, urban wastewater treatment requirements, sensitive water areas, exceptions, monitoring and reporting, and evaluation.
Regulation on Protection of Drinking and Potable Water Basins	30224	28. 10.2017	Procedures and principles regarding the protection and improvement of the quality and quantity of all surface and groundwater resources from which drinking-use water is supplied or planned to be provided.
Structural Safety			
Regulation on Structures to be Built in Natural Disaster Areas	26582	14. 07.2007	Management of construction works within the scope of the Project.
Regulation on Building Constructions in Earthquake Zones	26454	06. 03.2007	Management of construction works within the scope of the Project.
Regulation on Earthquake for Pipeline Systems and Liquid Storage Tank in Türkiye	31416	07. 03.2021	Principles for the evaluation and design of pipelines carrying natural gas, liquid hydrocarbon, water, wastewater, water treatment and pumping station facilities, and new and existing liquid storage tanks under the influence of earthquakes.

Regulations / Communiques	OG Number	OG Date	Relevance/Implication for the Project
Regulation on Building Earthquake of Türkiye	30364	18.03.2018	Measures to be taken for the design and construction works under the impact of earthquakes and the evaluation of the performance of existing buildings under the impact of earthquakes.
Regulation on the Protection of Buildings from Fire	26735	19.12.2007	Measures to be taken for fire protection during construction and operation phases.
Traffic			
Regulation on the Road Transportation of Hazardous Goods	28801	24.10.2013	Hazardous goods to be transported during construction and operation phase.
Regulation on Highway Traffic	23053	18.07.1997	Regulating speed limits of vehicles and machinery used during construction and operation phases.
Regulation on Traffic Signs	18789	19.06.1985	Regulating the traffic signs to be used during the construction and operation phases
Health and Safety and Labor			
Regulation on Emergency Situations in Workplaces	28681	18.06.2013	Preparation of emergency plans, prevention, protection, evacuation, firefighting, first aid and similar studies in workplaces.
Regulation on Health and Safety at Construction Works	28786	05.10.2013	Measures to be taken during construction phase.
Regulation on Health and Safety Conditions Regarding Use of Work Equipment	28628	25.04.2013	Measures to be taken during construction phase related to use of equipment.
Regulation on Health and Safety Precautions Regarding Working with Chemicals	28733	12.08.2013	Measures to be taken during construction and operation phase related to use of chemicals.
Regulation on Health and Safety Regarding Temporary and Time-Limited Works	28744	23.08.2013	Protection of employees with a temporary or fixed-term employment contract at the same level as other employees in the workplace in terms of health and safety.
Regulation on Health and Safety Signs	28762	11.09.2013	Measures to be taken during construction and operation phases.
Regulation on Management of Dust	28981 2	05.11.2013	Measures to be taken to combat dust in terms of occupational health and safety to prevent the risks that may arise from dust in the workplaces and to ensure that the workers are protected from the effects of dust.
Regulation on the Protection of Employees from Risks About Noise	28721	28.07.2013	Minimum requirements to protect workers from the health and safety risks that may arise from exposure to noise, especially hearing-related risks during the construction phase.

Regulations / Communiques	OG Number	OG Date	Relevance/Implication for the Project
Regulation on Material Safety Data Sheets on Hazardous Materials and Mixtures	29204	13. 12.2014	Preparation of safety data sheets to ensure effective control and surveillance against the negative effects of harmful substances and mixtures on human health and the environment during construction and operation phases.
Regulation on Occupational Health and Safety Services	28512	29. 12.2012	Establishment of OHS units to carry out occupational health and safety services, cancellation of authorization certificates, duties, authorities and responsibilities and working procedures and principles
Regulation on Occupational Health and Safety	25311	09. 12.2003	Measures to be taken during construction and operation phases to ensure health and safety of employees.
Regulation on Personal Protective Equipment	30761	01. 05.2019	Measures to be taken during construction and operation phases to ensure health and safety of employees.
Regulation on Protection of Workers from Risks Created by Noise	28721	28. 07.2013	Measures to be taken during construction and operation phases to ensure health and safety of employees.
Regulation on Risk Assessment for Occupational Health and Safety	28512	29. 12.2012	Determination of occupational health and safety risks occurring during construction and operation phases.
Regulation on Sub-contractors	27010	27. 09.2008	Management of contactors/sub-contractors during construction and operation phases.
Regulation on Use of Personal Protective Equipment in Workplaces	28695	02. 07.2013	Measures to be taken during construction and operation phases to ensure health and safety of employees.
Regulation on Vocational Training of the Employees Working in Dangerous and Highly Dangerous Workplaces	28706	13. 07.2013	Measures to be taken during construction and operation phases to ensure health and safety of employees.
Regulation on the Procedures and Principles of Employee Health and Safety Training	28648	15. 05.2013	Measures to be taken during construction and operation phases to ensure health and safety of employees.
Regulation on Health and Safety Precautions in Working with Asbestos	28539	25. 01.2013	Prevention of exposure of employees to asbestos dust in asbestos removal, demolition, repair, maintenance, and removal works and protection from health risks arising from this exposure, determination of special precautions
Communiqué on Training Programs on Asbestos Removal	28692	29. 06.2013	Qualifications, training, training programs of asbestos removal specialists

Regulations / Communiques	OG Number	OG Date	Relevance/Implication for the Project
Cultural Heritage			
Law on Protection of Cultural and Natural Assets	18113	23. 07.1983	During chance finds at the construction phase, determination of measures to be taken.
Access to Information			
Law on Right to Obtain Information No. 4982	25269	24. 10.2003	The purpose of this law is; To regulate the principles and procedures for people to exercise their right to information in accordance with the principles of equality, impartiality and openness, which are requirements of democratic and transparent management.
Land Acquisition			
Regulation on Qualifications and Working Principles of Persons to Serve as Experts in Expropriation Cases	26356	24. 11.2006	Qualifications and working principles of the persons for the land expropriation processes

2.2.2. International Standards and World Bank Safeguard Policies

WB's environmental and social assessment procedures and Turkish legislation, and key gaps and ways to close these gaps are presented in the ESMF of SCP-II AF[1]. Under the ESMF, the processes of WB OP 4.01 and Turkish EIA Regulation are separately discussed in terms of screening, environmental assessment, public consultation, scoping, review of environmental and social impact assessment, disclosure, monitoring and inspection.

The Turkish EIA procedures are, with some exceptions, in line with the WB's EA policies. The primary exceptions are in project categorization, content of EA and public consultation. Some projects covered by Turkish Annex-II fall within the WB Category A. For example, where a significant new wastewater treatment plant (WWTP) is proposed for financing which, as a Category A project for the WB requires an Environmental and Social Impact Assessment (ESIA), but under the Turkish EIA Regulation is identified as Annex-II requiring a Project Introduction File (PIF), which after review and decision by MoEUCC may or may not require an EIA. Some projects that are not listed in either Annex-I or Annex-II of the Turkish EIA Regulation, such as a new WWTP servicing a population of less than 150,000 may under the WB policy be classified as Category B or even Category A project.
Environmental Assessment (EA) content of WB for a Category A project and the general format of a Turkish EIA indicate several differences. These include notably the absence of an executive summary and information on the policy, legal and administrative framework, as well as possible discrepancies regarding the level at which the project's environmental and social impacts/risks, its alternatives, and mitigation measures for the impacts are discussed. A key gap is the absence of an ESMP with clear specification of actions and delineation of responsibilities. Nevertheless, the project specific format for EIA may require more details under some of these headings than indicated in the general format for PIF. Consequently, a case-by-case review of the Turkish EIAs is necessary to identify gaps with WB requirements.

The content of the EA required by WB for a Category B project depends on the special circumstances. In all cases, an ESMP is required which is only partially covered in a Turkish EIA. The WB also requires partial EA or partial Environmental and Social Impact Assessment (ESIA) for Category High B projects, on the other hand, Turkish EIA does not cover in between categorization as Category High B, nor requires any other project documents in this regard.

There are some differences in terms of public consultation and disclosure. The “pre-scoping” consultation which is required by Turkish EIA Regulation for projects requiring an EIA is largely equivalent to the first consultation required by WB for Category A projects. For projects under this category, a "Public Information and Participation Meeting" is also required to get the opinions of the public and to point out the topics of concern in the project's EIA Format. However, WB requires a consultation on draft EA for both Category A and Category B projects; there is no equivalent provision for Category B projects in the Turkish EIA Regulation. For disclosure activities, the Turkish EIA Regulation only requires announcement of the evaluation result together with the justification. On the other hand, WB has different consultation requirements for Category A and Category B projects. In line with the WB policies Category A projects require two public consultations, one at the scoping stage (where typically the public will have the opportunity to comment on the ToRs for the ESIA) and the second at the draft EA stage. For the Category B projects, in line with OP 4.01, the draft EA are made available to local Non-Governmental Organizations (NGOs) and project affected groups. For Category B subprojects, the final ESMP report must be published on WB’s website. For Category A projects, WB requires that the final ESIA report be made available to the public locally in addition to being published on WB’s external website and submitted to the WB Board.

The WB has a Policies and Procedures Framework, which provides a structure by developing and managing policy, procedure, directives, and guidance type documents aiming to achieve more efficient documentation, communication, and project management.

The environmental and social policies of WB, known as the "Safeguard Policies," is the mechanism for addressing environmental and social issues in WB project design, implementation and operation, and they provide a framework for consultation with communities and for public disclosure. WB Safeguard Policies consists of 11 Operational Policies and Bank Procedures. On the other hand, the EHS Guidelines of WBG constitute technical reference resources that include general and sector-specific examples of international good industry practices. The guidance documents for the evaluation and management of the environmental and social impacts/risks of the Project are listed below:

- WB Operational Policies (OPs),
- WBG General EHS Guidelines,
- WBG EHS Guidelines, Industry Sector Guidelines for Infrastructure – Water and Sanitation,
- WBG EHS Guidelines, Industry Sector Guidelines for General Manufacturing – Construction Materials Extraction,
- Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets,
- Introduction to Health Impact Assessment of International Finance Corporation (IFC),
- Workers' Accommodation: Processes and Standards – A Guidance Note by IFC and the European Bank for Reconstruction and Development (EBRD),
- Good Practice Handbook on Cumulative Impact Assessment and Management of IFC,
- WBG Environmental and Social Management System Implementation Manual: Construction,
- WBG Environmental and Social Management System Implementation Manual: General Contractor's Environmental and Social Performance Management Good Practice Rating.

The activities planned under the proposed project will follow and will comply with the applicable national legislation and international standards. In case those differ, the most stringent requirement/standards will be met. Moreover, the most up-to-date legislation will be considered. The Environmental and Social Safeguard Policies of WB are designed to avoid, mitigate, or minimize adverse environmental and social impacts/risks of projects supported by the Bank. The Bank encourages its borrowing member countries to adopt and implement systems that meet these objectives while ensuring that development resources are used transparently and efficiently to achieve desired outcomes. The bank policies and operational principles are summarized under eight main aspects as given in *Table 2-2.*

Table 2-2.World Bank's Environmental and Social Safeguard Policies

Safeguard Policy	Requirement	Policy Triggered	Applicability / Compliance
Environmental Assessment (OP 4.01)	The Bank requires environmental assessment of projects proposed for financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision-making.	Yes	Activities performed within the scope of basic construction works create environmental and social impacts/risks. After the screening process, the project of KOSKİ has been defined as Category B Project where the potential impacts are mostly reversible, site-specific, and have a range of potential mitigation measures. Therefore, this ESMP has been prepared and the mitigation measures for negative impacts that may arise during the construction of the Project are involved.
Natural Habitats (OP 4.04)	The Bank requires borrowers to incorporate into their development and environmental strategies analysis of any major natural habitat issues, including identification important natural habitat sites, the ecological functions they perform, the degrees of threat to the sites, priorities for conservation, and associated recurrent-funding and capacity-building needs.	Yes	There is no nature conservation area on the Project route. The closest protected area to the Project area is Cevizli Gidengelmez Mountain Wildlife Development Area.
Pest Management (OP 4.09)	In appraising a project that will involve pest management, the Bank assesses the capacity of the country's regulatory framework and institutions to promote and support safe, effective, and environmentally sound pest management. As necessary, the Bank and the borrower incorporate in the project components to strengthen such capacity.	No	The proposed Project would not require the use of pesticide; therefore, no action will be taken to require pest management within the scope of the project.
Indigenous People (OP 4.10)	The Bank recognizes that the identities and cultures of Indigenous Peoples are inextricably linked to the lands on which they live and the natural resources on which they depend. Hence, A project proposed for Bank financing must be screened for the presence of indigenous people.	No	This policy is not triggered as there are no people in Türkiye meeting the criteria in OP4.10 for indigenous people.
Physical Cultural Resources (OP 4.11)	The proponent needs to address impacts on physical cultural resources in projects proposed for Bank financing, as an integral part of the environmental assessment (EA) process.	Yes	There are mosques, mounds and fountains as cultural heritage close to the Project route. In case of chance finds, Chance Find Procedure will be conducted by the site supervisors (*Annex-C).*

Safeguard Policy	Requirement	Policy Triggered	Applicability / Compliance
Involuntary Resettlement (OP 4.12)	The Bank recognizes that involuntary settlement may cause severe long-term hardship, impoverishment, and environmental damage unless appropriate measures are carefully planned and implemented.	Yes	No physical resettlement action is required in the scope of the Project. However, if the locations of some proposed structures overlap with private land, OP 4.12 will be triggered and a separate Resettlement Plan will be prepared in line with the Resettlement Policy Framework of SCP II AF.
Forests (OP 4.36)	If a project involves significant conversion or degradation of natural forests or related natural habitats that the Bank determines that are not critical, and the Bank determines that there are no feasible alternatives to the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs; the Bank may finance the project if it incorporates appropriate mitigation measures.	No	The proposed Project area does not involve any area with forestry status.
Safety of Dams (OP 4.37)	When the Bank finances a project that includes the construction of a new dam, it requires that the dam be designed, and its construction supervised by experienced and competent professionals.	No	No dam or dam like structure will be constructed.
Project on International Waterways (OP 7.50)	The Bank recognizes that the cooperation and goodwill of riparian is essential for the efficient use and protection of the waterway. Therefore, it attaches great importance to riparian making appropriate agreements or arrangements for these purposes for the entire waterway or any part thereof.	No	Not applicable since the Project site is not included any of the international water sources.

The international agreements, and conventions, that Türkiye ratified, are given within the proposed Project:

- Paris Agreement (2021),
- UN Framework Convention on Climate Change (UNFCCC) (2004),
- Rio Declaration on Environment and Development and Statement on Forest Principles (1992),
- Convention on Biological Diversity (Rio Convention) (1992),
- 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 Wildlife and Living Environment (1982),
- Vienna Convention for the Protection of the Ozone Layer (1988),
- Montreal Protocol on Substances Depleting the Ozone Layer (1990),
- Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (1994),
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (1996),
- UN Convention to Combat Desertification (1998),

- United Nations Europe Economic Commission Convention on Transboundary Effects of Industrial Accidents (2000),
- Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters (Aarhus Convention) (2001),
- Stockholm Convention on Persistent Organic Pollutant (2010),
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (1972),
- Mediterranean Sea Protocol Concerning Specially Protected Areas and Biodiversity (1988), including related protocols,
- International Labor Organization (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 Worst Forms of Child Labor (1999).

2.2.3. Comparison of the Requirements of WB OP 4.01 and EIA Regulation

The requirements of EIA Regulation and WB OP 4.01 are compared and the results are summarized as in Table 2-3

Table 2-3.Comparison of EIA Regulation and WB OP 4.01

Steps	EIA Regulation	WB OP 4.01
Screening	The EIA Regulation classifies the proposed projects into two categories: 1. Annex-I Projects: Projects with considerable potential impacts, which require an EIA process and EIA Report. 2. Annex-II Projects: Projects with or without considerable potential impacts on the environment.	Within the scope of WB OP 4.01, the proposed projects are classified into three categories: 1. Category A: A proposed project is classified as Category A, if it is likely to have significant adverse environmental and social impacts (depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts). In general, these impacts are major, irreversible, sensitive, variable, cumulative, precedent, and potentially influential over an area broader than the sites and facilities financed under the project. 2. Category B: A proposed project is classified as Category B if its environmental and social impacts are typically site-specific and structurally irreversible and if its impacts are less adverse than those of Category A subprojects and if mitigatory measures can be designed more readily than for Category A subprojects. The projects classified as Category B sometimes vary from the same type of Category A projects only in terms of their scale. 3. Category C: A proposed project is classified as Category C, if it is likely to have minimal or no adverse environmental impacts.

Steps	EIA Regulation	WB OP 4.01
		If a project financed by the WB includes a series of sub-projects that are selected by a Financial Intermediary (FI) and financed by the WB loan, the project is classified as Category FI.
Public Consultation Meetings	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, 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.	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 and social impacts of the subproject during the EA process.
Scope of Environmental Assessment	For the projects in the list of Annex-I, an EIA Application File (EAF) will be prepared in line with the format given in Annex-III to the EIA Regulation. Cumulative environmental impact assessment, stakeholder engagement plan (SEP), environmental and social action plan, environmental monitoring plan, sustainability plan, zero waste plan, traffic management plan, greenhouse gas reduction plan and environmental and social management plan shall be attached to the relevant sections of the EIA Application File. According to the information given in the EAF, a special EIA report format will be prepared based on the views of committee members to be formed by the Ministry, and the EIA report will be written in line with this format, and then submitted to the Ministry. For the projects in the list of Annex-II, a Project Introduction File (PIF) will be prepared based on the format given in Annex-IV to the EIA Regulation. The prepared report will be submitted to the Provincial Directorate of Environment, Urbanization and Climate Change.	For Category A subprojects, the borrower is responsible for preparing an ESIA report that examines the project's potential negative and positive environmental and social impacts, compares them with those of feasible alternatives, and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental and social performance. The scope of the environmental and social assessment document for a Category B subproject may vary from subproject to subproject, but it is narrower than that of Category A ESIA. As with the ESIA required for Category A, the borrower will investigate the potential negative and positive environmental and social impacts of the subproject, and will recommend measures required to prevent, minimize, mitigate or compensate for adverse impacts and enhance environmental and social performance. When the project category is identified as B; this information could be included in ESMP, if there are no site-specific problems that require a site-specific assessment process in addition to ESMP.
EA Review and Approval	The Committee will review the draft version of EIA report for the projects in the list of Annex-I. Then, the final EIA report containing the committee's assessments will be submitted to MoEUCC for final review. MoEUCC will determine whether EIA is positive; an "EIA Positive" decision is rendered, the project will not be continued further. The PIF prepared for the projects in the list of Annex-II will be reviewed by the Provincial Directorate of Environment, Urbanization and Climate Change and the "EIA Required" or "EIA Not Required" decision will be taken accordingly. For the projects for which the "EIA is Required" decision is rendered, the	For projects involving Financial Intermediaries (FI), the financial intermediary is responsible for meeting the requirements in OP 4.01. Normally, the EA process will be completed by the Financial Intermediary before the subproject is approved for funding of WB loan.

Steps	EIA Regulation	WB OP 4.01
	procedure governing the projects in the list of Annex-I will apply.	
Disclosure	The EIA Report for the projects in the list of Annex-I will be made available to the public opinion at the headquarters of MoEUCC or provincial directorates. Following MoEUCC's final assessment of the EIA report, the Governor's Office will disclose its reasoned decision publicly. For the projects in the list of Annex-II, the final PIF will be disclosed publicly at the Provincial Directorates.	In addition to the points given in the Public Participation section, the Financial Intermediary will make the draft ESIA report prepared in local language for Category A subprojects available at a public place accessible to project-affected groups and local Non-governmental organizations (NGOs). Upon finalization of a Category A subproject ESIA report, the Financial Intermediary will submit an English copy of the final report to the WB together with the English Executive Summary. The Bank will distribute the executive summary to its executive directors, and discloses it publicly on an external website. For Category B subprojects, the Financial Intermediary will submit an English copy of the final version of the Category B EA report to the WB and the WB will disclose it publicly on an external website.
Implementation, Monitoring and Inspection	Pursuant to the EIA Regulation, MoEUCC will monitor and inspect the projects that are regarded as "EIA Not Required" or "EIA Positive", respectively, according to the provisions provided in PIF or EIA Report. In addition, the project owner will submit monitoring reports to MoEUCC, and MoEUCC needs to submit these reports to the Governor's Office for announcement to the public.	During subproject implementation, the Financial Intermediary will report to the World Bank on (a) compliance with measures agreed with the Bank on the basis of the findings and results of the EA and additional social assessments, if any, including implementation of ESIA, and (b) the findings of monitoring programs. The Bank will base supervision of the project's environmental aspects on the findings and recommendations of the Environmental Assessment, including the measures outlined in legal agreements, ESMP, and other project documents.

Source: ILBANK "Sustainable Cities Project - II Additional Financing Environmental and Social Management Framework", April 2019

2.2.4. Project Standard

The Project will comply with both national legislation and international standards. In case those differ, the most stringent requirement will be met. Moreover, the up-to-date legislation will be followed.

3. DESCRIPTION OF THE PROPOSED PROJECT

As stated in *Section 1*, initially, the Project was planned to serve the districts of Ahırlı, Seydişehir and Yalıhüyük. The Project aimed to provide water supply, storage, transmission and distribution through transmission lines, tanks and pumping stations to meet the drinking water needs of the neighborhoods of Ahırlı District (Ahırlı, Akkise, Aliçerçi, Bademli, Balıklava, Büyüköz, Çiftlik, Erdoğan, Karacakuyu, Kayacık, Küçüköz neighborhoods), Seydişehir (Aşağıkaraören, Başkaraören, Ortakaraören neighborhoods) and Yalıhüyük Districts (Arasöğüt, Saray, Yalıhüyük neighborhoods). The length of the water transmission line to supply water to these neighborhoods was determined as 58,496 m. According to the initial design prepared in 2020, drinking water was to be pumped from a 4-group pumping station (TMY1) to 2 new collection tanks (DY1 and DY2), the existing water tank in Saray neighborhood and the new water tank to be built for Yalıhüyük neighborhood. With the pumps to be placed in the maneuvering rooms of the collection tanks, water would be pumped from

DY1 to Akkise and from DY2 to Bademli. In addition, with the collection tank (DY3) to be built near the Ahırlı neighborhood and the pumping station to be built in the maneuvering room of this tank, the needs of Ahırlı would be pumped to the existing tank. However, in time, wells were drilled to meet the urgent water needs of Seydişehir district and the drinking water of Seydişehir neighborhoods is supplied from these wells. For this reason, KOSKİ requests Seydişehir neighborhoods to be excluded from the scope of the Project. After the changes in the districts to be served by the Project, the planned Project has been updated as follows:

The Project covers Ahırlı District (Ahırlı, Akkise, Aliçerçi, Bademli, Balıklava, Büyüköz, Çiftlik, Erdoğan, Karacakuyu, Kayacık, Küçüköz neighborhoods) and Yalıhüyük District (Arasöğüt, Saray, Yalıhüyük neighborhoods) of Konya Province. These neighborhoods will be referred to as the Suğla Group in the following sections of the report. The water requirement of Suğla Group will be supplied from 2 drilling wells (Suğla Group drilling wells numbered 2 and 3) located approximately 1000 meters west of Aşağıkaraören Neighborhood in Seydişehir District and approximately 4 kilometers north east of Suğla Lake. Due to the removal of the neighborhoods of Seydişehir District from the scope of the Project, the line to Ortakaraören and Başkaraören neighborhoods was excluded from the Project and a new 10 km route (*seeFigure 3-2*) was added to the Project due to the change in the plan. With the changes made, the water supplied from 2 drilling wells will be delivered to Suğla Group with a total line of 55.5 km.

According to the latest updates to the Project, the structures that are currently in use and will continue to be used are as follows:

- Akkise Lower Floor Reservoir,
- Saray Reservoir,
- Yalıhüyük Reservoir,
- Balıklava Reservoir,
- Bademli Reservoir,
- Küçüköz Reservoir,
- Büyüköz Reservoir,
- Erdoğan Reservoir,
- Aliçerçi Reservoir,
- Ahırlı Upper Floor Reservoir,
- Çiftlik-Kayacık Reservoir,
- Karacakuyu Reservoir.

The structures planned to be constructed within the scope of the Project are as follows:

- TMY1: Pumping Station,
- DY1-TMY1: Collection tank,
- TMY2:Pumping Station,Akkise New Reservoir (Group Water Reservoir)
- DY2-TMY3:Collection tank,
- TMY3: Pumping Station
- 55.5 km long water transmission line.

A schematic plan showing the planned pumping stations and existing tanks is given in *Section 3.4.*

Accordingly, the water collected from the wells will be transmitted to DY1/TMY1, which is planned as a collection tank with a volume of 200 m^3, and will be transmitted from TMY1 to the intermediate pumping station TMY2. All manufacturing between the well and DY1/TMY1 will be manufactured by KOSKI. With TMY2, raw water will be transferred to the 2000m^3 Akkise Reservoir. Drinking water from the Group Water Reservoir will be distributed to Suğla Group Neighborhoods (except Bademli Reservoir) by gravity. Water will be conveyed to Bademli Reservoir via TMY3 intermediate tee to be constructed after BR4.

With the latest design changes, Yalıhüyük existing reservoir and Aliçerçi existing reservoir will not be used.

In the scope of the Project there are 17 creek and one irrigation channel crossings in the transmission line route. Creek crossings will be carried out by underpass pipe crossing while irrigation channel crossing will be carried out with a suspended pipe. An official application to 4th Regional Directorate of SWH has been made for the irrigation channel crossing and creek crossings by KOSKİ. In addition to this, the proposed transmission line will pass under the D330 highway in the Aliçerci Neighborhood of Ahırlı District. An application was made by KOSKİ to the 3rd Regional Directorate of Highways of the Republic of Türkiye for highway crossing permit process.

The Project will not pass through any privately owned lands. Thus no expropriation of private parcels is foreseen within the Project, and the Project will not cause any economic displacement. Therefore, the Project does not trigger OP 4.12 – Involuntary Resettlement, since there is neither land acquisition, nor resettlement nor economic displacement regarding the Project.

While it is not yet clear how many people will work in the Project, there is no designated area for camp site. The issue of workers' accommodation will be addressed in the Technical Terms and the responsibility will belong to the Contractor. On the other hand, in case of employee accommodation, KOSKİ will check that the conditions are provided in accordance with the Guidance Note by IFC and the EBRD.

No new roads will be opened to reach the Project area. Existing roads will continue to be used. Additionally, there is no need for a concrete batching plant or asphalt batching plant within the scope of the Project.

The Project route and Project components are shown in *Figure 3-1*.

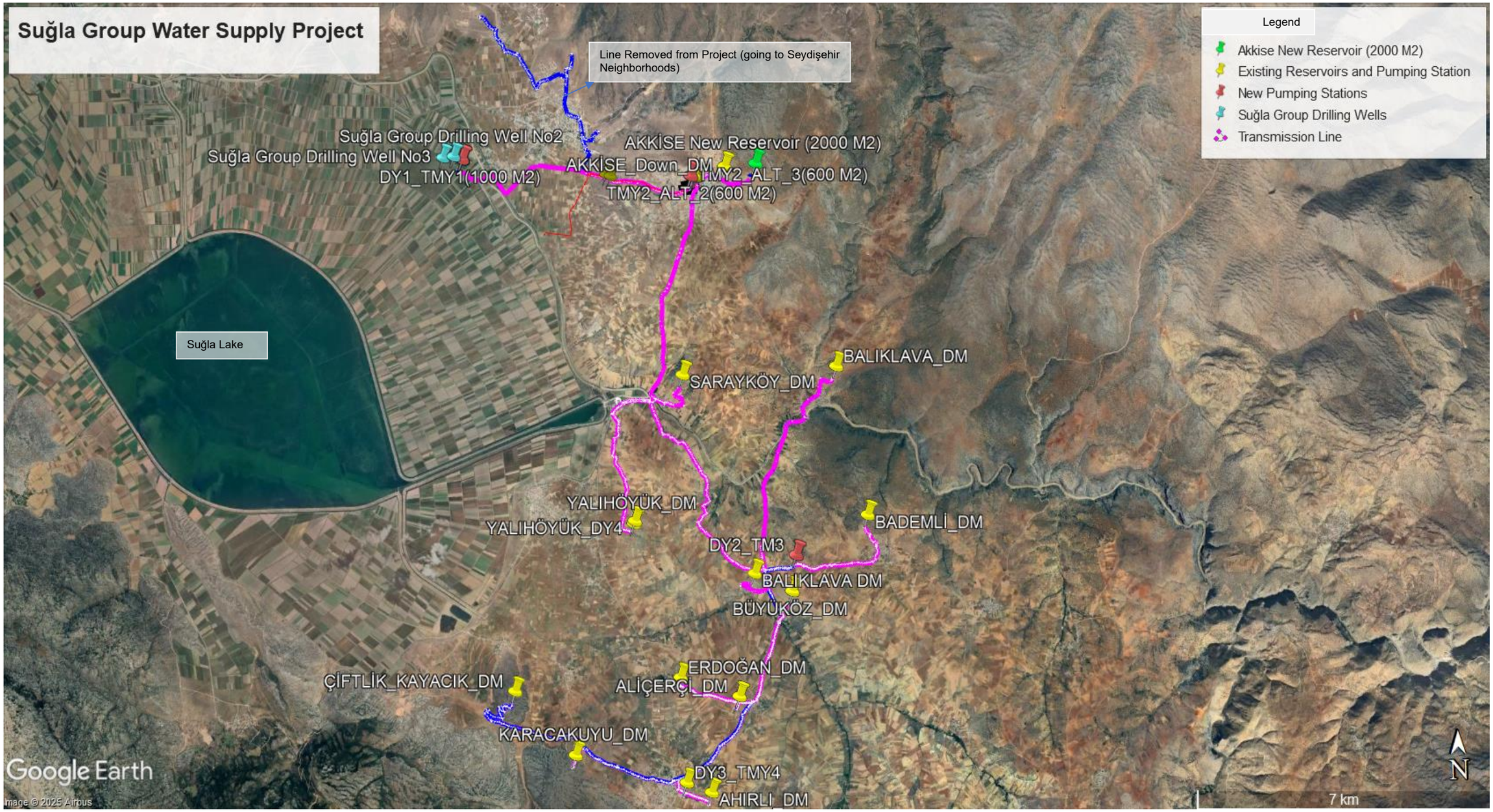


Figure 3-1.Suğla Group Water Supply Project

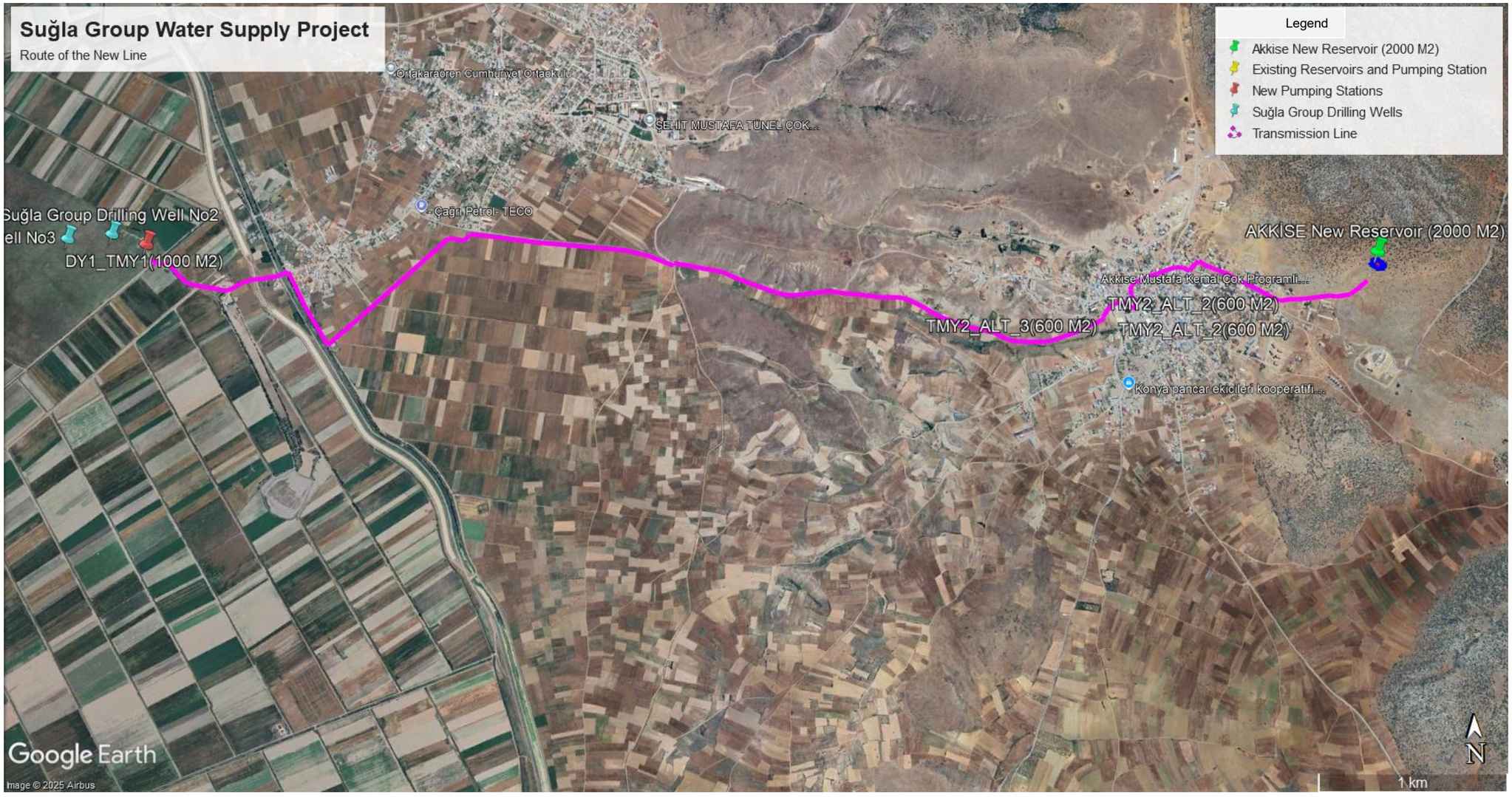


Figure 3-2.Newly Added Transmission Line (10 km) After the Change in the Project

According to the WB ESSs, “where the project involves specifically identified physical elements, issues and facilities likely to generate impacts, environmental and social risks and impacts will be defined in the context of the project's area of influence (AoI)”. Thus, the project's AoI consists of urban or rural areas likely to be affected by the project, its activities and the facilities directly owned, operated or managed (including by contractors). The Project's impact area covers the following environmental and social aspects: The area of wells from which water is supplied, settlements through which the transmission line passes (Suğla Group Neighborhoods). To determine the AoI along the water transmission line, 250 m lines were drawn on both sides of the transmission line. The 250 m distance was determined by taking into account the environmental and social impacts that the Project will cause and assuming that these impacts will remain within the determined distance. All residents of the neighborhoods through which the transmission line passes are defined as affected groups. The issue is addressed in detail in the Stakeholder Engagement Plan (SEP) prepared by POSEİDON for the Project.

3.1. Project Location

The Project area is located in Suğla Group (Ahırlı and Yalıhüyük Districts) in Konya Province located in the Central Anatolia Region of Türkiye. The Project aims to provide safe, reliable and sustainable drinking water in Suğla Group providing reliable services through construction of 55.5 km drinking water transmission line, reservoir, and pumping stations. Within the scope of the Project, Sugla Group drinking water supply will be met by boreholes to be drilled in Aşağıkaraoren Neighborhood of Seydişehir District selected by SHW 4th Regional Directorate. Water will be supplied to the project neighborhoods with four pumping stations and a new collection reservoir to be built across Sugla Lake.

The districts and neighborhoods within scope of the Project are given below:

- Ahılı District
  - Ahirli Neighborhood
  - Akkise Neighborhood
  - Alicerci Neighborhood
  - Bademli Neighborhood
  - Baliklava Neighborhood
  - Buyukoz Neighborhood
  - Ciftlik Neighborhood
  - Erdogan Neighborhood
  - Karacakuyu Neighborhood
  - Kayacik Neighborhood
  - Kucukoz Neighborhood

- Yalıhüyük District
  - Arasogut Neighborhood
  - Saray Neighborhood
  - Yalıhüyük Neighborhood

3.2. Project Population

Population projection for the districts was carried out by traditional methods, namely ILBANK and arithmetic increase methods. The results obtained from the methods were compared and the result obtained with ILBANK method was selected for the design of the Project. Accordingly, the population projections have been updated according to the target year 2058 and are presented in the table below:

Table 3-1 Konya Sugla Group Population Projections According to the ILBANK Method

No	District	Neighborhood	Population	
			2023	2058
1	AHIRLI	AKKİSE	2460	3485
2	AHIRLI	ALİÇERÇİ	142	400
3	AHIRLI	BADEMLİ	289	409
4	AHIRLI	BALIKLAVA	205	577
5	AHIRLI	BÜYÜKÖZ	45	64
6	AHIRLI	ÇİFTLİK	235	339
9	AHIRLI	KAYACIK	213	599
7	AHIRLI	ERDOĞAN	74	129
8	AHIRLI	KARACAKUYU	54	152
10	AHIRLI	KÜÇÜKÖZ	22	31
11	AHIRLI	MERKEZ	991	1596
12	YALIHÜYÜK	SARAYKÖY	56	158
13	YALIHÜYÜK	ARASÖĞÜT	117	166
14	YALIHÜYÜK	MERKEZ	1548	3455
Total			**6451**	**11560**

Source: *Sugla Group Water Supply Project, Project Design Change Justification Report, 2024.*

3.3. Water Demand

Drinking water requirements are made in accordance with the requirements of the “Technical Specification for Study Preparation, Feasibility and Project Design of Drinking Water Facilities” (ILBANK, 2013). The summary of the water demand projection for the Project is given in *Table 3-2.*

Table 3-2. Current Water Demand (October 2024)

No	District	Neighborhood	2020	2024	
			Average Daily Consumption Flow Rate (L/S)	Average Daily Consumption Flow Rate (L/S)	Maximum Daily Consumption Flow Rate (L/S)
1	Ahırlı	Akkise	17.00	17.00	**25.50**
2	Ahırlı	Aliçerçi	1.00	1.00	**1.50**
3	Ahırlı	Bademli	1.00	1.60	**2.40**
4	Ahırlı	Balıklava	1.00	1.70	**2.55**
5	Ahırlı	Büyüköz	0.50	0.50	**0.75**
6	Ahırlı	Çiftlik	1.00	1.50	**2.25**
7	Ahırlı	Kayacık	1.00	2.30	**3.45**
8	Ahırlı	Erdoğan	0.50	0.60	**0.90**
9	Ahırlı	Karacakuyu	0.50	0.80	**1.20**
10	Ahırlı	Küçüköz	0.50	0.50	**0.75**
11	Ahırlı	Merkez	4.50	4.50	**6.75**
12	Yalıhüyük	Sarayköy	0.50	0.50	**0.75**
13	Yalıhüyük	Arasöğüt	0.50	0.50	**0.75**
14	Yalıhüyük	Merkez	4.50	7.00	**10.50**
Total			**34.00**	**40.00**	**60.00**

Source: *Sugla Group Water Supply Project, Project Design Change Justification Report, 2024.*

3.4. Technical Characteristic of Suğla Group Water Supply Project

Within the scope of this Project, works will be carried out as mentioned below:

- Construction of 55.5 km water transmission line;
- Construction of 3 pumping stations;
- Construction of Akkise new reservoir.

Within the scope of Suğla Group Water Transmission Line Project, pipe material was selected as Ductile Pipe.

Hydraulic calculations were redone according to the updated population and water needs and storage requirements and the Schematic Plan of the Project is given below.

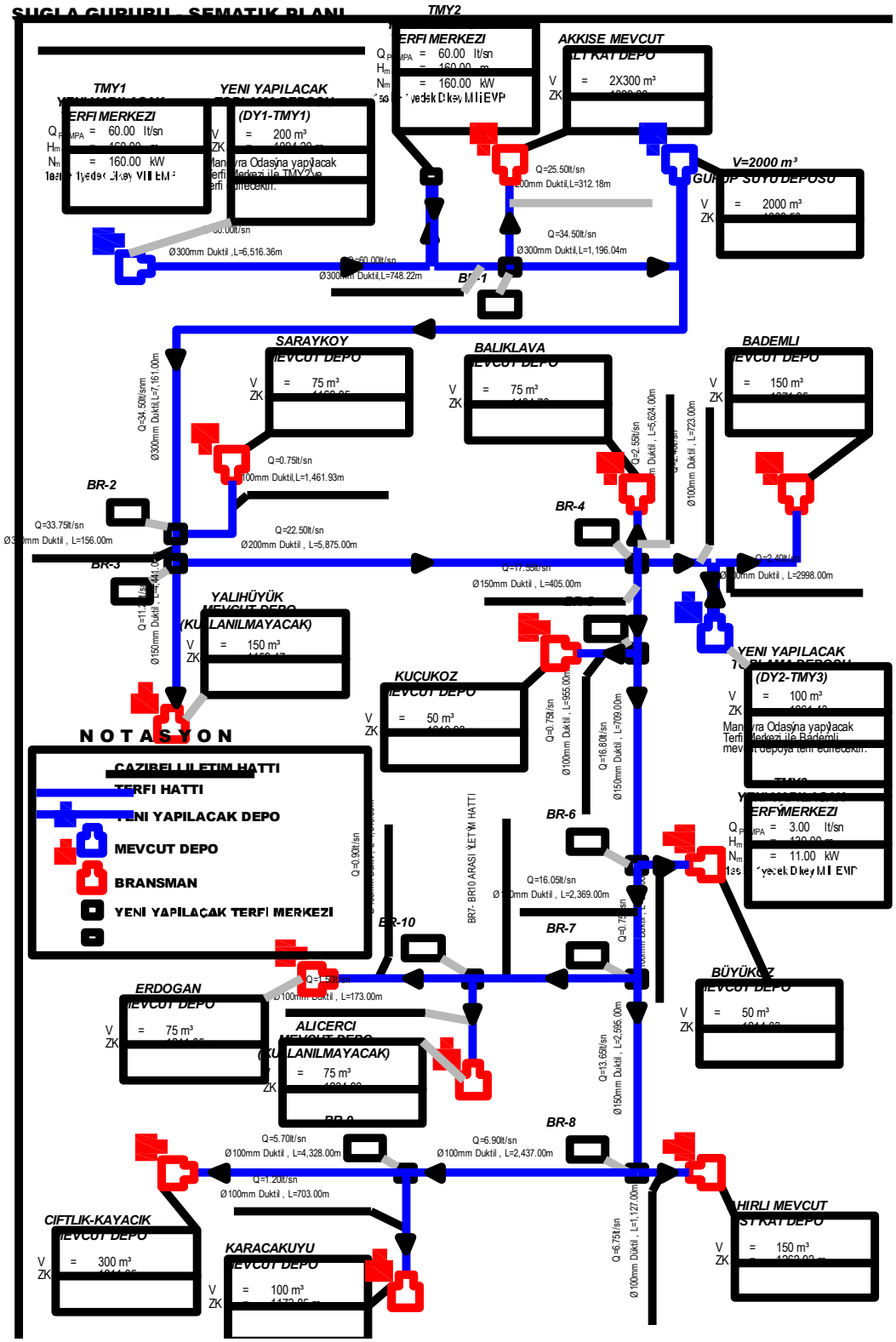


Figure 3-3.Schematic Plan of Project

Source: *Sugla Group Water Supply Project, Project Design Change Justification Report, 2024.*

The total need of Suğla Group will be met with drinking water with a flow rate of Q=60.00 L/s through boreholes drilled at the location determined by SWH 4th Regional Directorate (*see Figure 3-4*).In order to meet the needs of Suğla Group neighborhoods, it will be distributed through 55.5 km long transmission lines.



Figure 3-4. Locations of Wells

Within the scope of the Project, when the use of wells was first determined, a letter dated 02.08.2021 and numbered 98067411-220.99-11265 was sent to the 4th Regional Directorate of the General Directorate of State Hydraulic Works (SWH) requesting their opinion. The decision made by the 4th Regional Directorate of SWH regarding the use of wells is included in *Annex B.*

As mentioned above, two water wells named Suğla Group No-2 and Suğla Group No-3 are located approximately 1,000 meters west of Aşağıkaraören Neighborhood in Seydişehir District, approximately 4 kilometers northeast of Suğla Lake. The wellhead elevations of the wells are 1,096 meters, which is 2 meters higher than the level of Lake Suğla at 1,094 meters. The static water level in the wells is at the level of Lake Suğla, which is 2 meters. The Suğla Plain is fed by high groundwater levels from the Toros Mountains to the south**.** The high groundwater potential of the plain and the medium to good permeability and porosity characteristics of the units encountered in wells indicate that there will be no problems in terms of production test values for long-term production performance of wells to be drilled in the plain (Sugla Group Water Supply Project, Project Design Change Justification Report, 2024). The water obtained from these wells will be supplied directly for use without any treatment due to the urgent water needs of the Suğla Group.

The Drilling Well Logs of the wells and the Analysis Report prepared based on the water samples taken from the wells are included in *Annex-C.*

According to the Analysis Report dated 21.05.2025, physical parameters and chemical parameters were analyzed. The analysis results meet the limit values specified in the Regulation on Water Intended for Human Consumption. According to the analysis result, the turbidity of the water is 0.02 NTU (*see Annex-D*). According to this Analysis Report, water from wells can be used without treatment.

According to Article 13 of the Regulation on the Protection of Groundwater against Pollution and Degradation, wells should be surrounded by barbed wire with a radius of 50 meters..

The method statement for construction works under the scope of the Project will be prepared by the Contractor and submitted to the KOSKI/PIU and ILBANK before commencement of the works. Without the approval from the KOSKI/PIU and ILBANK, no work will be performed on site. The environmental mitigation measures that need to be taken during the construction works are explained in Mitigation Management and Monitoring Plan of this report.

On January 22, 2025, SUEZ team visited the existing reservoirs during the field study. Some of the reservoirs are shown in the *Figure 3-5.*



Bademli Reservoir



Balıklava Reservoir

Figure 3-5. Existing Reservoirs

3.5. Project Schedule

The tendering and contracting period of the Project is expected to take place in the second quarter (Q2) of 2025, and after the tendering period, the construction works will start and last for 12 months for the Project. The defect liability period (DLP) starts just after that and lasts for 12 months. The anticipated schedule of the Project is provided in *Figure 3-6.*

| Ref. No | Description | MONTHS | | |

4. ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

In this section, in order to fully understand the impacts of the Project, a baseline study was conducted for determining the (baseline) conditions without the Project. The area where these studies were conducted has been determined at least to cover the Area of Influence (AoI) of the Project and this AoI has different geographic extent. For studies on the physical environment (resources) the area of the whole district and the province has been considered, while for the ecological and socio-economic studies separate AoIs have been defined.

4.1. Physical Environment

This section includes information regarding geological, hydrogeological and hydrological characteristics, seismicity and natural hazard conditions, soil, topography, land use characteristics, climate, environmental air quality and noise levels, landscape characteristics, and waste management in the Project area and its vicinity.

Descriptions and information provided in this chapter, regarding current conditions of the Project area and its vicinity, are based on data acquired from and reports prepared by related public and private institutions (the Ministry of Agriculture and Forestry, the General Directorate of Meteorology, the Eastern Mediterranean Development Agency, Turkish Statistical Institute, etc.), field studies conducted for identification of physical and biological environment, Geographical Information Systems (GIS) studies and satellite imagery.

4.1.1. Geographical Location and Topography

Konya Province is located in the southern part of the Central Anatolia Region on the Central Anatolian Plateau. Konya Province, naturally, starts from Haymana Plateau in the north, Cihanbeyli Plateau and Salt Lake in the northeast, Beysehir Lake and Aksehir Lake in the west and Sultan Mountains in the south; it extends to the volcanic mountains formed along a fault line in front of the inner slopes of the Taurus arc, continuing to the Karaman Province in the south and the Obruk Plateau in the east. Konya Province is located in the northern sphere between 31° 14'-34° 05' east meridians and 36° 22'-39° 08' north parallels. Located at an altitude of 1016 meters above sea level, it is the largest city in Türkiye with a surface area of 39.000 km². Konya Plain, Cihanbeyli Plateau and Obruk Plateau which are known as the granaries of Türkiye, are in the Konya Province. Lakes of Konya Province consist of Tuz (Salt) Lake, Aksehir Lake, Beysehir Lake, and Sugla Lake. In addition to Türkiye's largest bauxite and magnesite deposits, there are coal, clay, limestone, lead, zinc, barite mines and significant underground water reserves within the provincial borders of Konya.

The Project will provide drinking water to Ahırlı and Yalıhüyük districts. The geographical features of these two districts that are located within the impact area of the Project are given below.

Ahırlı district is located between 37°14' north latitude and 32°07' east longitude. Its distance to the city center is 97 km and has an area of 337.4 km². The average altitude above sea level of the district is 1,150 meters. The district is surrounded by Akoren in the north, the Taurus mountain range in the south, Yalihuyuk district in the west, Seydisehir and Bozkir districts in the east. The district was established on a rugged and slowly rising plain in the east of Sugla Lake, and the rock structure of the area consists of solid limestones. Although there is no stream passing through the boundaries of the district, the Beysehir Canal passes through the Akkise Town and Balıklava Village of the district before pouring into Apa Dam. A portion of the plateaus in the north and foothills of the Taurus mountain range are located within the borders of the district.

Yalıhüyük district is located between 37°18' north latitude and 32°05' east longitude. Its distance to the city center is 114 km and has an area of 122.2 km². The average elevation of the district above sea level is 1,100 meters. The district is surrounded by Seydisehir in the north, Ahirli in the south, Akseki district of Antalya province in the west and Bozkir district in the east. Located on the southwest sides of the Taurus Mountains, the district was established on the edge of Sugla Lake. Sugla Water Storage (Pond) has been constructed in

the Sugla Lake basin to retain water for domestic/drinking water purposes. The Beysehir Canal passes right by the edge of the district, transferring water from Beysehir Lake to Apa Dam.

4.1.2. Land Use and Property

Proposed Sugla Group Water Supply Project only includes water transmission lines, reservoir, pumping stations. Proposed units of the water transmission line do not require any private land as all construction works of the Project will be carried out within existing roads and on public lands belonging to the Konya Metropolitan Municipality. Therefore, World Bank OP 4.12 (Operational Policy on Involuntary Resettlement) will not be triggered within the scope of this Project, as neither expropriation nor resettlement will take place for land acquisition. In case of any damage to surrounding lands/crops and structures during the Project's implementation, the responsible contractor will address the situation by mitigation and compensation as required.

Land Use according to the Environmental Master Plan

The Project area is located in sections N27 and N28 of 1/100,000 scale Environmental Master Plan of Konya-Karaman Planning Zone, which was approved in September 16, 2013 by the MoEUCC. According to Environmental Master Plan, the Project area consists of urban development area, urban settlement area, first degree road, second degree road, organized agriculture/livestock area, pasture area, irrigation area, forest area, and agricultural area. There is no formal/informal user for the areas to be used within the scope of the Project. Therefore, there will be no local people that will experience income loss due to the Project. A demonstration of the Project components on the Environmental Master Plan is presented in Figure 4-1.

Land Use According to the Provincial Land Use Database

Land use and soil maps for Konya Province were developed by the former General Directorate of Rural Services in 1993. According to the analysis of this data, the land use types corresponding to project components are settlement, pasture, garden (irrigated), grassland, non-irrigated agriculture, pasture, forest, vineyard (non-irrigated). The land use map of the project area based on the Provincial Land Use Database is presented in Figure 4-2.

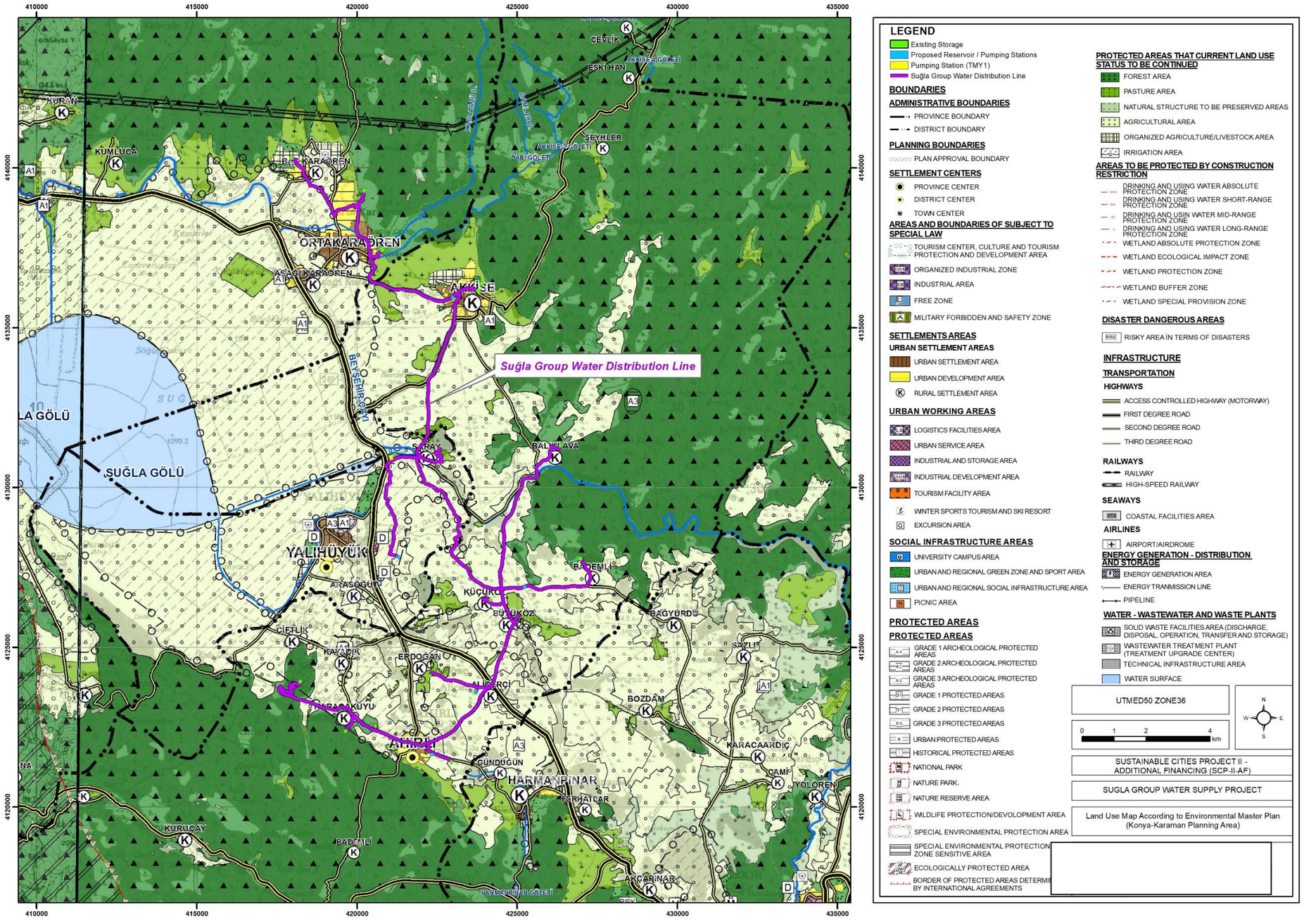


Figure 4-1 Land Use Map According to Environmental Master Plan (Konya-Karaman Planning Area)

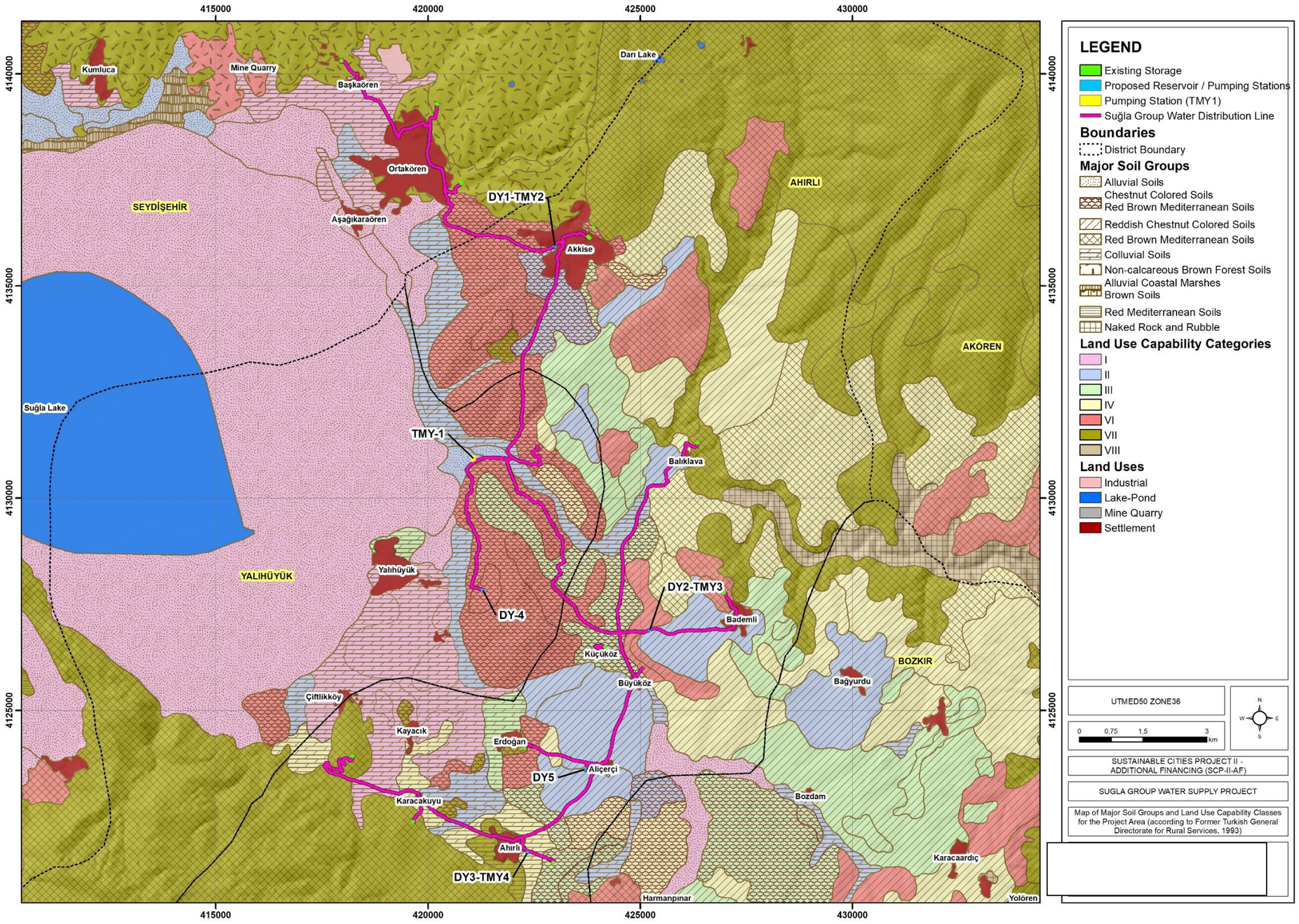


Figure 4-2 Land Use Map of the Project

4.1.3. Climate Conditions and Meteorology

Continental climate prevails in Konya Province. Summers are dry and hot, and winters are cold and snowy. Although it is located in the southernmost region of Central Anatolia, it is colder than other Central Anatolian cities. The reason for these climatic conditions is that the Central Taurus mountain range prevents the humid winds of the Mediterranean Sea from the south of Konya. Convectional rains are often seen in the spring. Another feature of the Konya Province climate is that summers start very late and winters end very late. The summer drought, which is characteristic of the steppe climate, has caused the best quality wheat of Türkiye to be grown in the province. Due to the bowl shape of the Konya Plain, the province with the highest number of foggy days and fog density in Türkiye is Konya.

The long-term meteorological data of Konya Province for the years between 1929 and 2020 taken from the Turkish State Meteorological Service show that the annual average temperature is 11.7°C. The highest temperature is recorded as 40.6ºC in July, and the lowest temperature is recorded as –28.2ºC in January. Precipitation is higher in winter and autumn, and the average annual precipitation is 392.2 mm. The rainiest months are December and May. The tabular representation of the average, maximum, and minimum temperature records is given in Table 4-1.

Table 4-1. Long Term Meteorological Data of Konya Province (1929-2020)

Parameter	January	February	March	April	May	June	July	August	September	October	November	December	Annual
	Measurement Period (1929-2020)												
Avg. Temperature (°C)	-0.2	1.4	5.5	11.1	15.9	20.1	23.5	23.3	18.8	12.8	6.5	1.7	11.7
Highest Avg. Temperature (°C)	4.6	7.0	11.7	17.5	22.4	26.7	30.2	30.2	26.0	20.1	13.0	6.6	18.0
Lowest Avg. Temperature (°C)	-4.2	-3.3	-0.2	4.3	8.6	12.6	15.9	15.6	11.0	5.9	0.8	-2.3	5.4
Average Number of Rainy Days	11.1	10.0	10.9	11.7	13.0	8.4	3.2	2.6	4.4	7.9	8.2	11.4	102.8
Average Monthly Amount of Rain (mm)	37.8	28.5	29.1	32.1	43.4	25.7	7.0	6.3	13.4	29.8	32.5	43.6	329.2
Highest Temperature (°C)	17.6	23.8	28.9	30.9	34.4	36.7	40.6	39.0	38.8	31.6	25.4	21.8	40.6
Lowest Temperature (°C)	-28.2	-26.5	-16.4	-8.6	-1.2	1.8	6.0	5.3	-3.0	-8.4	-20.0	-26.0	-28.2

Source: Turkish State Meteorological Service, 2021

The climate of Ahırlı District has the characteristics of Central Anatolia and Mediterranean climates. In the Ahirli region, summers are hot, dry, and clear, and winters are very cold, snowy, and partly cloudy. The temperature ranges from -4°C to 29°C throughout the year, rarely below -11°C and above 33°C. The warm season lasts from mid-June to mid-September, with the average daily high temperature above 24°C. The hottest month in Ahirli region is July, with an average high temperature of 29°C and a low temperature of around 16°C. The cold season starts at the end of November and lasts until mid-March, with the average daily high temperature below 9°C. The coldest month in Ahirli region is January, with an average minimum temperature of -4°C and a maximum temperature of around 4°C. In the Ahirli region, the rainiest month is December, with an average of 87 millimeters of precipitation, and the least rainy month is August, with an average of 3 millimeters (*NASA Global Modeling and Assimilating Office, 2022*).

The climate of Yalıhüyük District is hot, dry, and clear in the summer and very cold, rainy, and partly cloudy in the winter, as typical of the continental climate. The temperature ranges from -3°C to 30°C throughout the year, rarely below -10°C and above 34°C. The warm season starts mid-June and lasts until mid-September, with an average daily high temperature above 25°C. The hottest month in the Yalıhüyük region is July, and the average high temperature is 29°C while the lowest temperature is 17°C. The cold season starts in late November and lasts until mid-March, with an average daily high temperature below 10°C. The coldest month

in the Yalihuyuk region is January, with an average low temperature of -3°C while the high temperature is around 5°C. The rainiest month in the Yalihuyuk region is December, with an average precipitation of 86 millimeters, while the least rainy month in the Yalihuyuk region is August, with an average of 3 millimeters *(NASA Global Modeling and Assimilating Office, 2022).*

4.1.4. Natural Hazards and Seismicity

Natural Hazards

According to “Spatial and Statistical Distribution of Disasters in Türkiye Information Inventory” prepared by former Ministry of Public Works and Settlement in 2008, the natural disasters observed in Konya Province are; landslides, floods and rockfalls. According to the report "Overview of 2019 within the scope of Statics of Natural Events within the scope of Disaster Management" prepared by Disaster and Emergency Management Presidency (AFAD) in 2020, the natural disasters that occurred in the province of Konya between 1950-2019 are landslide/rockfall (155 events), flood (91 events) and avalanche (1 event).

Considering the Distribution of Disaster Events maps prepared by former Ministry of Public Works and Settlement, records of rockfalls and floods are observed in Seydisehir District (see Figure 4-3 and Figure 4-4), however, no natural disasters such as earthquakes, active and potential mass movements (landslides). Ahirli and Yalihuyuk districts has no records of rockfalls, floods, earthquakes and landslides.

As a result, the Project area is to be considered as part of "Law on Aids Implemented with Mitigations taken for Natural Disasters on Public Life" numbered 7269.

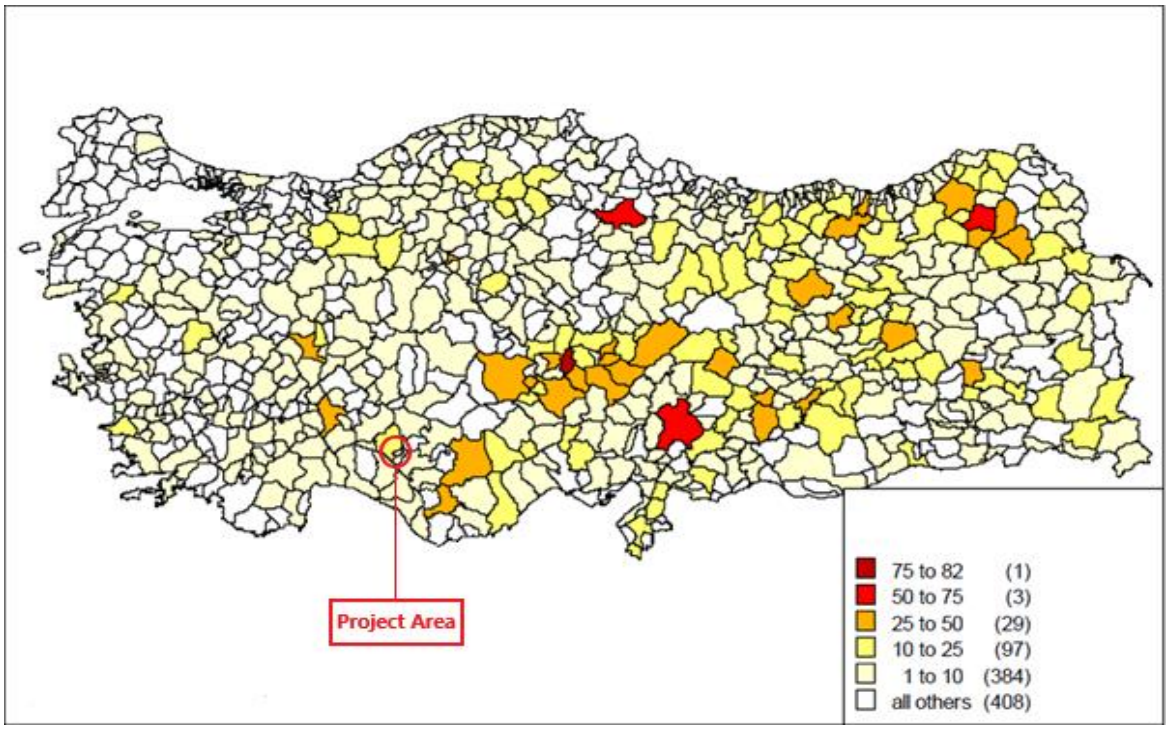


Figure 4-3 Rockfall Map of Ahirli, and Yalihuyuk Districts

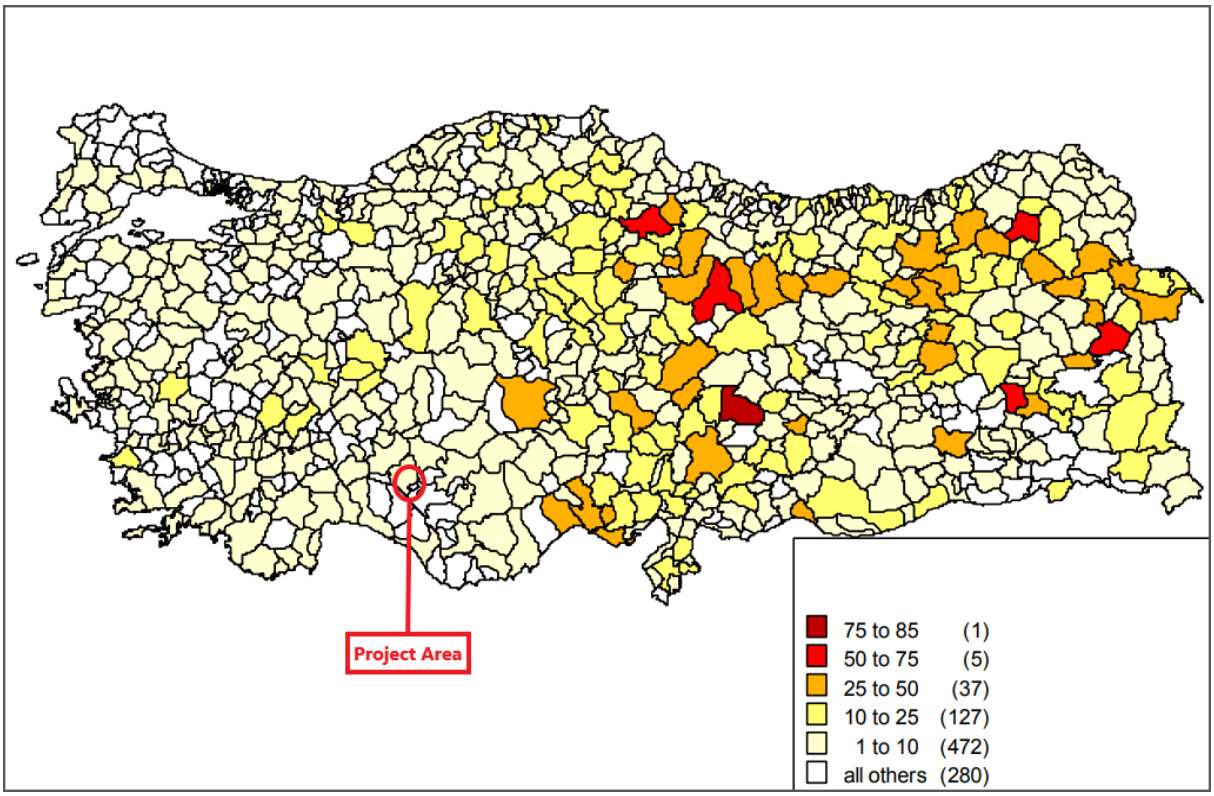


Figure 4-4 Floods Map of Ahirli, and Yalihuyuk Districts

Seismicity

According to Earthquake Risk Map of Türkiye published in the Official Gazette dated 18.03.2018 and numbered 30364, ground acceleration of Konya Province is classified as between 0.0-0.2 g, whereas the ground accelerations of Ahirli, Seydisehir and Yalihuyuk Districts are classified as between 0.0-0.1 g, indicating low hazard. There are no active faults identified by MTA (Mineral Research and Exploration) for the region where the project area is located. The Earthquake Risk Map of Türkiye is given in Figure 4-5. In all types of structures to be built, principles of "Regulation for the Structures to be built in Disaster Areas" of former Ministry of Public Works and Settlement shall be complied with.

In addition, the project area is 8.7 km and 23.7 km away from Alacadag fault zone and Quaternary fault, which are the closest fault lines to the project area, respectively. The map presenting active faults in and around Project area is shown in Figure 4-6.

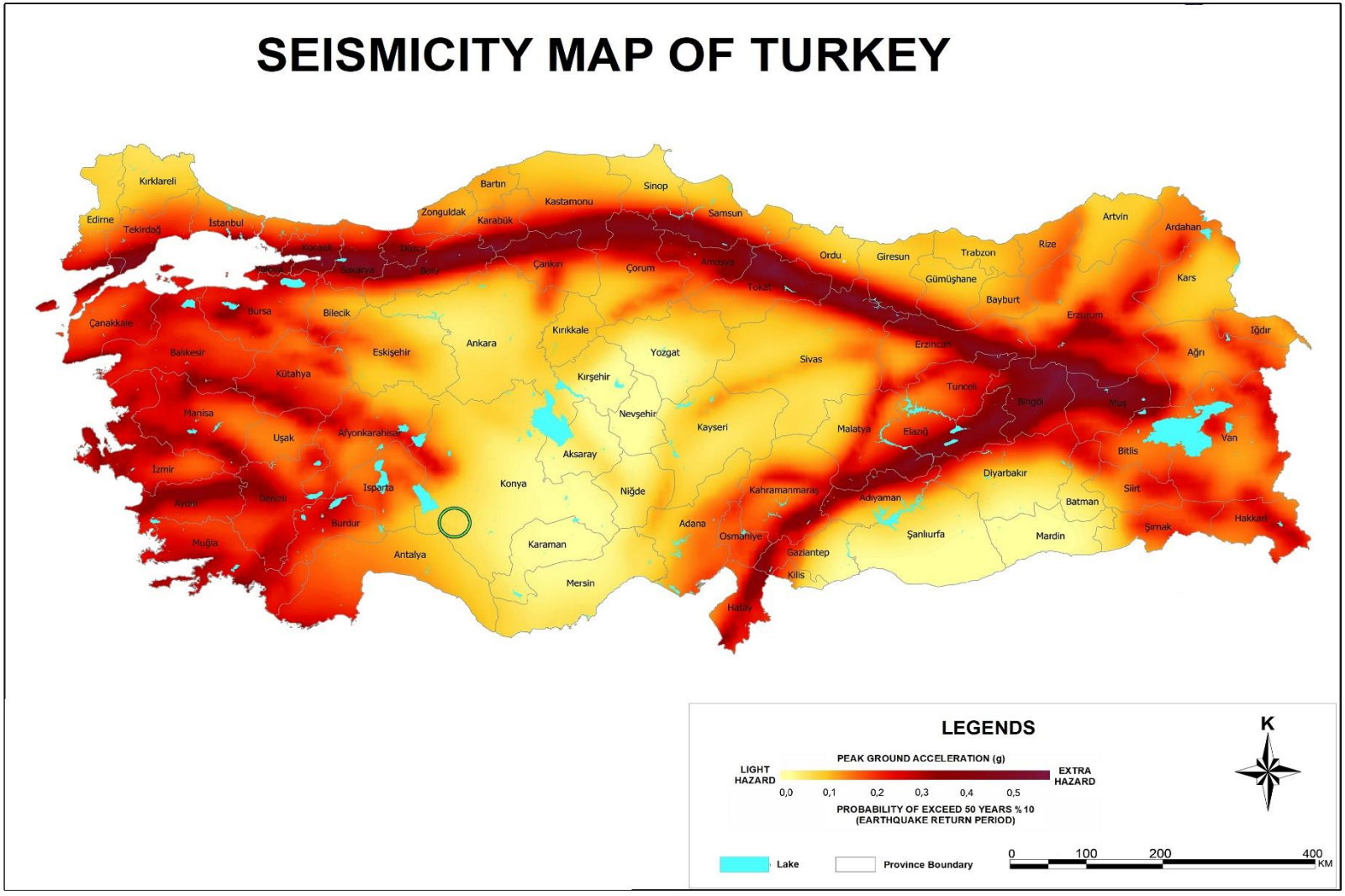


Figure 4-5 Earthquake Hazard Map of Türkiye

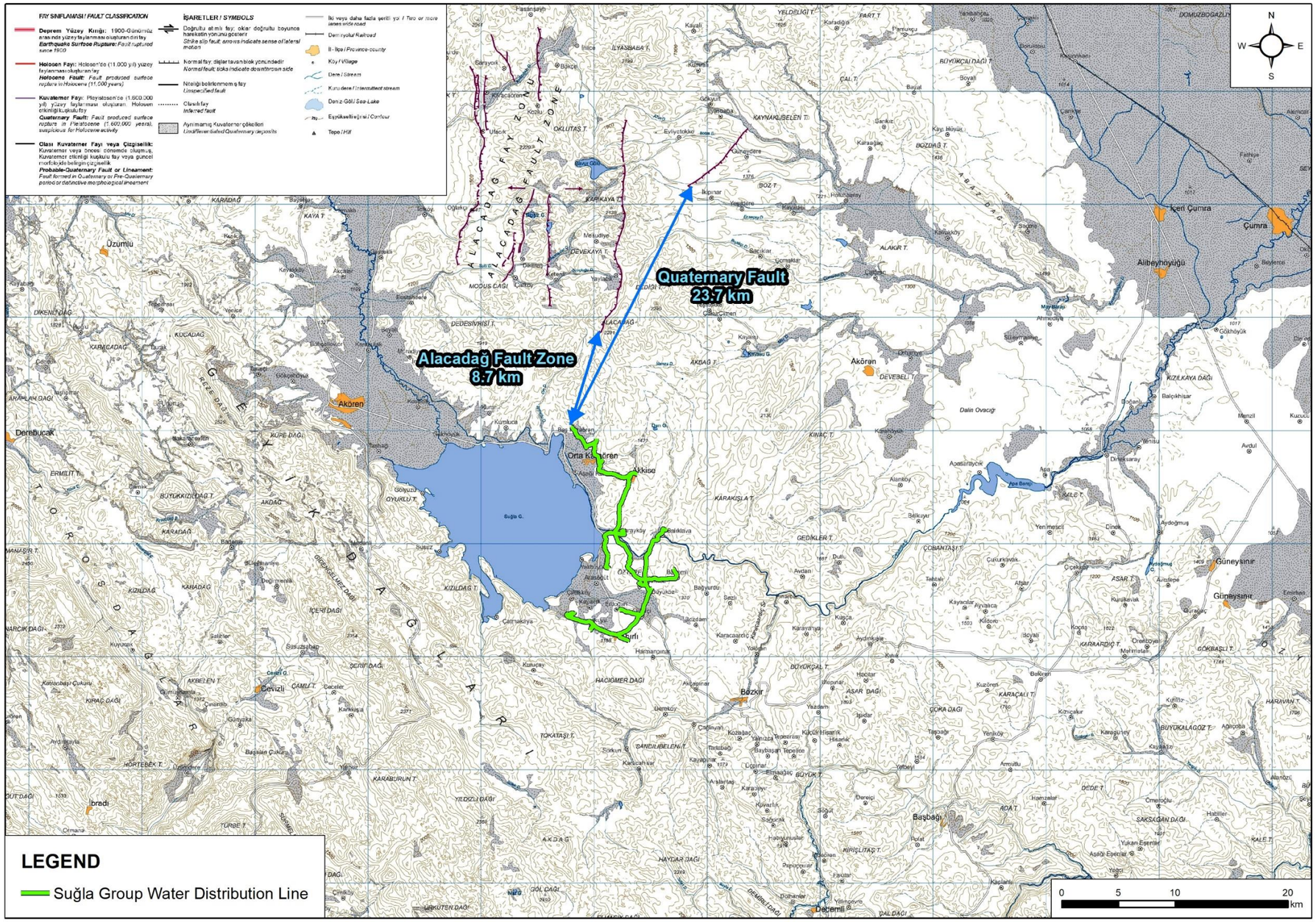


Figure 4-6 Active Fault Map of the Project

4.1.5. Geology, Hydrogeology and Hydrology

Geology

In this section, the geological structure of Ahırlı and Yalıhüyük and their surroundings is discussed and this section is based on the feasibility report of the Project.

In the study area located in the southwest of Konya, some of the rocks belonging to the central part of the Kutahya-Bolkardagi belt are present. In Konya province and its surroundings, as the oldest unit, there is the Late Triassic-Late Cretaceous Lorasdagi formation deposited on a shallow and stable carbonate platform, and the Midostepe formation consisting of Late Cretaceous radiolarite and chert interbedded limestones. These units can be mapped in and within the Hatip ophiolitic complex consisting of Late Cretaceous aged cherty limestone, mudstone, serpentinite and ophiolitic rock fragments. The İkivritepe olistoliths are tectonically overlain by younger formations. Overlying the Hatip ophiolite complex, Cayırbagi Ophiolites, which are composed of Late Cretaceous aged dark green, locally browned, serpentinized peridotite, gabbro and pyroxenites, are overlain by tectonic contact. The Ulumuhsine formation, which consists of Late Miocene-Early Pliocene aged, gray, dirty yellow and cream colored lacustrine limestones, covers the other units unconformably, while the Quaternary-Current alluviums overlie the older units with an angular unconformity.

Lorasdagi Formation (Tr-Kl):

The Lorasdagi formation consists of recrystallized limestone, dolomitic limestone and dolomites. Birim, Goger and Kiral (1969) and Gormuş (1984) by Lorasdagi limestone, Ozcan et al. (1988) named it as Lorasdagi formation. In this study, the nomenclature of the Lorasdagi formation was adopted. The most typical outcrops are observed in the Loras Mountain section.

The unit starts with gray-beige colored, massive and indeterminate bedding levels at the lower levels and continues with generally thick, occasionally medium-thin bedded and chert nodule levels towards the top.

The dominant mineral of the rock is calcite. Recrystallized calcite and local chert formations are observed in the cracks. In some petrographic sections, it is seen that the unit also presents dolomitic features. In the sections where recrystallization is high, it has been determined that the primary texture of the unit has completely disappeared (Aydin et al. 2000).

The unit crops out around Lorasdagi in the northwest of the study area. In addition, there are many blocks in the Hatip ophiolite complex.

The Lorasdagi formation, which forms the base of the study area, is overlain by the Midostepe formation conformably.

Midostepe Formation (Km):

The unit consists of radiolarite and pelagic limestones with red-pink colored chert interlayers. It was stated by Gormuş (1984) that the Lorasdagi formation is neritic at the bottom and pelagic with a lateral transition at the top, so it was not necessary to map this succession as a separate unit and hence name it. However, previously, Goger and Kiral (1969) named this unit the Midostepe formation, after its outcrops around Midos Tepe in the west of the study area. This naming was later changed by Ozcan et al. (1988) and the nomenclature of the Midostepe formation was deemed appropriate in this study. The unit presents typical outcrops around Midostepe.

Midostepe formation is represented by grayish colored pelagic mudstone and reddish colored pelagic carbonates with radiolarian chert intermediate bands at the bottom. The rate of cherts increases gradually towards the top. The lower part of the chert layers is gray, the upper parts are reddish. Gray colored coarse-grained (turbiditic) carbonates are observed between these chert levels. In its central parts, the unit, which consists of pink-red colored pelagic limestone-chert alternation, also includes greenish colored shale layers. The formation continues upward with chert nodular and radiolarian chert intercalated, fine-medium bedded,

coarse grained, gray colored limestones, and ends with yellow, burgundy colored pelagic limestone and mudstone with chert interlayers (Ozcan et al., 1990).

The unit is observed in the form of many blocks of various sizes in a mixed region, in Midostepe and its surroundings, in the north of the Konya-Seydisehir highway.

Hatip ophiolite mix (Kh):

The unit consists of a matrix mostly composed of serpentinite and ophiolite rock units and radiolarite, shale, gabbro and limestone blocks in them. It was defined as the Hatip formation for the first time by Goger and Kiral (1973). However, as a result of detailed studies, Ozcan et al. (1990) named these rocks as "Hatip ophiolite complex". This nomenclature was also used in this study.

The matrix of this melange unit is red-brown; forms radiolarite, red-pink pelagic limestones, harzburgite, dunite, gabbro, diabase, pillow lavas, serpentinite, purple and gray colored shale and sandstones. In some sections the serpentinites are highly fractured and weathered and contain very few magnesite veins. A schist structure, foliation and occasional folds are observed in flysch shale and sandstone depending on deformations (Aydin et al. 2000). Red and green colored, weathered, quartz veined mudstones are also observed in the unit. The mudstones show foliation with the effect of low grade metamorphism in places. Due to the increase in the degree of metamorphism, the mudstones, which transition to slate and phyllite, are observed in purple-green color in the topography. There are also occasional fine quartz veins in the slates and phyllites.

The unit was emplaced in the region due to compressions at the approaching plate boundaries, and it contains blocks of Triassic-Jurassic Lorasdagi and Midostepe formations, indicating that it was emplaced in the study area with compressions that took place in the Late Cretaceous. Therefore, although the unit was formed before the Late Cretaceous, its mixing and emplacement took place in this period.

Cayirbagi ophiolite (Kç)

The unit, mainly composed of green-brown sepantinized peridotite, gabbro and dunite, was identified by Goger and Kiral (1973) as "Serpentinized Peridodite and Dunite Blocks", Ozcan et al. (1988) as the "Cayirbagi Peridotite Napi" and by Eren (1993) as the "Cayirbagi Ophiolite" on the grounds that it is not composed of only peridotites. In this study, the nomenclature used by Eren (1993) was accepted. It is typically observed around Cayirbagi Village in the study area.

Gray, green and brown colored Cayirbagi ophiolite mainly consists of gabbro, diabase, serpentinite, peridodite and pyroxenites. The gabbros are macroscopically massive, gray-dark gray in color and heavily cracked. Although the rocks sometimes have a schistic structure due to the deformation effect, they generally have a structure with plenty of cracks and fractures, and talcization is observed in these cracks from place to place. Serpentinites, formed by the weathering of ophiolitic rocks, are observed in the form of blocks in some parts and are green and dark green in color on their fresh surfaces. In some serpentinite blocks, there are magnesite formations in the form of stockwork veins. In areas where magnesite is formed, serpentinite takes on a yellow and brown color.

Ulumuhsine Formation (Nu)

Ulumuhsine formation consists of gray, dirty yellow and cream colored lacustrine limestones. Eren (1993) named the unit “Ulumuhsine Formation” in reference to its outcrops around Ulumuhsine Village, and in this study, it was deemed appropriate to name it Ulumuhsine formation.

The dominant lithology of the formation is composed of off-white, gray and beige colored limestones. It is generally observed as well bedded and medium-thick bedded. Oncolite and stromatolite structures were determined. Conglomerates are observed in the lower parts of the formation. The grain sizes of these conglomerates are between coarse pebbles and fine pebbles.

It is observed in the southwest of Dikmeli (Godene) Village. The Ulumuhsine formation unconformably overlies the Hatip ophiolite complex and Cayirbagi ophiolite, which covers a large area in the field.

Alluvium (Qa)

Alluviums outcropping in stream beds and plains in and around Konya are composed of block-gravel-sand, silt-clay and mud material. The alluvial unit, the thickness of which varies between 10 and 100 m, has been formed since the Quaternary and overlies the underlying formations with angular unconformity.

The geological map of the region is presented in Figure 4-7. Considering Figure 4-7, the majority of the formations observed around the Project area and its immediate surroundings are continental clastic and volcanic rocks, undifferentiated Quaternary alluvium and spilite basalt.

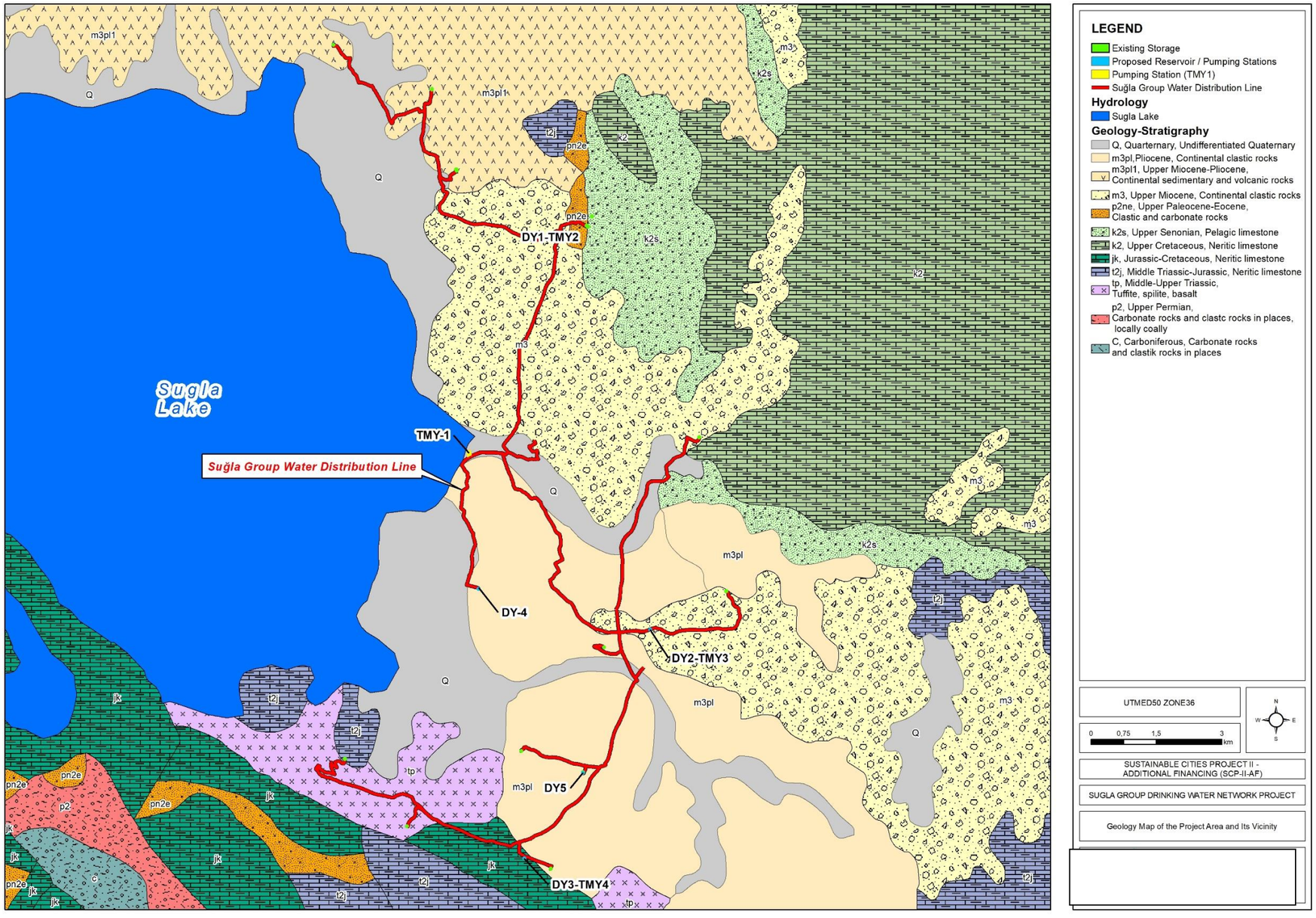


Figure 4-7 Geology Map of the Project

Hydrogeology

There are 26 fields with geothermal resource exploration license, one (1) natural mineral water exploration license and 18 geothermal resource operation licenses in Konya Province. Production is carried out in nine (9) of these geothermal resource operating licensed areas and information about the boreholes in Konya Province is given in Table 4-2.

Table 4-2. Boreholes in Konya Province

District	Name of Drill/Resource	Flow (L/sec)
Ilgin	SJ-1	130
	SJ-2	50
	SJ-3	40
	SJ-4	40
	SJ-5	50
Tuzlukcu	KT-1	60
	Buhar-1	57
	Buhar-2	55
	Buhar-3	60
	Buhar-4	55
Seydisehir	KSK-1	100
	KSK-2	40
Seydisehir	SK-1	2.5
	SK-2	110
Karapinar	KRP-1	15
Huyuk	K-1	50
Kadinhani	KNB-1	50
Karatay	SK-1	20
	SK-2	20
	SK-3	18
	SK-4	18
Eregli	A10	60
	A11	27
Cihanbeyli	BK-1	100
Ilgin	IBJ-1	12
Seydisehir	JT-1	8
Seydisehir	BSK-1	5
Meram	K-1	30
Tuzlukcu	SJ-1	22
Cihanbeyli	KC-1	38
	NT-2	40
Seydisehir	G-1	35
Tuzlukcu	Zeybek-1	50

Source: Konya Governorship Investment Monitoring Coordination Presidency, 2020

The main criteria to be considered regarding the determination of groundwater bodies in the Konya Closed Basin are; sub-basin boundaries, geological boundaries, aquifer boundaries and hydraulic relations between aquifers, significant water withdrawals, supplied water volume, point sources and diffuse sources, terrestrial and aquatic ecosystems. Using these criteria, 18 groundwater bodies were determined. The list and coordinates of these groundwater bodies are given in Table 4-3.

Table 4-3. Groundwater Bodies

Name of Groundwater Bodies	Coordinates(X/Y)
Beysehir-Kasakli	3866654/4177195
Seydisehir	413091/4164442
Cumra-Karapinar	484252/4173707
Selcuklu	435358/4202663
Akoren	429305/4163322
Karaman	524181/4132252
Eregli	604827/4173013
Altunhisar	610640/4200365
Sultanhani-Aksaray	542932/4227423
Ciftlik	603610/4235213
Altinekin	475584/4246647
Yeniceoba	481334/4308014
Kadioglu-Insuyu	470591/4285273
Kulu-Cihanbeyli	504190/4308014
Kirkpinar	483830/4347020
Sereflikochisar	551097/4295118
Devekovan	567774/4295118
Misli-Merkez	651189/4236561

Source: Konya Closed River Basin Management Plan, 2018

Hydrology

Konya Province is situated in the Central Anatolia Region. There are mostly seasonal and flood regime streams within the borders of the province and they are generally short rivers. Due to the wide areas and closed basins of Konya, the streams disappear in the swamps on the plains. Streams in the region are fed by snow and rainwater. Since the precipitation regime in Konya Province is irregular, the regime of these rivers is also irregular.

Most of the streams dry up during the summer months, but in spring and summer, short-term torrential rains can cause flooding. For this reason, efforts are being made to combat erosion in the region. This is carried out by building dams on the most flooded streams. May and Apa dams are examples of this. In Konya Province, the catchment basins of the rivers flow in different directions.

Generally, lakes do not form in Konya and Eregli plains due to drought, and the streams that take their source from the elevations here disappear in the plain. The largest and most important stream in Konya is Carsamba Water. It takes its source from the elevations in Bozkir District. It combines with the skirt of Beysehir Lake and forms the Cumra Plain irrigation network. The Apa Dam, which was built on Carsamba Stream, was established both to prevent floods and to irrigate a part of the Konya Plain.

Lake Tuz was formed in the center of its closed basin. It is at the intersection of the borders of Ankara, Konya and Aksaray provinces, and some of it is located within the borders of Konya Province. Tuz Golu is the second largest lake in Türkiye in terms of area. Its depth is around 12 m. In summer, its area is considerably smaller due to the effect of evaporation. Salt deposits occur in the dried sections. A part of Türkiye's salt need is supplied from this lake; however, it cannot be used for irrigation and aquaculture.

Beysehir Lake is located in the west of Konya on the Konya-Isparta border. Beysehir Lake is the 3rd largest lake in Türkiye and the largest freshwater lake. It was formed by tectonic-karstic events.

The dams and the ponds in Konya Province are given in Table 4-4.

Table 4-4. Dams and Ponds in Konya Province

Name of the Dam/Pond	Corresponding River	Application Area	Area (m^2)
Dams			
Altinapa Dam	Meram River	Irrigation, Flood Protection, Drinking Water	3,823,919
Apa Dam	Carsamba River	Irrigation	15,506,487
Damlapinar Dam	Damlapinar River	Irrigation	960,780
Derebucak Dam	Kocacay River	Irrigation	938,835
Ivriz Dam	Ivriz Stream	Irrigation, Flood Protection	4,663,876
May Dam	Meram Stream	Irrigation, Flood Protection	11,588,765
Sille Dam	Sille Stream	Irrigation, Flood Protection	240,231
Ponds			
Akoren Pond	Bayindir River	Irrigation	888,234
Aydogmus Pond	Bogaz River	Irrigation	331,009
Bashuyuk Pond	Kurudere River	Irrigation	296,177
Bostandere Pond	Kalayci River	Irrigation	405,092
Cihanbeyli Pond	Insuyu River	Irrigation	1,574,576
Caglayan Pond	Yayla River	Irrigation	889,403
Cavus Pond	Ilmen River	Irrigation	276,139
Ciftlikozu Pond	Karakaya River	Irrigation	356,115
Cukurcimen Pond	Cokuk River	Irrigation	165,530
Derbent Pond	Belbasi River	Irrigation	151,639
Erenkaya Pond	Carsak River	Irrigation	919,179
Evliyatekke Pond	Arkil River	Irrigation	268,769
Guneydere Pond	Gavur River	Irrigation	2,354,084
Kiziloren Pond	Yayla River	Irrigation	145,670
Malas Pond	Uludere River	Irrigation and Tap	235,065
May-Kayasu Pond	Peynirli River	Irrigation	159,458
Sefakoy Pond	Kavakdere River	Irrigation	140,738

Source: Konya Closed Basin Protection Action Plan

The main surface water resources of the province are also given in Table 4-5. Among them Carsamba Creek, which is one of the largest surface waters in the province, is an important surface water resource in agricultural irrigation of Konya Province.

Table 4-5 Surface Water Sources in Konya Province

Water Source	Average Annual Flowrate (m^3/s)
Uludere	143.2
Beysehir Lake	446
Cavuk Stream	37.4
Suberte Creek	117.9
Carsamba Creek	164.8
Zanapa Stream	233.6
May Stream	53.6
Meram Creek	51
Sille Stream	2
Insuyu Stream	14.7
Goksu River	818.7
Yunak Gokpinar Stream	223.2
Ilgin Stream	124
Bakirpinari, Zengi, Besgoz Resources	36.4
Others	472.5

Source: Konya Provincial Environmental Status Report, 2019

The hydrology map of the Project is given in Figure 4-8.

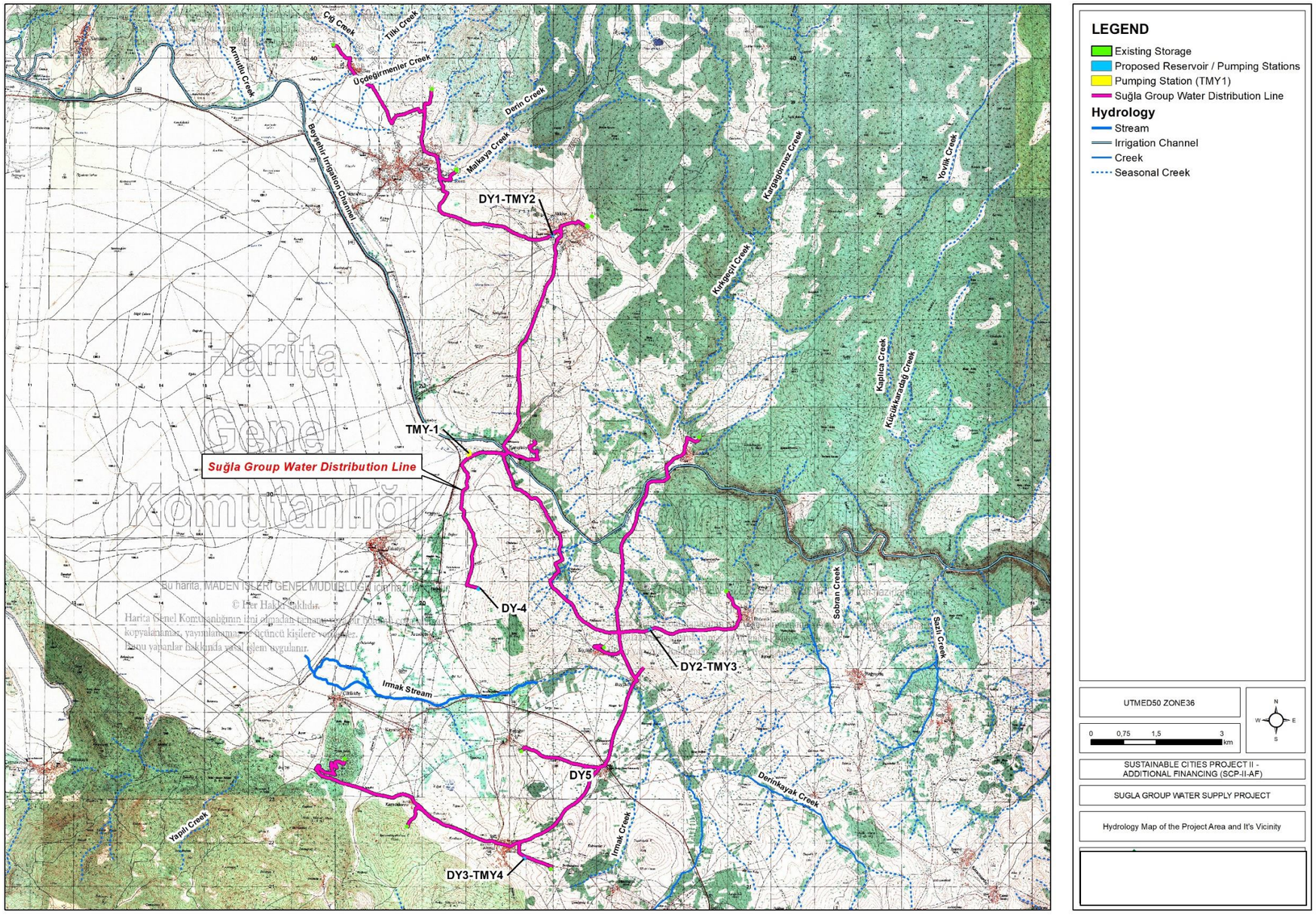


Figure 4-8 Hydrology Map of the Project

Water Quality Measurements

In order to identify the baseline water quality in the project area, especially around the planned pumping station, a groundwater and surface water sampling campaign was conducted by ENCON Laboratory on 25-26 May, 2023. Groundwater sampling locations were selected by determining the existing groundwater wells closest to the Project's AoI. Surface sampling locations were determined by assessing the proximity of the construction works to be carried out within the scope of the Project that intersects with the surface water resources to settlement areas nearby. Closest sensitive receptor to the sampling locations are given in Table 4-6.

Table 4-6 Closest Sensitive Receptors to the Sampling Locations

Sample Type	Sample Location	Closest Sensitive Receptor	Sensitive Receptor Location	Distance (m)
Surface Water 1	Kucukoz	Municipal Building	Kucukoz	4577
Underground 1	Ahirli	Municipal Building	Ahirli	1022
Underground 2	Alicerci	Municipal Building	Alicerci	2336
Underground 3	Akkise	Elementary School	Akkise	397

Photographs regarding the sampling campaign are provided in Figure 4-9. Measurement and analysis results with the water quality classification criteria stipulated in the Water Pollution Control Regulation and Surface Water Quality Regulation are presented in Table 4-7 and Table 4-8. Sampling locations are shown in Figure 4-10. The laboratory reports are presented in Annex-3 of this report.



Figure 4-9 Groundwater and Surface Water Sampling

Table 4-7 Groundwater Sampling Measurement Parameters, Location and Analysis Results

Parameter	Units	Groundwater Sampling Location-1 (X:37151549/Y:3282094) and Results	Groundwater Sampling Location-2 (X:3714354 /Y:3275154) and Results	Groundwater Sampling Location-3 (X:3722816 /Y:3282491) and Results	Water Pollution Control Regulation and Surface Water Quality Regulation Water Quality Classes			
					I	II	III	IV
Ammonium nitrogen	mg/L	<0.02	<0.02	<0.02	<0.2	1	2	>2
pH	-	7.77	7.56	7.89	6-9	6-9	6-9	6-9
TSS	mg/L	3.00	5.00	<2.5	-	-	-	-
TKN	mg/L	0.82	<0.5	0.65	<0.5	1.5	5	>5
TDM	mg/L	281.00	405.00	305.00	-	-	-	-
Temperature	°C	15.90	15.70	17.40	-	-	-	-
Turbidity	NTU	0.60	2.07	<0.2	-	-	-	-
Fecal Coliform	kob/100 mL	0	0	0	≤10	200	2000	> 2000
Total Coliform	kob/100 mL	5	13	0	≤100	20000	100000	> 100000
Escherichia coli	kob/100 mL	0	0	0	-	-	-	-
Salinity	‰	0.25	0.32	0.24	-	-	-	-
Conductivity	µS/cm-1	497.00	620.00	479.00	<400	1000	3000	>3000
Oil and grease	mg/L	<10.0	<10.0	<10.0	-	-	-	-
Dissolved oxygen	mg/L	9.40	8.40	8.90	>8	6	3	<3
COD	mg/L	<5.0	<5.0	<5.0	< 25	50	70	> 70
BOD	mg/L	<3.0	<3.0	<3.0	<4	8	20	>20
Nitrite	mg/L	<0.005	<0.005	<0.005	-	-	-	-
Total Phosphorus	mg/L	<0.010	<0.010	<0.010	<0.08	0.2	0.8	>0.8
Nitrate	mg/L	2.49	0.68	1.05	<3	10	20	>20
Total Nitrogen	mg/L	3.31	1.05	1.71	-	-	-	-

Table 4-8 Surface Water Sampling Measurement Parameters, Location and Analysis Results

Parameter	Units	Surface Water Sampling Location (X:37162010/Y:329580) and Results	Water Pollution Control Regulation and Surface Water Quality Regulation Water Quality Classes			
			I	II	III	IV
Temperature	°C	15.20	-	-	-	-
pH	-	7.89	6-9	6-9	6-9	6-9
Dissolved oxygen	mg/L	10.70	>8	6	3	<3
Ammonium Nitrogen	mg/L	<0.02	<0.2	1	2	>2
Nitrite	mg/L	<0.005	-	-	-	-
Nitrate	mg/L	0.30	<3	10	20	>20
Total Phosphorus	mg/L	0.01	<0.08	0.2	0.8	>0.8
Total Nitrogen	mg/L	1.43	-	-	-	-
TSS	mg/L	7.00	-	-	-	-
COD	mg/L	6.45	< 25	50	70	> 70
BOD	mg/L	<3.0	<4	8	20	>20
TKN	mg/L	1.13	<0.5	1.5	5	>5
Fecal Coliform	kob/100 mL	0	≤10	200	2000	> 2000
Total Coliform	kob/100 mL	195	≤100	20000	100000	> 100000
Escherichia coli	kob/100 mL	0	-	-	-	-
TDM	mg/L	342.00	-	-	-	-
Turbidity	NTU	4.96	-	-	-	-
Salinity	‰	0.28	-	-	-	-
Oil and grease	mg/L	2,49	-	-	-	-
Conductivity	mg/L	3,31	<400	1000	3000	>3000

According to groundwater measurement results, water quality class of groundwater sampling location 1 and 3 is Class I in terms of ammonium nitrogen, fecal coliform, total coliform, dissolved oxygen, COD, BOD, total phosphorus and nitrate and Class II in terms of TKN and conductivity.

In addition, water quality class of groundwater sampling location 2 is Class I in terms of ammonium nitrogen, TKN, fecal coliform, total coliform, dissolved oxygen, COD, BOD, total phosphorus and nitrate and Class II in terms of conductivity.

On the other hand, according to surface water measurement results, water quality class of sampling location is Class I in terms of dissolved oxygen, ammonium nitrogen, nitrate, total phosphorus, COD, BOD, fecal coliform and conductivity and Class II in terms of TKN and total coliform.

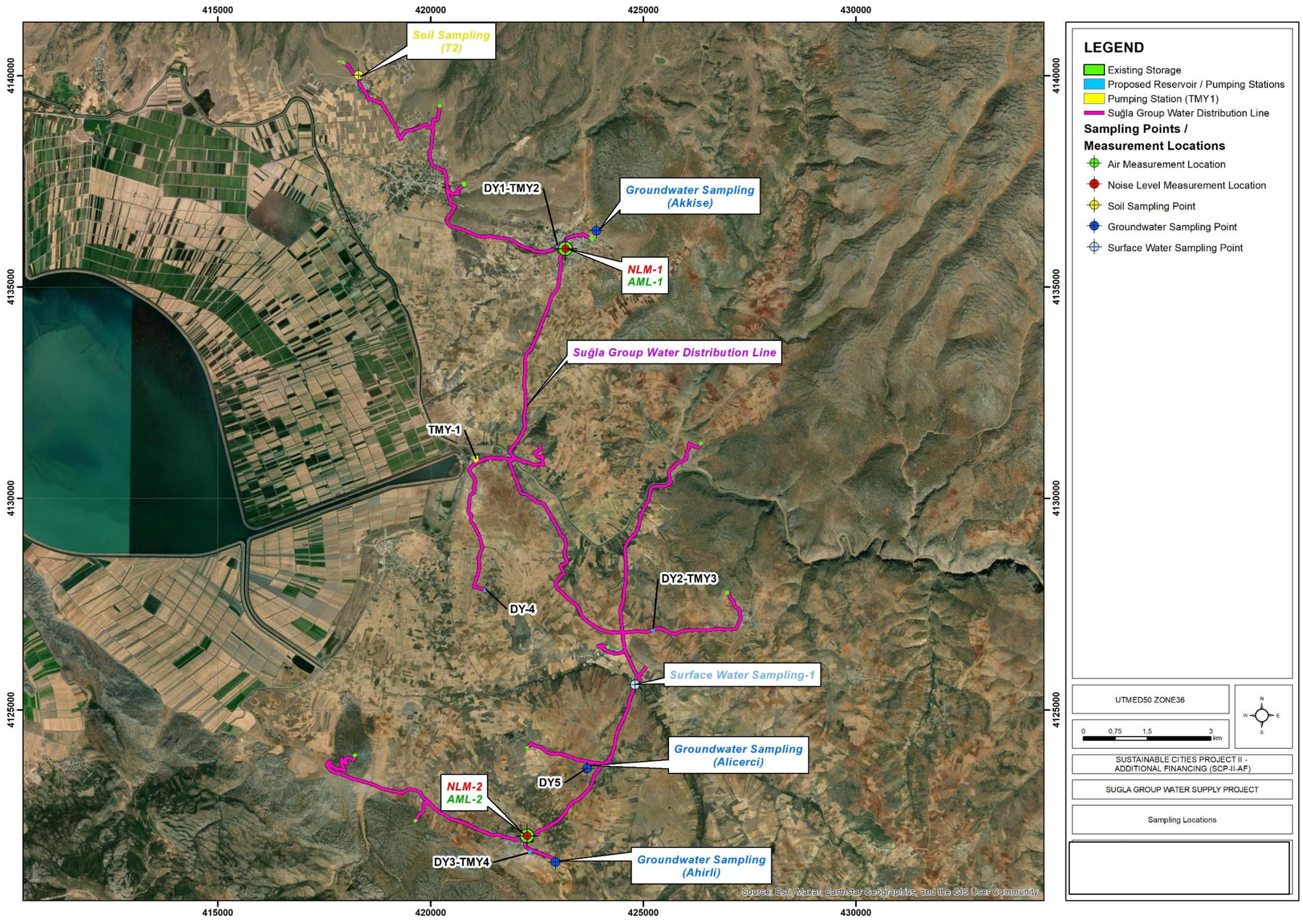


Figure 4-10. Sampling Locations

4.1.6. Soil and Soil Quality

Turkish General Directorate for Rural Services database defines the land use capabilities in eight (8) different classes as summarized in Table 4-9. These classes represent the agricultural potential of the soils. 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, thus can only be used as resting areas or as national parks. Characteristics of each class are summarized in Table 4-9 (*Former Ministry of Agricultural and Rural Services, July 2008*).

Table 4-9. 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 are 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 sogginess 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 unfavorable 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.

(*Former Ministry of Agricultural and Rural Services, July 2008*).

Map of major soil groups and land use capability classes for the project area is represented in Figure 4-11. Water transmission lines will mainly follow cadastral roads, however, the relatively small sections that do not follow cadastral roads, mainly correspond to classes VI and VII.

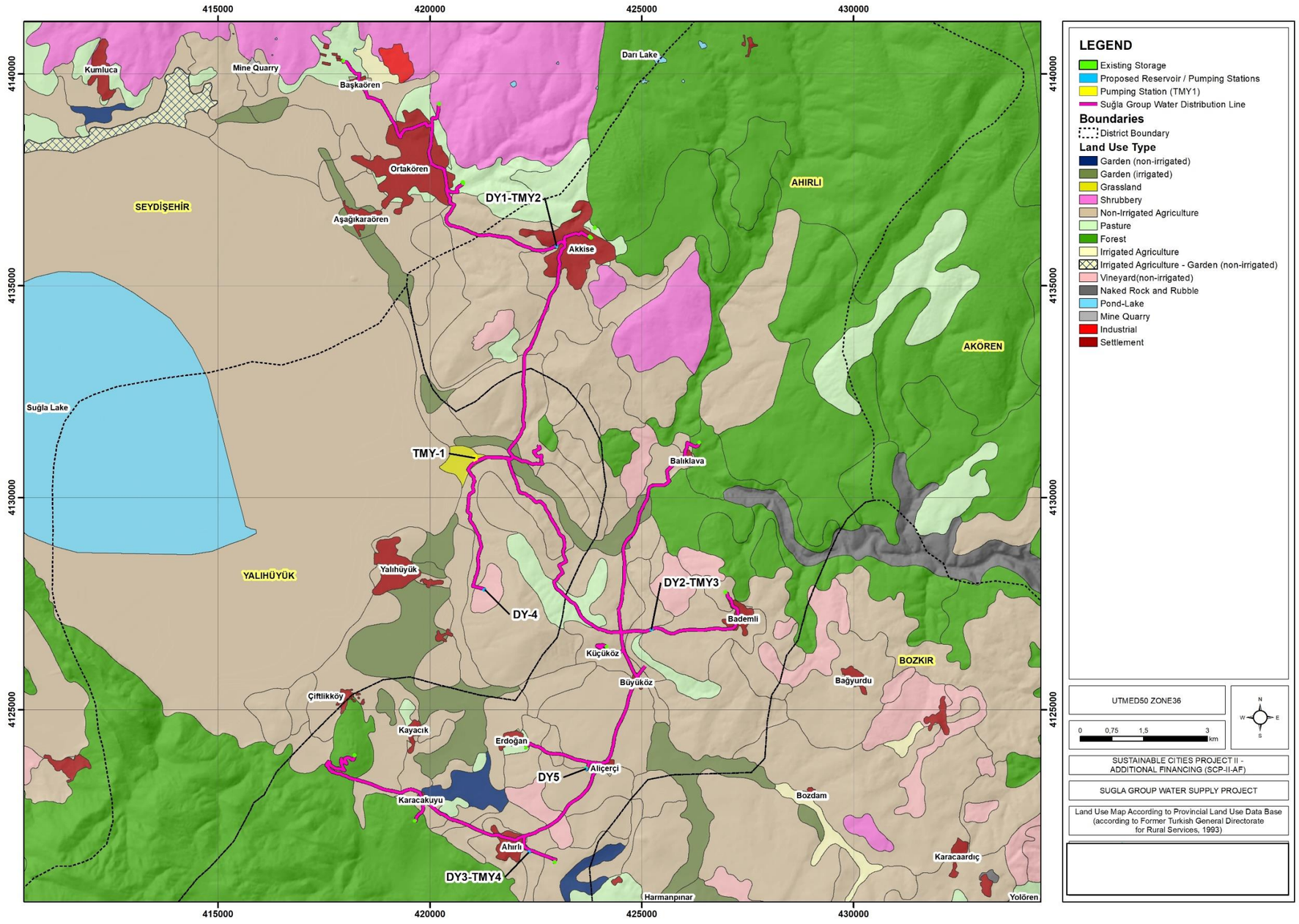


Figure 4-11 Great Soil Groups and Land Use Capability Classes for the Project Area

A soil quality analysis was carried out by ENCON Laboratory on the samples on 24 May 2023. The sample was taken from one location. No impact on the soil environment that could change the chemical properties of the soil is expected within the scope of the Project except accidents and/or leaks. Soil sampling was carried out as an initial situation determination (a baseline) to evaluate the impact of possible accidents and/or leaks that may affect soil environment. Therefore, the location of the soil sampling was chosen from an easily accessible point among the places where construction works would be carried out. The coordinates of the sampling location is 37°15'33.03"North and 32° 7'25.07"East.

To compare the results of the sampling study if there is any soil contamination on the site, the measurements are evaluated according to the Generic Pollutant Limit Values List in Annex-1 of the Regulation on Soil Pollution Control and Point Source Contaminated Lands. The analyses results belong to sampling location are presented in Table 4-10 and the photograph taken during sampling activities is given in Figure 4-12. Also, the sampling locations are represented in Figure 4-12.

Table 4-10 Analysis Results of Soil Sample of Project Area

Parameter	Unit	Limit Values	Soil Sampling Location-1
Antimony (mg/kg)	mg/kg	31	<1.0
Arsenic (mg/kg)	mg/kg	0.4	<1.0
Boron (mg/kg)	mg/kg	-	18.27
Cadmium (mg/kg)	mg/kg	70	<0.5
Chromium (mg/kg)	mg/kg	235	19.75
Copper (mg/kg)	mg/kg	3129	10.74
Lead (mg/kg)	mg/kg	46929	10.84
Mercury (mg/kg)	mg/kg	23	<0.1
Nickel (mg/kg)	mg/kg	1564	<0.5
Silver (mg/kg)	mg/kg	391	<0.5
Zinc (mg/kg)	mg/kg	23464	39.96
Tin	mg/kg	46929	<1.0
Total Petroleum Hydrocarbons (TPH) (mg/kg)	mg/kg	-	<25.0
Total Organic Halogens (TOX)	mg/kg	-	97.4

In evaluating the analysis results (of soil quality), the absorption limit values of the soil through ingestion and skin contact were taken as basis. Concerning the given limit values, all measured values are determined as below the limit values. Considering it is the baseline value of the Project area before the construction activities, it can be evaluated that the baseline soil condition of the Project area has good quality.



Figure 4-12.Photograph Taken During Soil Sampling

4.1.7. Air Quality

In Konya Province, as the closest air quality monitoring stations to the project area, the monthly average concentrations of the parameters PM_{10}, CO, NO_2, NO_x and SO_2 measured at Karatay air quality monitoring station in between January 1st, 2021 and December 30th, 2022 are presented in Table 4-11.

Table 4-11 Air Quality Parameters Measured in Karatay District

Measurement Location: Konya Karatay Station	Average Monthly Concentrations				
	PM_{10} (µg/m³)	SO_2 (µg/m³)	CO (µg/m³)	NO_2 (µg/m³)	NO_X (µg/m³)
January 2021	74.25	14.69	2,188.24	35.21	94.50
February 2021	47.77	14.96	2,100.96	34.98	71.68
March 2021	33.79	10.08	4,276.06	28.73	42.04
April 2021	27.77	5.87	680.44	23.29	28.71
May 2021	28,86	4.83	443.12	20.39	24.97
June 2021	25,21	6.08	359.61	26.03	30.12
July 2021	34,90	7.70	203.53	27.47	31.70
August 2021	38,91	5.06	560.44	34.55	45.44
September 2021	34,23	5.85	561.34	26.02	34.12
October 2021	57,05	11,22	742.66	51.40	85.55
November 2021	122,10	33,13	1,343.56	62.79	132.89
December 2021	138.34	46.27	2,322.10	48.99	131.00
January 2022	98,04	40,21	1469,11	57,16	87,80
February 2022	94,33	35,81	1392,52	54,72	75,56
March 2022	64,03	23,99	967,39	38,62	49,96
April 2022	78,83	10,48	585,14	31,08	39,85
May 2022	38,28	4,13	399,61	25,65	32,77
June 2022	36,03	2,72	292,86	18,32	21,66
July 2022	39,33	2,81	338,94	19,35	23,24

Measurement Location: Konya Karatay Station	Average Monthly Concentrations				
	PM_{10} (µg/m³)	SO_2 (µg/m³)	CO (µg/m³)	NO_2 (µg/m³)	NO_X (µg/m³)
August 2022	46,22	3,99	390,47	21,85	27,32
September 2022	53,35	4,79	519,77	35,70	54,25
October 2022	63,59	15,98	866,09	37,58	59,89
November 2022	127,12	49,76	1838,44	50,12	90,74
December 2022	147,31	50,06	1976,25	65,42	123,33
Limit Value*	125	50	10.000	40	30

Source: https://sim.csb.gov.tr/SERVICES/airquality
** As stipulated by the Regulation on the Assessment and Management of Air Quality*

Moreover, in order to constitute a baseline inventory and to determine air quality in the Project area; 24-hour PM_{10} and $PM_{2.5}$ measurements were conducted by ENCON Laboratory on 26 May, 2023. To determine the location of air quality measurements, sensitive receptors such as schools, mosques, hospitals and municipal centers close to the Project area were determined. During the field studies, the field team visually confirmed the sensitive receptors at the given location and samples were taken from the predetermined measurement points. Sensitive receptors close to the first point are Akkise Atatürk Primary School (303 m), Akkise Fatih Imam Hatip Secondary School (378 m), Akkise Municipality Main Building (166 m) and Akkise Municipality Mosque (181 m) in main building's garden. Sensitive receptors close to the second point are Government House (223 m), Ahirli Atatürk Anatolian High School (326 m), Ahirli Community Health Center (378 m), Konya Ahirli Central Family Health Center (412 m).

The measurement results at AML-1 and AML-2 sampling locations are presented in Table 4-12 with WBG EHS Guideline and Regulation on the Assessment and Management of Air Quality limit values, while photographs taken from the measurement campaign are provided in Figure 4-13. On the other hand, sampling locations are shown in Figure 4-10 and laboratory reports are presented in Annex-3 of this report.

Table 4-12 PM10 and PM2.5 Measurement Results for AML-1 and AML-2 with WBG EHS Guideline and Turkish Regulation Limit Values

Parameter	Averaging Period	WBG EHS Guideline Limit Value in µg/m³	Regulation on the Assessment and Management of Air Quality Limit Value in µg/m³	UTM-ED50-Z35	
				Measurement Results at Coordinates of AML*-1 X:423148/Y:4135643 in µg/m3	Measurement Results at Coordinates of AML*-2 X:422161/Y:4121685 in µg/m3
NO_2	24-Hour	20	40	-	
	10-Minute	500			
PM_{10}	1-Year	20			
	24-Hour	50	50	9.84	12.60
$PM_{2.5}$	1-Year	10			
	24-Hour	25	25**	<6.00	7.67
O_3	8-Hour daily maximum	100	120	-	

According to the Industrial Air Pollution Control Regulation, PM_{10} values should not exceed 50 µg/Nm³ more than 35 times in a year. On the other hand, according to WBG General EHS Guidelines: Air Emissions and Ambient Air Quality PM_{10} and $PM_{2.5}$ values should not exceed 50 µg/Nm³ and 25 µg/Nm³, respectively. Within this regard, PM_{10} and $PM_{2.5}$ baseline measurement results are below both national and WBG General EHS Guidelines ambient air quality limit values for the AML-1 and AML-2.



Figure 4-13 Photographs from Air Quality Measurement Locations

4.1.8. Noise Level

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 aims to ensure that the necessary measures are taken to ensure that the physical and mental health of individuals is not deteriorated due 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.

The operation noise limit values defined in RENC are presented in Table 4-13.

Table 4-13 Environmental Noise Limits Values provided in RENC

Noise Source	Measured Parameter	L_{day} (dBA) (07:00-19:00)	$L_{evening}$ (dBA) (19:00-23:00)	L_{night} (dBA) (23:00-07:00)
Industrial plants, transportation resources	LA_{eq},S_{min}	65	60	55
Workplaces	$LA_{eq\ 63\text{-}250\ Hz}$	Background + 5 dB(A)		Background +3 dB(A)
In case of multiple workplaces	LA_{eq},S_{min}	Background + 7 dB(A)		Background +3 dB(A)
All resources	LC_{max}	100 dB(C)		

WBG General EHS Guidelines

Noise limit levels are described under WBG General EHS Guidelines: Environmental Noise. The noise limit values are based on World Health Organization (WHO) Guidelines for Community Noise. Noise levels defined by WBG General EHS Guidelines are presented in

Table 4-14. WBG EHS Guidelines require that noise levels should not exceed the levels presented in Table 4-14, or result in a maximum increase in background noise levels of 3 dB at the nearest receptor location off-site.

Table 4-14 Noise Level Guidelines of WBG EHS Guidelines

Receptor	One Hour L_{Aeq} (dBA)	
	Daytime 07:00 – 22:00	Nighttime 22:00 – 07:00
Residential, institutional, educational	55	45
Industrial, commercial	70	70

Within the scope of the Project, construction activities will be carried out gradually and in a short period of time. In operation phase, the main source of noise generation is expected to be the pumping stations. For this reason, the noise impacts from the construction activities are expected to be short-term. However, to determine the impact significance, background noise levels should be known. Therefore, a noise level measurement study (NLM-1) was conducted to determine background levels in the Project area, especially around the planned DY1-TMY2 pumping station, by ENCON Laboratory in between 24-27 May 2023. To determine the location of noise measurements, sensitive receptors such as schools, mosques, hospitals and municipal centers close to the Project area were determined. During the field studies, the field team visually confirmed the sensitive receptors at the given location and samples were taken from the predetermined measurement points. Sensitive receptors close to the first point are Akkise Atatürk Primary School (303 m), Akkise Fatih Imam Hatip Secondary School (378 m), Akkise Municipality Main Building (166 m) and Akkise Municipality Mosque (181 m) in main building's garden. Sensitive receptors close to the second point are Government House (233 m), Ahırlı Atatürk Anatolian High School (326 m), Ahırlı Community Health Center (378 m), Konya Ahurlı Central Family Health Center (412 m).

The measurement results at NML-1 and NML-2 are presented in Table 4-15. In addition to that, sampling locations are same with the air quality measurement locations presented in *Figure 4-14* and laboratory reports are presented in Annex-3 of this report.

Table 4-15 Background Noise Level Measurement Results for NML-1 and NML-2

Measurement Point	Type of the Receptor	Measurement Date	Measurement Coordinates (UTM-ED50-Z35)	Measurement Results and Limit Values (Leq) (dBA)				
				RENC			WBG General EHS Guideline	
				Daytime (07.00-19.00)	Evening (19.00-23.00)	Night (23.00-07.00)	Daytime (07.00-22.00)	Nighttime (22.00-07.00)
NML-1	Residential /	24-25 May 2023	423148/4135643	56.4	43.3	43.7	55.5	43.7
NML-1	Residential /	25-26 May 2023	423148/4135643	48.2	45.3	45.0	47.7	45.3
NML-2	Residential /	25-26 May 2023	422161/4121685	48.3	47.1	47.1	48.1	47.1
NML-2	Residential /	26-27 May 2023	422161/4121685	48.3	47.2	47.3	48.1	47.3
Limit Values				65	60	55	55	45

Since there are residential areas, mosques, schools and health centers rather close to the NML-1 and NML-2 measurement points (within a 1 km radius); the category of the measurement points are evaluated as Category 1 (residential, institutional and educational areas) according to the Noise Level Guidelines of the WBG EHS Guidelines. The measurement points that are close to the transportation nodes, industrial facilities and residential areas are categorized as Category 1 (the areas where commercial buildings, various modes of transportation and noise sensitive receivers exist together) according to RENC. Limit values were chosen according to these categories.

As can be seen from Table 4-15, the background noise levels for the measurement location are below the limit values defined in RENC for daytime, evening and nighttime evening. On the other hand, the daytime measurement result of NML-1 and the nighttime measurement result of NML-2 are slightly above the limit values defined in WBG General EHS Guideline: Environmental Noise. Based on these measurement results,

noise impact should not exceed the levels presented in the WBG General EHS Guidelines, or background noise levels should not be exceeded more than 3 dB at the nearest receptor location off-site during the construction and operation phases of the Project.



Figure 4-14 Photograph from Noise Level Measurement Point

4.1.9. Waste Management

Pursuant to the Environmental Law No. 2872, it is prohibited to directly or indirectly deliver, store, transport, dispose of all kinds of waste and residues to the receiving environment, in violation of the standards and methods determined in the relevant regulation.

Solid wastes from all districts of Konya Province are disposed of at Konya Solid Waste Landfill and Thermal Incineration Facility, where also the wastes of the project will. The landfill has an environmental permit and is operated by Konya Metropolitan Municipality. According to the most recent Provincial Environmental Status Report (2021), 536,393 tons of solid waste were disposed of, with an average of 1470 tons per day in the year 2021 to the facility. The construction of the recycling facility with a capacity of 350,400 tons/year at the Konya Solid Waste Landfill was completed in 2019 and became operational (Konya Provincial Environmental Status Report for the Year 2021, 2022).

The number of other solid waste disposal facilities in Konya as of 2019 is given in Table 4-16.

Table 4-16 Number of solid waste processing plants in Konya Province as of 2019

Solid Waste Disposal Facility (Municipal)	Number in Konya Province
Licensed Packaging Waste Collection Separation Facility and Recycling Facility	46
Hazardous Waste Recovery Facility	15
Waste Oil Recovery Facility	1
Vegetable Waste Oil Intermediate Storage Facility	2
Number of End-of-Life Tire Recovery Facilities	2
Medical Waste Sterilization Facility	1
Non-Hazardous Waste Recovery Facility	85
Waste Electrical and Electronic Goods Processing Facility	2
Mining Waste Disposal-Storage Category B	1

4.1.10. Landscape

Within the scope of the Project, the construction of drinking water transmission line will be carried out in both rural and urban areas. Transmission lines will mainly follow cadastral roads, however, some parts of the lines will pass through lands that are under the responsibilities of public administration or pasture lands. Figure 4-15 shows photos taken at the Project Area during site visit conducted by Sub-Consultant Team on January 22nd, 2025.



Figure 4-15 Photos Taken at the Project Area During Site Visit

4.2. Ecology and Biodiversity

For this project, the biological environment was investigated, including habitat structures of the project area, protected areas and key biodiversity areas (KBA). For this purpose, both desktop studies and field surveys were carried out. The related literature and previous studies have been reviewed and the general biological characteristics of the region have been revealed. The field visit was conducted with the Sub-Consultant team on January 22nd, 2025 to the project area within the scope of biodiversity studies. The studies were carried out to cover the project area of influence that is 250 m around the project area (see Figure 4-16)



Figure 4-16 Biological Field Studies in and around the Project Area

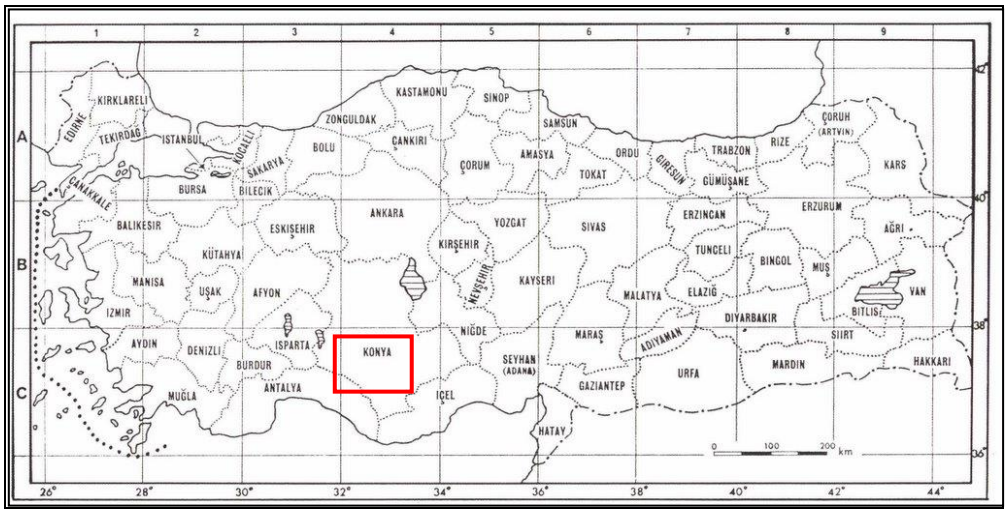
Following field survey, flora species were identified based on Türkiye e-flora website (*https://www.turkiyeflorasi.org.tr*), presence of suspected endemic species was searched through the "Red Book of Plants of Türkiye" prepared by Prof. Dr. Tuna Ekim et al. and the website (*https://bizimbitkiler.org.tr*), which contains up-to-date information. In addition, within the scope of desktop studies, up to date literature including thesis and articles relevant to the region were cited.

Fauna studies have been carried out in and around the Project area and in the habitats suitable for feeding, shelter and breeding areas. Terrestrial fauna survey was conducted taking into account the existence of suitable habitats, traces and signs of animals (nests, nest holes, excrement and footprints, feeding signs, etc.). In addition, previously conducted fauna studies regarding the region were also cited and interviews with the local people were assessed. During the fauna survey, no activities such as hunting-collecting-killing were conducted while identifying the species in and in the vicinity of the project area. Geographical coordinates and the elevations where species surveyed during the field studies were recorded by GPS.

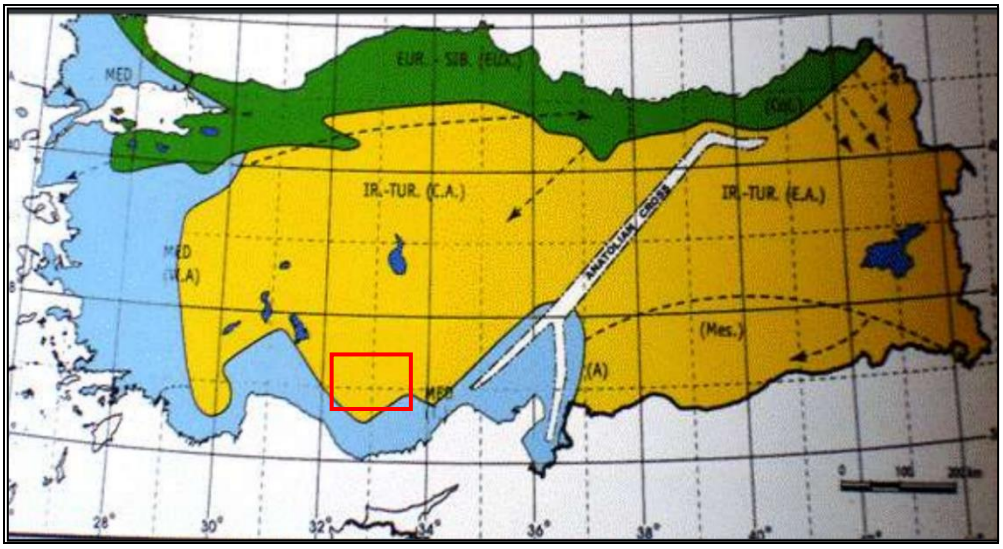
Data from the literature on biotopes, protected areas, endemic species, and endangered species and wildlife habitats in and around the project area were collected and evaluated. According to national and international sources, the danger categories of flora and fauna species were assessed.

Vegetation Types of the Terrestrial Ecosystem

The Project area is in the transition zone of the Mediterranean and Central Anatolian regions, in other words, between the Mediterranean and Irano-Turanian Phytogeographical Region, as seen in Figure 4-17. The Project area is located in the C4 grid in the grid square system of the flora of Türkiye. Since the area is in a high-altitude region (about 1400 m altitude), it shows the characteristics of both Mediterranean and Subaerial climates. In the Project area, typical summer dry and winter precipitation dominate the region under the influence of the Mediterranean climate. The dry period effect is shown in the region from April to October. Vegetation characteristics of the district are diverse due to its location in the climate transition zone.



a. Project Location in the Grid Square System (*Davis 1988)*



b. Phytogeographical Regions Map in Türkiye *(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 Edinburg]

EUR.-SİB.(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 4-17 Bioecological Location of the Project Area

Agriculture and breeding are mostly carried out around the project area. The water transmission line will be constructed within the road. For this reason, no natural vegetation has been detected in the area where the line will pass.

Flora species belonging to steppe and ruderal vegetation and mixed forest areas formed by juniper species were observed in field studies.

As a result of field and desk studies, it was determined that the project area has ruderal vegetation that has been exposed to anthropogenic effects.

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 4-17 with their explanations:

Table 4-17 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 4-18.

Table 4-18 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 4-19. 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 4-19 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)	
X	Extinct	EX	Extinct
W	Extinct in the Wild	EW	Extinct in the Wild
R	Critically Endangered	CR	Critically Endangered
N	Endangered	EN	Endangered
U	Vulnerable	VU	Vulnerable
R	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

4.2.1. Flora

Steppe and ruderal vegetation were identified in the project area. For this reason, possible flora species of the region 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 4-20.

No endemic or threatened flora species were identified/detected in and around the Project area. In addition, there are no protected flora species as per the BERN and CITES conventions.

Table 4-20 Flora Species in and around the Project Area[3]

FAMILY	TAXON	ENDEMISM	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
ASTERACEAE	*Achillea wilhelmsii C. KOCH*	-	-	-	-	-	-
	Tanacetum armenum (DC.) Sch.Bip.	-	-	-	-	-	-
	Medicago sativa L. subsp. sativa L.	-	LC	-	-	-	-
BERBERIDACEAE	*Berberis crataegina DC.*	-	-	-	-	-	-
BRASSICACEAE	*Alyssum murale Waldst. & Kit. subsp. murale var. murale*	-	-	-	-	-	-
	Cardaria draba (L.) Desv. subsp. chalepensis (L.) Q. E. Schulz.	-	-	-	-	-	-
	Thlaspi perfoliatum L	-	-	-	-	-	-
CARYOPHYLLACEAE	*Minuartia hirsuta (Bieb.) Hand-Mazz. subsp falcata (Gris.) Mattf.*	-	-	-	-	-	-
	Minuartia juniperina (L.) Maire. et. Petitm.	-	-	-	-	-	-
	Holosteum umbellatum L. var. glutinosum (Bieb.) Gay.	-	-	-	-	-	-
	Dianthus zonatus Fenzl var. zonatus	-	-	-	-	-	-
	Telephium imperati L. subsp. orientale (Boiss.) Nyman.	-	-	-	-	-	-
	Silene spergulifolia (Desf.) Bieb	-	-	-	-	-	-
	Silene dichotoma Ehrh. subsp. dichotoma	-	-	-	-	-	-
CAMPANULACEAE	*Campanula cymbalaria Sibth. & Sm.*	-	-	-	-	-	-
CUPRESSACEAE	*Juniperus foetidissima Willd.*	-	LC	-	-	-	-
EUPHORBIACEAE	*Euphorbia myrsinites L.*	-	-	-	-	-	-
	Euphorbia kotschyana L.	-	-	-	-	-	-
FABACEAE	*Astragalus angustifolius Lam. subsp. angustifolius var. angustifolius*	-	-	-	-	-	-
	Astragalus lydius Boiss.	-	-	-	-	-	-

[3] TUBIVES. Turkish Plants Data Service. Retrieved November 2021, from http://www.tubives.com/
Türkiye e-flora website (https://www.Türkiyeflorasi.org.tr)
Turkish Plants Lists (www.bizimbitkiler.org.tr)
Aslan, İsmail. Flora of Alacadağ (Seydişehir) and its surroundings. MS thesis. Selcuk University Institute of Science and Technology, 2006.
IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. https://www.iucnredlist.org

FAMILY	TAXON	ENDEMISM	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
	Medicago sativa L. subsp. sativa L.	-	LC	-	-	-	-
	Onobrychis oxyodonta Boiss.	-	-	-	-	-	-
	Trifolium speciosum WILLD.	-	-	-	-	-	-
	Trifolium spumosum L.	-	-	-	-	-	-
FAGACEAE	*Quercus cerris L.*	-	LC	-	-	-	-
	Quercus pubescens L.	-	LC	-	-	-	-
GERANIACEAE	*Geranium tuberosum subsp. tuberosum*	-	-	-	-	-	-
GUTTIFERAE	*Hypericum perforatum L.*	-	LC	-	-	-	-
IRIDACEAE	*Crocus chrysanthus (Herb.) Herb.*	-	-	-	-	-	-
	Iris stenophilla Hussken. et. Siehe ex. Baxer. subsp. stenophylla	-	-	-	-	-	-
LABIATAE	*Acinos rotundifolius PERS.*	-	-	-	-	-	-
LAMIACEAE	*Phlomis pungens Wild. var. hirta Velen.*	-	-	-	-	-	-
	Ajuga chamaepitys (L.) Schreber subsp. glareosa P. H. Davis	-	-	-	-	-	-
	Ornithogalum oligophyllum E.D. Clarke	-	-	-	-	-	-
	Ornithogalum montanum Cyr.	-	-	-	-	-	-
	Muscari neglectum Guss.	-	-	-	-	-	-
	Gagea villosa (Bieb.) Duby var. villosa	-	-	-	-	-	-
	Pinus nigra J. F. Arnorld. subsp. nigra var. caramanica	-	LC	-	-	-	-
POACEAE	*Bromus tectorum L. subsp. tectorum*	-	-	-	-	-	-
	Poa bulbosa L.	-	-	-	-	-	-
	Poa nemoralis L.	-	-	-	-	-	-
POLYGONACEAE	*Polygonum cognatum Meissn*	-		-	-	-	-
	Rumex acetosella L.	-	LC	-	-	-	-
PLANTAGINACEAE	*Veronica multifida L.*	-	-	-	-	-	-
	Veronica thymoides L.	-	-	-	-	-	-
RUBIACEAE	*Galium verum L. subsp. verum*	-	LC	-	-	-	-

FAMILY	TAXON	ENDEMISM	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
	Galium peplidifolium Boiss.	-	-	-	-	-	-
ROSACEAE	*Malus sylvestris Mill. subsp. mitis (Wallr.) Mansf*	-	DD	-	-	-	-
	Rosa canina L.	-	LC	-	-	-	-
	Rosa pulveranta Bieb.	-	-	-	-	-	-
	Prunus divaricata Ledep. subsp. divaricata	-	LC	-	-	-	-
	Crataegus monogyna Jacq. subsp.monogyna	-	LC	-	-	-	-
	Crataegus orientalis Pallas ex. Bieb. var. orientalis	-	-	-	-	-	-
	Pyrus elaeagnifolia Pall.subsp. kotschyana (Boiss.) Browicz	-	-	-	-	-	-
SALICACEAE	*Populus tremula L.*	-	LC	-	-	-	-
	Salix babylonica L.	-	DD	-	-	-	-
VITACEAE	*Vitis vinifera L.*	-	LC	-	-	-	-

4.2.2. Fauna

The fauna lists prepared via the field and desk studies carried out in and around the project area and the interviews made with the local people are given under the following headings.

Fish

In the field studies on the project route, it has been determined that the creeks that the line passes through are dry, and there is no flowing creek. Therefore, no fish species were determined during field studies.

The transmission line coincides with the Beysehir Irrigation Canal and will be crossed with a suspended pipe. No fish species were encountered during the field studies in this channel, and it was stated that carp, sea bass and tench species are seen in the channel during the meeting with the local people.

The species given in Table 4-21 are likely to be found in the project area and surrounding creeks and canals. These species are not only found in these areas but also exist in other regions in Türkiye. Among the detected species, there are no endemic or protected species in the region. *Cyprinus carpio* (Sazan) is considered as vulnerable (VU) according to the IUCN Red List, but populations found in inland waters of Türkiye consist of cultural forms (see Figure 4-18).

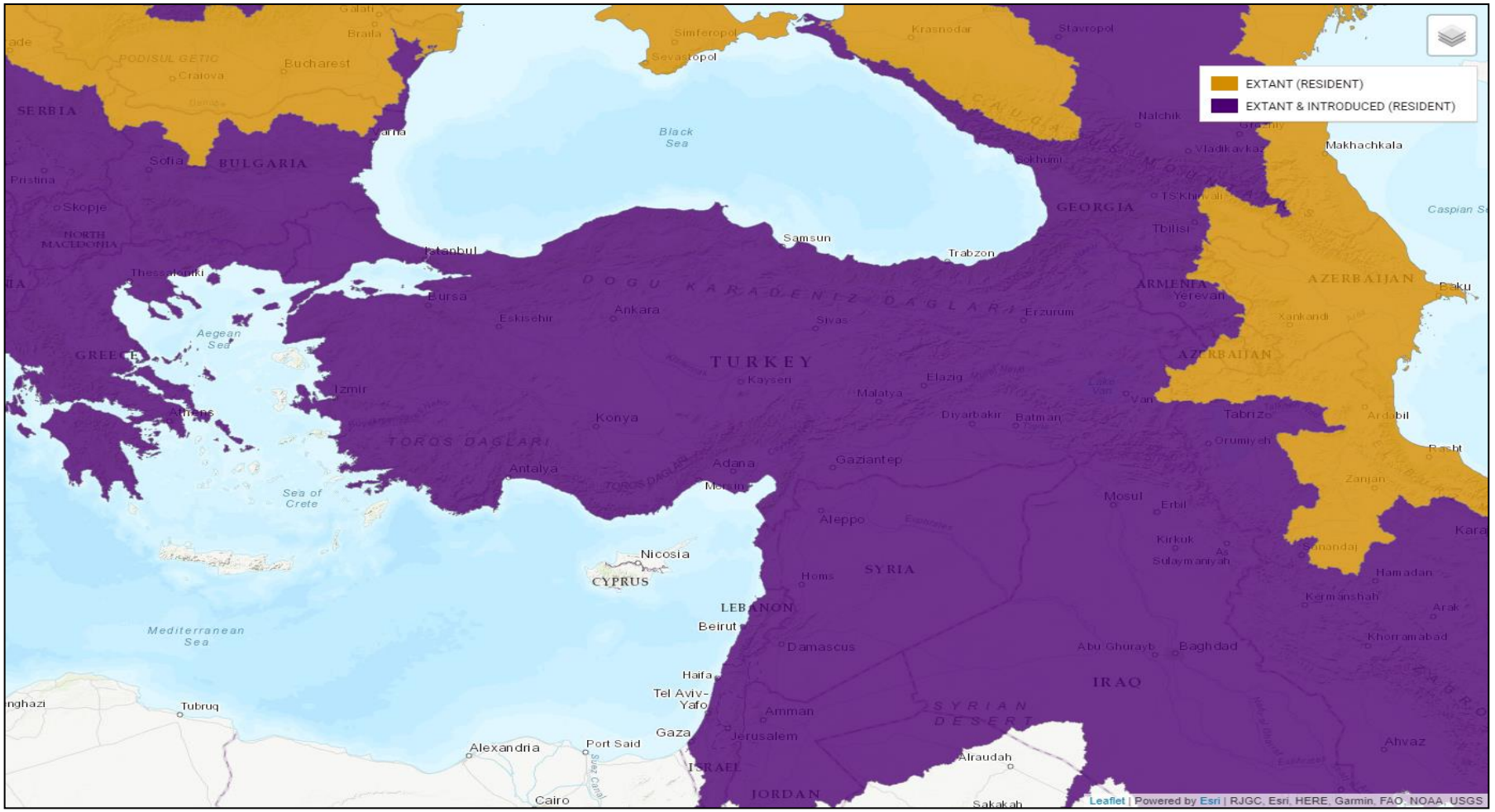


Figure 4-18 Geographic range map of Cyprinus carpio (Source: www.iucnredlist.org)

Table 4-21. Possible Fish Species in and around the Project Area

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	IUCN
FISH					
CYPRINIFORMES	CYPRINIDAE	*Capoeta damascina*	Siraz	Levantine Scraper	LC
		Cyprinus carpio	Sazan	Carp	VU
	MORONIDAE	*Dicentrarchus labrax*	Levrek	European Sea Bass	LC
	ACTINOPTERYGII	*Tinca tinca*	Kadife Balığı	Tench	LC
	LEUCISCIDAE	*Pseudophoxinus battalgili*	Yag Baligi	Tuz Lake Spring Minnow	LC
	SALMONIDAE	*Salmo trutta*	Alabalik	Brown Trout	LC

Amphibians and Reptilians

Reptile and amphibian species live in riparian habitats. These species have determined the permanent and seasonal stream edges as their habitat. The amphibian and reptile species observed in the project area during field studies and likely to be found by literature studies are shown in Table 4-22.

Among the detected species, only tortoise (*Testudo graeca*) is in the category VU (Vulnerable) according to IUCN. However, the tortoise is a widely spread reptile species found in every region except Türkiye's Eastern Black Sea region. Other reptile species are not in any threatened category; according to the IUCN categories, species are LC (Least Concern) and widespread in Türkiye. There are no endemic or critical amphibian and reptile species.

Table 4-22 Reptile and Amphibian Species in and around the Project Area[4]

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
AMFIBIA							
Anura	Bufonidae	*Pseudepidalea viridis*	Gece Kurbagası	Green Toad	LC	Annex-II	-
Anura	Bufonidae	*Bufo bufo*	Sigilli Kurbaga	Common Toad	LC	Annex-III	-
REPTILIA							
Testudines	Testudinidae	*Testudo graeca*	Tosbaga	Spur-thighed Tortoise	VU	Annex-II	APP-2
Squamata	Amphisbaenidae	*Blanus strauchi*	Kor kertenkele	Turkish Worm Lizard	LC	Annex-III	-
Squamata	Agamidae	*Laudakia stellio*	Dikenli Keler	Hardim	LC	Annex-II	-
Squamata	Lacertidae	*Ophisops elegans*	Tarla Kertenkelesi	wester sanke-eyed lizard	LC	Annex-II	-
Squamata	Scincidae	*Ablepharus budaki*	Budak Ketenkelesi	-	LC	Annex-III	-
Squamata	Colubridae	*Eirenis modestus*	Uysal Yilan	Ring-headed dwarf snake	LC	Annex-III	-
Squamata	Colubridae	*Dolichophis jugularis*	Kara Yilan	-	LC	Annex-III	-
Squamata	Colubridae	*Platyceps collaris*	Toros Yilani	Collared Dwarf Racer	LC	Annex-III	-

[4] *IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. https://www.iucnredlist.org*
The Amphibians and Reptiles Monitoring & Photography Society in Türkiye (AdaMerOs Herptil Türkiye) (http://www.turkherptil.org/)
Olgun, Kurtulus Kumlutas, Yusuf and Baran İbrahim. Türkiye Amphibians and Reptiles. TUBITAK, 2012

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
Squamata	Colubridae	*Natrix natrix*	Yarisucul Yilan	Grass Snake	LC	Annex-III	-

Birds

It is determined that the project area is not on any main migration road. The area is also not used as nesting and wintering areas during migration. In addition, there are no suitable habitats for migratory bird species in and around the project area.

Bird species determined during site survey and literature research in the project area are presented in Table 4-23. Except for the Turtle Dove (*Streptopelia turtur*), other bird species detected are in the LC category according to IUCN. Although Turtle Dove (*Streptopelia turtur*) is in the VU (Vulnerable) category, it is a species that breeds in all regions of Türkiye, as seen in the IUCN map in Figure 4-19. There are no endemic or critical bird species within the Project area.



Source: https://www.iucnredlist.org/

Figure 4-19 Geographic Range Map of Turtle Dove (*Streptopelia turtur)*

Table 4-23 Bird Species in and around the Project Area[5]

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	ITES
AVES							
Ciconiiformes	Ciconiidae	*Ciconia nigra*	Kara Leylek	Black Stork	LC	Annex-II	PP-II
Ciconiiformes	Ciconiidae	*Ciconia ciconia*	Leylek	White Stork	LC	Annex-II	PP-II
Accipitriformes	Accipitridae	*Milvus migrans*	Kara Caylak	Black Kite	LC	Annex-II	PP-II
Accipitriformes	Accipitridae	*Accipiter nisus*	Atmaca	Sparrowhawk	LC	Annex-II	PP-II
Accipitriformes	Accipitridae	*Buteo buteo*	Sahin	Buzzard	LC	Annex-II	PP-II
Accipitriformes	Accipitridae	*Buteo rufinus*	Kızıl Sahin	Long-Legged Buzzard	LC	Annex-II	PP-II
Accipitriformes	Accipitridae	*Aquila chrysaetos*	Kaya Kartalı	Golden Eagle	LC	Annex-II	PP-II
Falconiformes	Falconidae	*Falco tinnunculus*	Kerkenez	Kestrel	LC	Annex-II	PP-II
Galliformes	Phasianidae	*Alectoris chukar*	Kınalı Keklik	Chukar	LC	Annex-III	
Columbiformes	Columbidae	*Columba livia*	Kaya Guvercini	Rock Dove	LC	Annex-III	
Columbiformes	Columbidae	*Streptopelia turtur*	Uveyik	Turtle Dove	VU	Annex-III	
Cuculiformes	Cuculidae	*Cuculus canorus*	Guguk	Cuckoo	LC	Annex-III	
Caprimulgifores	Apodidae	*Apus apus*	Ebabil	Swift	LC	Annex-III	
Coraciiformes	Meropidae	*Merops apiaster*	Arıkusu	Bee-Eater	LC	Annex-II	
Bucerotiformes	Upupidae	*Upupa epops*	İbibik	Eurasian Hoopoe	LC	Annex-II	
Passeriformes	Alaudidae	*Melanocorypha calandra*	Bogmaklı Toygar	Calandra Lark	LC	Annex-II	
Passeriformes	Alaudidae	*Melanocorypha bimaculata*	Kucuk Bogmaklı Toygar	Bimaculated Lark	LC	Annex-II	
Passeriformes	Alaudidae	*Galerida cristata*	Tepeli Toygar	Crested Lark	LC	Annex-III	
Passeriformes	Alaudidae	*Alauda arvensis*	Tarlakusu	Skylark	LC	Annex-III	
Passeriformes	Alaudidae	*Eremophila alpestris*	Kulaklı Toygar	Shore Lark	LC	Annex-II	
Passeriformes	Hirundinidae	*Hirundo rustica*	Kır Kırlangıcı	Swallow	LC	Annex-II	
Passeriformes	Motacillidae	*Anthus campestris*	Kır İncirkusu	Tawny Pipit	LC	Annex-II	
Passeriformes	Motacillidae	*Motacilla alba*	Ak Kuyruksallayan	Pied Wagtail	LC	Annex-II	
Passeriformes	Troglodytidae	*Troglodytes troglodytes*	Cıtkusu	Wren	LC	Annex-II	
Passeriformes	Muscicapidae	*Erithacus rubecula*	Kızılgerdan	Robin	LC	Annex-II	
Passeriformes	Muscicapidae	*Luscinia megarhynchos*	Bulbul	Nightingale	LC	Annex-II	
Passeriformes	Muscicapidae	*Phoenicurus ochruros*	Kara Kızılkuyruk	Black Redstart	LC	Annex-II	
Passeriformes	Muscicapidae	*Phoenicurus phoenicurus*	Kızılkuyruk	Redstart	LC	Annex-II	
Passeriformes	Muscicapidae	*Saxicola rubetra*	Cayır Taskusu	Whinchat	LC	Annex-II	
Passeriformes	Muscicapidae	*Oenanthe isabellina*	Boz Kuyrukkakan	Isabellina Wheatear	LC	Annex-II	

[5] *IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. https://www.iucnredlist.org*
Anonymous Birds of Türkiye: TRAKUS (https://www.trakus.org/)
Kiziroglu, İ., 2009. The Pocket Book for Birds of Türkiye, ISBN: 975-7460-01-X, Ankamat Printing House, Ankara, 564

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	ITES
AVES							
Passeriformes	Muscicapidae	*Oenanthe hispanica*	Kara Kulaklı Kuyrukkakan	Black-Eared Wheatear	LC	Annex-II	
Passeriformes	Turdidae	*Turdus merula*	Karatavuk	Blackbird	LC	Annex-III	
Passeriformes	Sylviidae	*Phylloscopus collybita*	Cıvgın	Chiffchaff	LC	Annex-II	
Passeriformes	Muscicapidae	*Muscicapa striata*	Benekli Sinekkapan	Spotted flycatcher	LC	Annex-II	
Passeriformes	Paridae	*Parus ater*	Cam bastankarası	Coal Tit	LC	Annex-II	
Passeriformes	Paridae	*Parus major*	Buyuk Bastankara	Great Tit	LC	Annex-II	
Passeriformes	Sittidae	*Sitta europaea*	Sıvacı	Nuthatch	LC	Annex-II	
Passeriformes	Sittidae	*Sitta krueperi*	Anadolu Sıvacısı	Krüper`s Nuthatch	LC	Annex-II	
Passeriformes	Laniidae	*Lanius collurio*	Kızıl Sırtlı Orumcekkusu	Red-Backed Shrike	LC	Annex-II	
Passeriformes	Corvidae	*Garrulus glandarius*	Alakarga	Jay	LC	–	
Passeriformes	Corvidae	*Pica pica*	Saksagan	Magpie	LC	-	
Passeriformes	Corvidae	*Corvus monedula*	Kucuk Karga	Jackdaw	LC	-	
Passeriformes	Corvidae	*Corvus frugilegus*	Ekin Kargası	Rook	LC	-	
Passeriformes	Corvidae	*Corvus cornix*	Les Kargası	Hooded Crow	LC	-	
Passeriformes	Corvidae	*Corvus corax*	Kuzgun	Raven	LC	Annex-III	
Passeriformes	Sturnidae	*Sturnus vulgaris*	Sıgırcık	Starling	LC	-	
Passeriformes	Passeridae	*Passer domesticus*	Serce	House Sparrow	LC	-	
Passeriformes	Passeridae	*Passer montanus*	Agac Sercesi	Tree Sparrow	LC	Annex-III	
Passeriformes	Fringillidae	*Carduelis carduelis*	Saka	Goldfinch	LC	Annex-II	
Passeriformes	Fringillidae	*Carduelis cannabina*	Ketenkusu	Linnet	LC	Annex-II	
Passeriformes	Emberizidae	*Emberiza cia*	Kaya Kirazkusu	Rock Bunting	LC	Annex-II	
Passeriformes	Emberizidae	*Miliaria calandra*	Tarla Kirazkusu	Corn Bunting	LC	Annex-III	

Mammals

The mammalian species of the region, like other fauna groups, are widely distributed species with high adaptation to the environment. Mammal species expected to be seen in the project area are presented in Table 4-24. There are no endemic or critical mammal species.

Table 4-24 Mammal Species in and around the Project Area[6]

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
MAMMALIA							
Insectivora	Erinaceidae	*Erinaceus concolor*	Kirpi	Hedgehog	LC	-	-
Insectivora	Soricidae	*Crocidura suaveolens*	Beyazdisli Bocekcil	Lesser Shrew	LC	Annex-II	-
Chiroptera	Rhinolophidae	*Rhinolophus hipposideros*	Nalburunlu Kucukyarasa	Lesser Horseshoe Bat	LC	Annex-II	-
Chiroptera	Vespertilionidae	*Pipistrellus pipistrellus*	Cuce Yarasa	Common Pipistrelle	LC	Annex-III	-
Chiroptera	Vespertilionidae	*Myotis myotis*	Farekulaklı Buyuk Yarasa	Greater Mouse-eared Bat	LC	Annex-II	-
Chiroptera	Vespertilionidae	*Myotis blythii*	Farekulaklı Kucuk Yarasa	Lesser Mouse-eared Myotis	LC	Annex-II	-
Lagomorpha	Leporidae	*Lepus europaeus*	Yabani Tavsan	European Hare	LC	Annex-III	-
Rodentia	Gliridae	*Dryomys nitedula*	Orman Yediuyuru	Forest Dormouse	LC	Annex-III	-
Rodentia	Sciuridae	*Sciurus anomalus*	Anadolu Sincabı	Caucasian Squirrel	LC	Annex-II	-
Rodentia	Spalacidae	*Nannospalax xanthodon*	Nehringi Kor Faresi	Nehring's Blind Mole Rat	DD	-	-
Rodentia	Muridae	*Apodemus slyvaticus*	Adi Tarla Faresi	Long-tailed Field Mouse	LC	-	-
Rodentia	Muridae	*Apodemus flavicollis*	Sarı Boyunlu Orman Faresi	Yellow-necked Field Mouse	LC	-	-
Rodentia	Muridae	*Rattus rattus*	Ev Sicani	Black Rate	LC	-	-
Rodentia	Muridae	*Mus musculus*	Ev Faresi	House Mouse	LC	-	-
Carnivora	Canidae	*Vulpes vulpes*	Tilki	Red Fox	LC	-	APP-3
Carnivora	Canidae	*Canis lupus*	Kurt	Grey Wolf	LC	Annex-II	-
Carnivora	Mustelidae	*Mustela nivalis*	Gelincik	Least Weasel	LC	Annex-III	-
Carnivora	Mustelidae	*Meles meles*	Porsuk	Eurasian Badger	LC	Annex-III	-
Carnivora	Mustelidae	*Martes foinea*	Kaya Sansari	Stone Marten	LC	Annex-III	APP-3
Artiodactyla	Suidae	*Sus scrofa*	Yaban Domuzu	Wild Boar	LC	Annex-III	-

4.2.3. Protected Areas

To identify and evaluate the protected areas in and around the project area, desktop studies and literature research were carried out using the databases of the relevant institutions within the scope of the Project. For this purpose, the sensitive area list in Annex 5 of the EIA Regulation was used as a reference. This list covers areas that need to be protected by international conventions that Türkiye is a contracting party and nationally declared protected areas.

Primary data sources utilized within the scope of the desktop studies, but not limited to, are listed below:

- Database of Ministry of Culture and Tourism, General Directorate of Cultural Heritage and Museums (https://kvmgm.ktb.gov.tr/),

[6] *IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. https://www.iucnredlist.org*
Anonymous Mammalia of Türkiye: TRAMEM (https://www.tramem.org/)

- Database of Ministry of Agricultural and Forestry, General Directorate of Nature Conservation and National Parks (https://www.tarimorman.gov.tr/DKMP),
- Türkiye National Geographic Information Systems, National Geographic Information Platform (https://www.atlas.gov.tr/),
- Map of Prohibited and Open Hunting Areas in Konya Province for 2022-2023 (https://avbisresim.tarimorman.gov.tr/AVBIS/AvlakHaritalari/42.jpg).

Protected Areas in accordance with National Legislation

Areas required to be protected as per the Turkish legislation defined under Annex 5 (Sensitive Regions) of the EIA Regulation are listed in the following items. The evaluations related to the indicated areas are presented therein.

National Parks, Nature Parks, Nature Monuments and Nature Conservation Areas are defined in Articles 2 and 3 of the National Parks Law.

- There are four Natural Parks in Konya Province: Kocakoru Forest Kugulu, Akyokus and Yakamanastir Natural Parks. There are no Natural Parks in and around the project area. Kugulu Natural Park is located 18.7 km northwest of the project area.
- There is one National Park in Konya Province. It is Beysehir Lake and is located 46.7 km northwest of the project area.
- There are five Nature Monuments in Konya Province; the closest ones to the project area are Fosil Ardic Natural Monument, which is about 40 km to the east and the Aspen Nature Monument, which is about 40 km west.

Wildlife Protection Areas, Wildlife Development Areas (WDAs) and Wild Animal Nestling Areas are determined by the Land Hunting Law.

Map of prohibited and open hunting areas for years 2022-2023, prepared by the Ministry of Agricultural and Forestry, General Directorate of Nature Conservation and National Parks, is presented in Figure 4-24.

Alanya Cevizli Gidengelmez WDA is located about 11.5 km southwest, Akseki and Ibradi Uzumdere WDAs are located approximately 27 km southwest, Gundogmus WDA is located approximately 37 km south and Bozdag WDA is located about 92 km northeast of the project area (see Figure 4-25). There are various hunting areas in the province (see Figure 4-24).

Areas defined as Cultural Property, Natural Property, Protected Site and Protected Area according to Law on Protection of Cultural and Natural Properties No. 2863, published in the Official Gazette dated 23.07.1983 and numbered 18113, Article 3, Paragraph 1, Clause (a) (Definitions); Sub-clauses 1, 2, 3 and 5; and areas identified and registered in the same Law and amendments.

Areas defined in Regulation on the Assessment and Management of Air Quality

According to the 7th Article of Regulation on the Assessment and Management of Air Quality, zones and sub-zones for air quality identification are listed in Annex-1 of Memorandum 2013/37. With the relevant circular, Türkiye is divided into various regions and sub-regions. With this distinction, the MoEUCC tried to determine the contamination profile of the provinces. The list in Annex-III of the circular is divided into two groups according to the pollution profile of provinces substances: "high pollution potential cities" and "low contamination potential cities." Pollution profiles of provinces were determined by using the 2012-2013 winter season air quality data and air quality bulletins received from air quality monitoring stations connected to the national air quality monitoring network. According to this, the Konya Province is in the list of "high contamination potential."

Areas identified and declared as Special Environmental Protection Areas (SEPA) by the Cabinet of Ministers in accordance with the 9th Article of Environment Law

There is no Special Environmental Protection Areas (SEPA) in and around the Project Area.

Areas designated in accordance with the Regulation of the Wetland Conservation

There are two RAMSAR areas, Meke Maar and Kizoren Pothole, in Konya Province. There is neither any wetland area protected under RAMSAR Convention nor wetland with national importance and with local significance in and around the project area.

Agricultural Areas: Agricultural development areas, irrigated areas, potentially irrigated areas, areas with land use capability class of I, II, III, and IV, rainfed agricultural lands classified as I and II, and specific product plantations areas

Areas defined in Pasture Law

According to the Land Use map given in Figure 4-1, a portion of the the transmission line passes through the pasture lands. There is no formal/informal user for the pasture areas to be used within the scope of the Project. Therefore, there will be no local people that will experience income loss due to the Project.

Forest Areas within the scope of Forest Law

According to the Land Use map given in Figure 4-1, a portion of the transmission line passes through the forest areas. There is no formal/informal user for the forest areas to be used within the scope of the Project. Therefore, there will be no local people that will experience income loss due to the Project.

Other Protected/Restricted Areas

In addition to the information presented above, the areas listed below (also listed in Annex 5 of the EIA Regulation) do not exist in the project area:

- Areas defined in the 17th, 18th, 19th, and 20th Articles in the Water Pollution Control Regulation,
- Areas subject to construction ban in accordance with the Coastal Law,
- Areas designated in accordance with the Law on the Vaccination of Pesticides and Improvement of Olive Cultivation,
- Areas subjected to construction ban and areas of which their present characteristics should be protected according to Approved Environment Plans (areas of which their natural characteristics should be protected, biogenetic reserve areas, geothermal areas, etc.),
- Aquaculture Production and Breeding Sites within the scope of Aquaculture Law,
- Lakes, rivers, groundwater operation sites,
- Areas important for endemic species that are endangered or potentially endangered or important for scientific research, biosphere reserve, biotopes, biogenetic reserve areas, areas have unique characteristics for geologic and geomorphologic formations.

Protected Areas in accordance with International Conventions

Areas required to be protected in accordance with the international conventions to which Türkiye is a party and defined under Annex 5 (Sensitive Regions) of the EIA Regulation are listed in the following items, and the evaluations related to the indicated areas are presented therein.

Other Protected/Restricted Areas

There are no areas within the context of below mentioned protected/restricted areas:

- Cultural, historical, and natural areas that the Ministry of Culture protects under Cultural Heritage and Natural Heritage status according to the 1st and 2nd articles of the Convention for the Protection of the World's Cultural and Natural Heritage,
- Protected areas in accordance with the Convention for the Protection of Wetlands with International Importance as Particularly Water Birds Living Environment (RAMSAR Convention),
- European Landscape Contract.

Internationally Recognized Areas of High Biodiversity Value within the Region of the Project Area

The map showing the Key Biodiversity Areas in the Project area or its immediate surroundings can be seen in Figure 4-20. Türkiye's KBAs have been identified on a national scale by Doga Dernegi (the Nature Society of Türkiye) in collaboration with the Ministry of Agriculture and Forestry, Birdlife International and Royal Society for the Protection of Birds. The project area is located within Geyik Mountains Key Biodiversity Area (KBA).

Important Plant Areas (IPAs) are globally important sites for wild plants and threatened habitats. IPAs are natural or semi-natural areas containing affluent populations of rare, endangered and/or endemic plant species and/or have extraordinarily rich and/or valuable vegetation in terms of botany.

About 200 meters of the 55.5 km transmission line is in the Geyik Mountains KBA/IPA, as shown in Figure 4-20.

The Geyik Mountains are mountain ranges extending in the northwest-southeast direction on the Taseli Plateau east of Antalya Province. The mountain ranges, which cover an area of approximately 251,601 ha, constitute a border between the provinces of Konya, Karaman and Antalya.

As shown in **Figure 4-20**, there is no national protected area in or around the Project area.

There are 184 Important Bird Areas (IBAs) in Türkiye, according to the BirdLife International Data Zone. The map presented in **Figure 4-21** that the nearest IBA area to the project area is Akseki and Ibradi Forests, which is about 7 km west of the project area.

The Alliance for Zero Extinction (AZE), established in 2004 and comprising 88 biodiversity conservation Non-Governmental Organizations (NGOs), is dedicated to identifying and safeguarding all KBAs, effectively holding the entire global population of at least one Critically Endangered or Endangered species. In Türkiye, there are three AZE sites that have been determined. The closest one is Güllük Mountains; about 132.5 km southwest of the project area (see Figure 4-23). Since Güllük Mountains AZE is quite far from the project area, it will not be affected by the Project activities.

The Ramsar Convention is a convention that aims to protect wetlands, which are the habitat of waterfowl of international importance. In Türkiye, 14 wetlands have been declared as Ramsar areas. There are two RAMSAR areas, Meke Maar and Kizoren Pothole, in Konya Province. There is neither any wetland area

protected under RAMSAR Convention nor wetland with national importance and with local significance in and around the Project Area.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites are places of importance to cultural or natural heritage as described in the UNESCO World Heritage Convention, established in 1972. Türkiye accepted the convention on 16 March 1983, making its historical sites eligible for inclusion on the list. As of 2021, there are nineteen World Heritage Sites in Türkiye, including seventeen cultural and two mixed sites. There is no protected area per this convention in and around the Project Area.

Man and the Biosphere Programme (MAB) is an intergovernmental scientific program launched in 1971 by UNESCO. It aims to establish a scientific basis for improving relationships between people and their environments. There is no protected area per this program in and around the Project Area.

Geyik Mountains KBA has *Abies cilicica ssp. isauria, Cedrus libani, Pinus nigra ssp. pallasiana, Juniperus sp., Quercus coccifera* forests, maquis, farmlands, high mountain steppes and meadows and plant communities on limestone cliffs. Forest vegetation consists of coniferous and deciduous trees up to 1600-1700 meters high. Cedar (Cedrus libani) forests around Salamut Plateau are remarkable. In the regions above the forest boundary, there are high mountain meadows, Mediterranean mountain steppes, rocky areas, limestone cliffs and flora communities unique to them. KBA covers an area of 251,911 ha within Antalya, Konya, and Karaman cities.

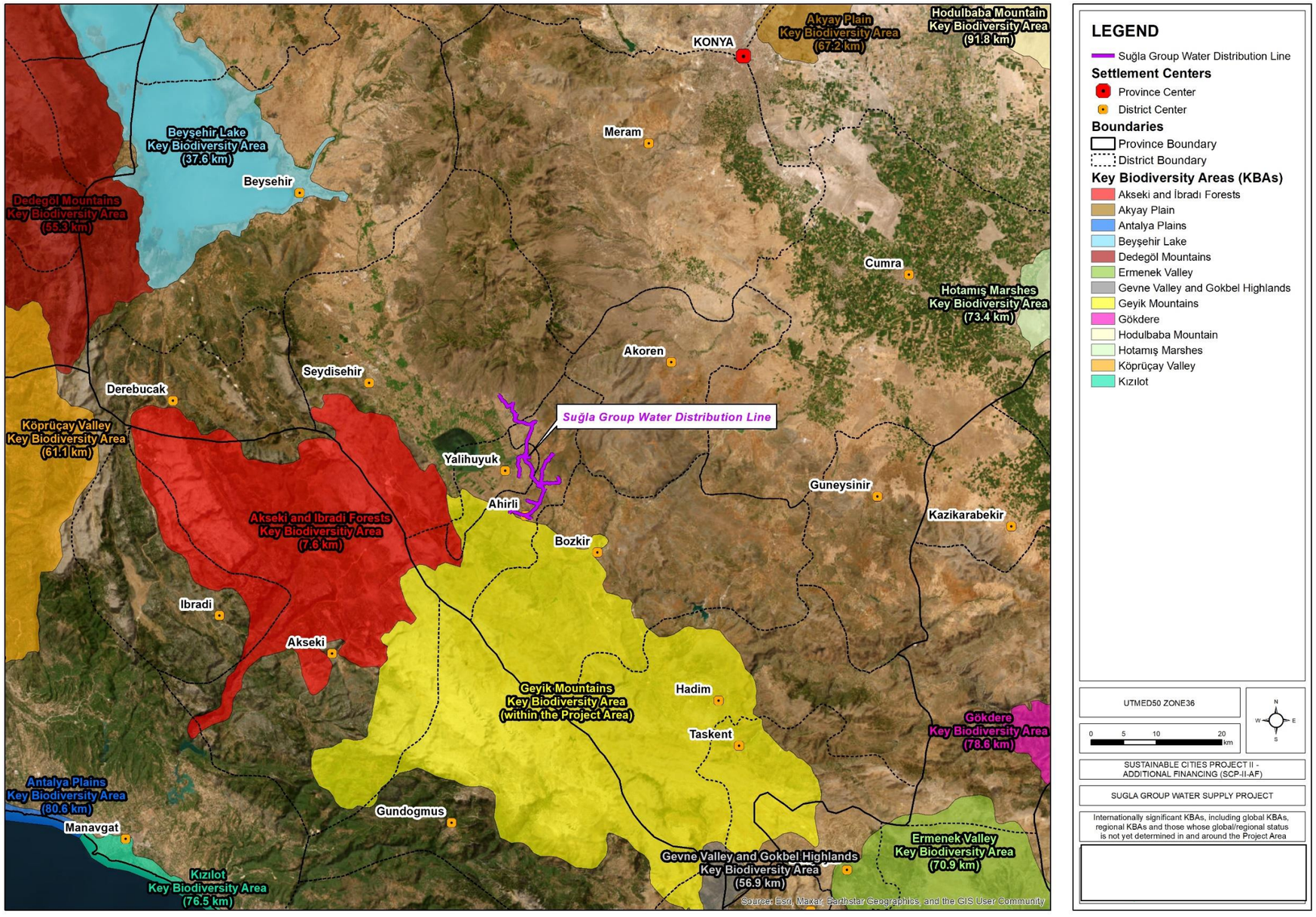
Biodiversity elements triggering KBA are; *Allium goekyigiti, Allium karaca, Allium koyuncui, Aristolochia lycica, Colchicum balansa, Colchicum heldreichi, Fritillaria whittalli, Hyacinthella venust, Iris pamphylic, Iris purpureobractea, Lathyrus tauricol, Poa davisii, Poa pseudobulbos, Tulipa cinnabarin, Tulipa karamanic, Polyommatus sertavulensi, Lyciasalamandra atif, Anatololacerta danford, Lacerta pamphylic, Capra aegagru, Dryomys lanige, Spermophilus taurensi*.

Fieldwork conducted by sub-consultant team in and around the project area was carried out and supported by literature studies and the habitat characteristics and flora-fauna species of the project area were determined.. Before the fieldwork, it was determined that the project area is located in the KBA with desk studies, and the presence of the species that triggered the KBA and the habitats where they could be found was researched during fieldwork.

As a result of the field studies, it is determined that about 200 meters of the 58.5 km transmission line remained within the Geyik Mountains KBA/IPA. It is determined that this 200-meter line is currently a forest road and is a modified habitat. It was determined that there are no species that trigger KBA in this area.

The project area has anthropogenic effects and is a modified area. In summary, as a result of field and desk studies conducted in and around the Project Area, it was determined that the Project Area does not have Critical Habitat.

.



LEGEND

- Suğla Group Water Distribution Line

Settlement Centers

- Province Center
- District Center

Boundaries

- Province Boundary
- District Boundary

Key Biodiversity Areas (KBAs)

- Akseki and İbradı Forests
- Akyay Plain
- Antalya Plains
- Beyşehir Lake
- Dedegöl Mountains
- Ermenek Valley
- Gevne Valley and Gokbel Highlands
- Geyik Mountains
- Gökdere
- Hodulbaba Mountain
- Hotamış Marshes
- Köprüçay Valley
- Kızılot

UTMED50 ZONE36

0 5 10 20 km

N W E S

SUSTAINABLE CITIES PROJECT II - ADDITIONAL FINANCING (SCP-II-AF)

SUGLA GROUP WATER SUPPLY PROJECT

Internationally significant KBAs, including global KBAs, regional KBAs and those whose global/regional status is not yet determined in and around the Project Area

Figure 4-20 Key Biodiversity Areas in and around the Project Area

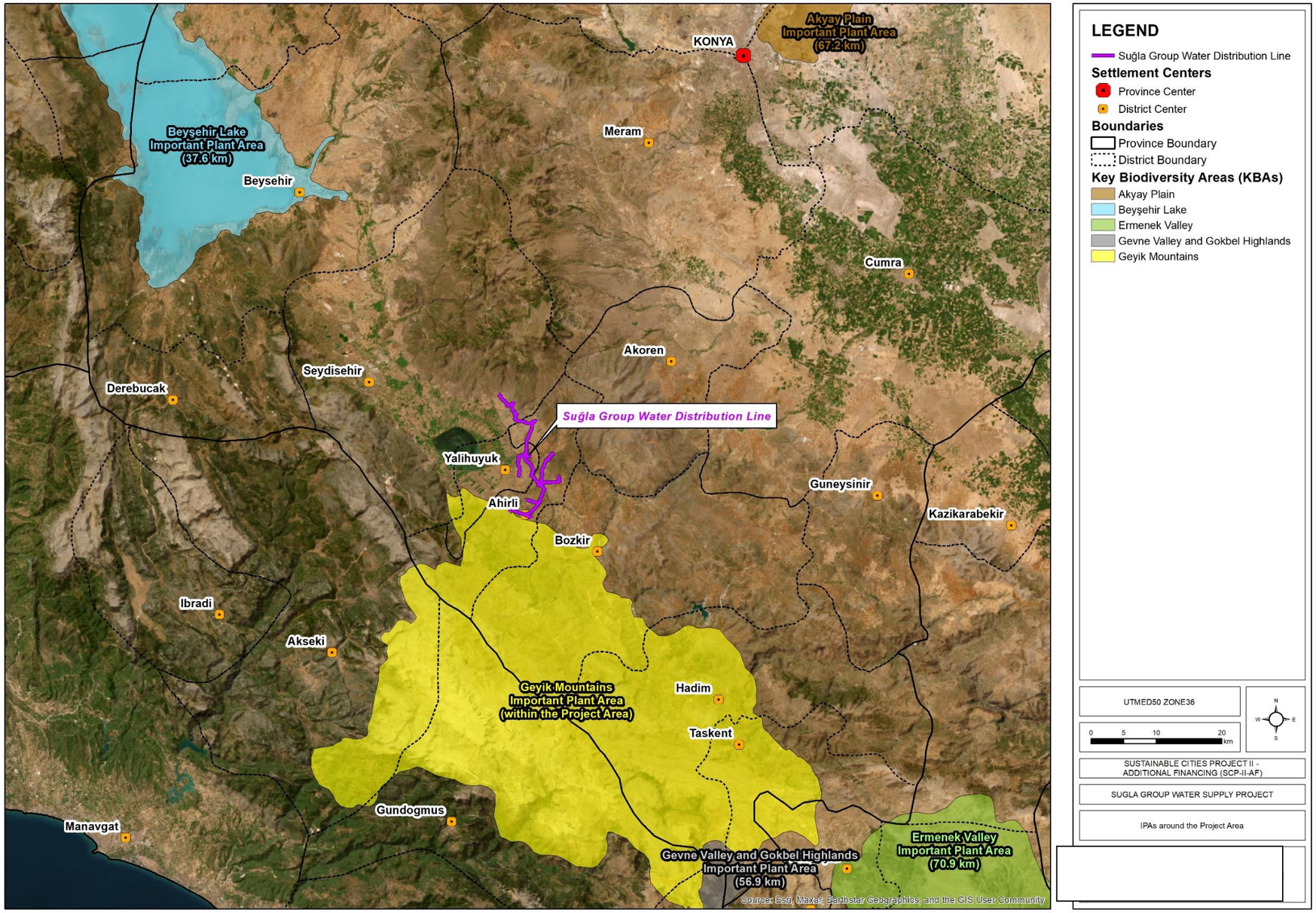


Figure 4-21. Important Plant Areas in and around the Project Area

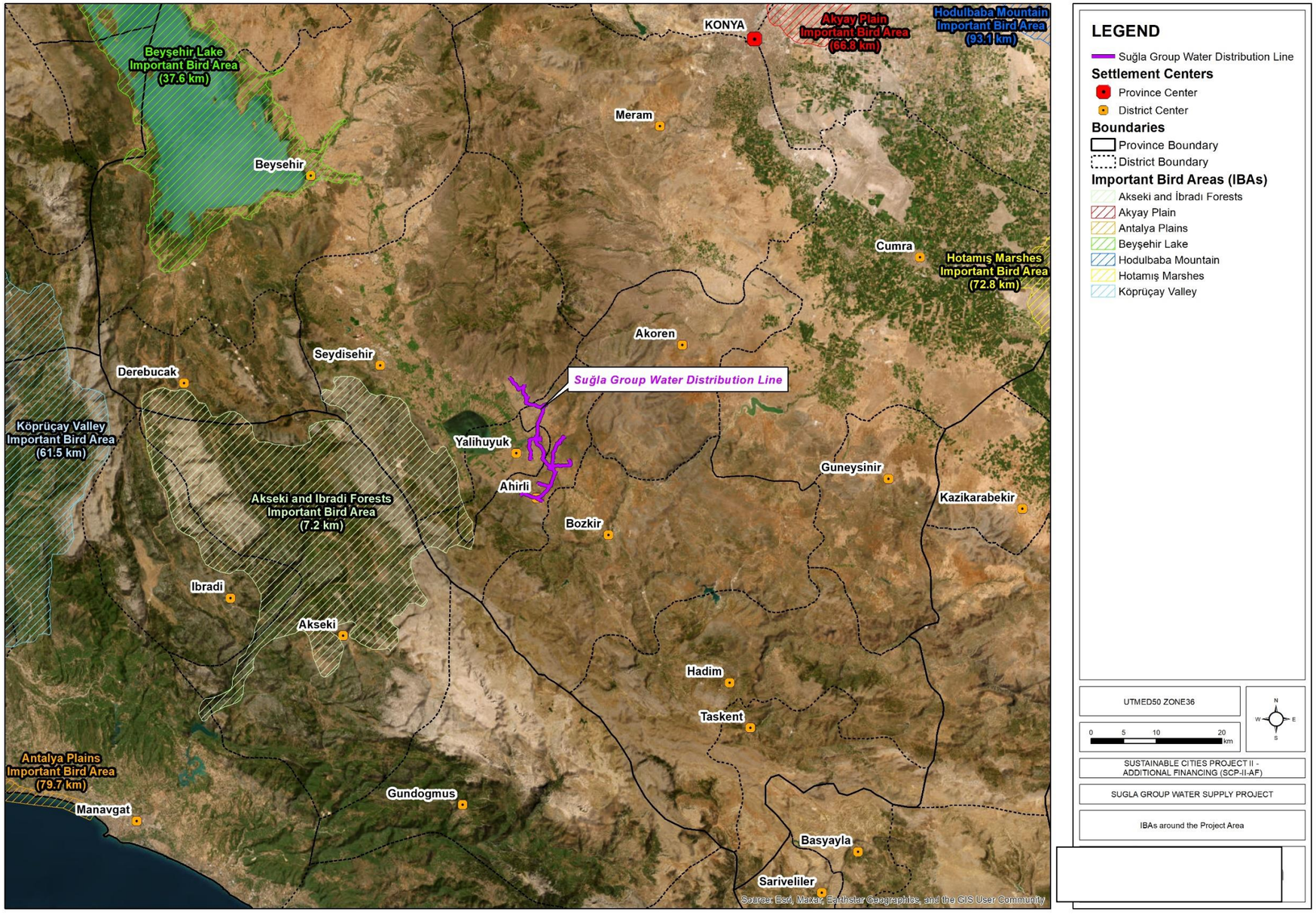


Figure 4-22. Important Bird Areas in and around the Project Area

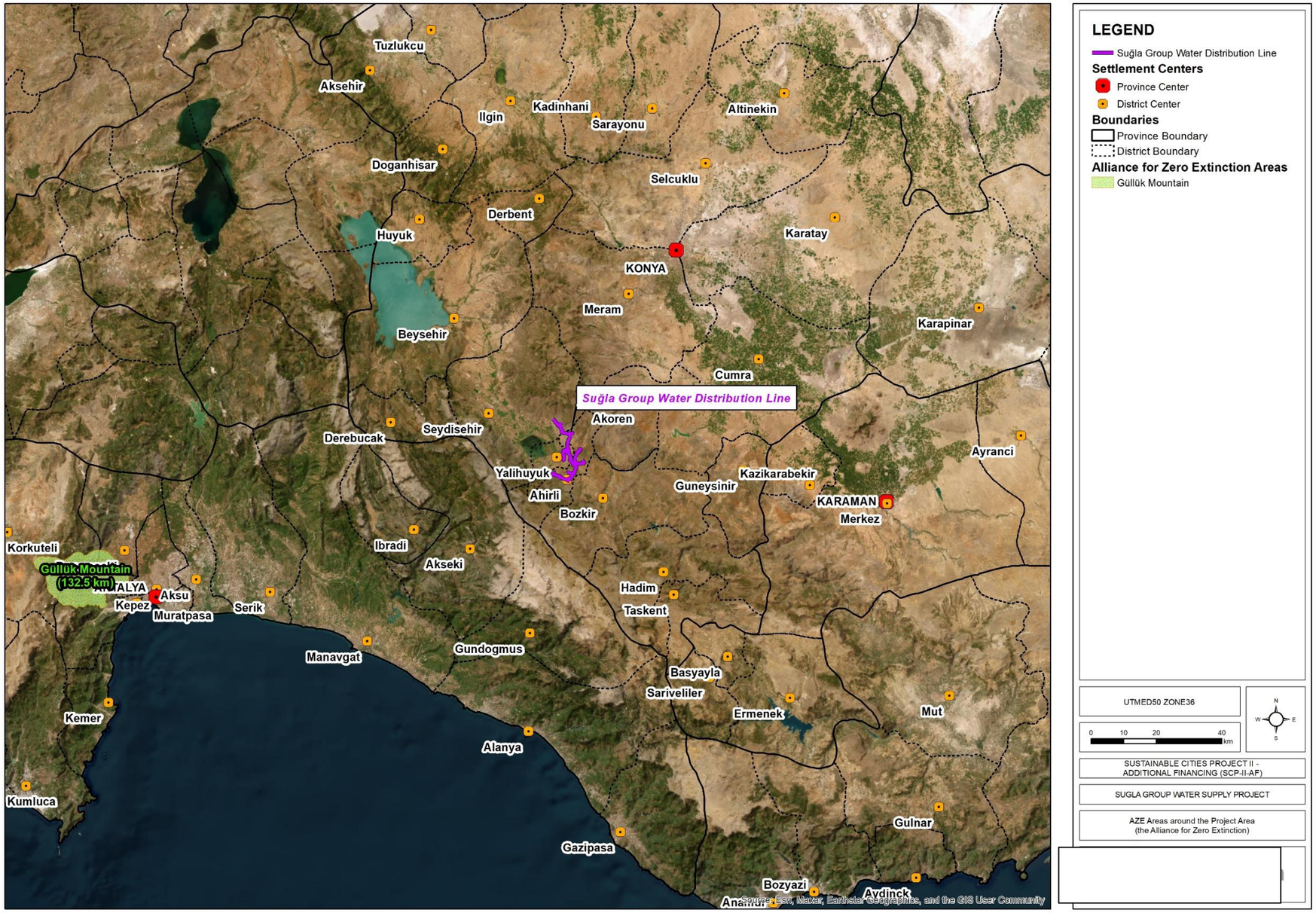


Figure 4-23. AZE Areas around the Project Area

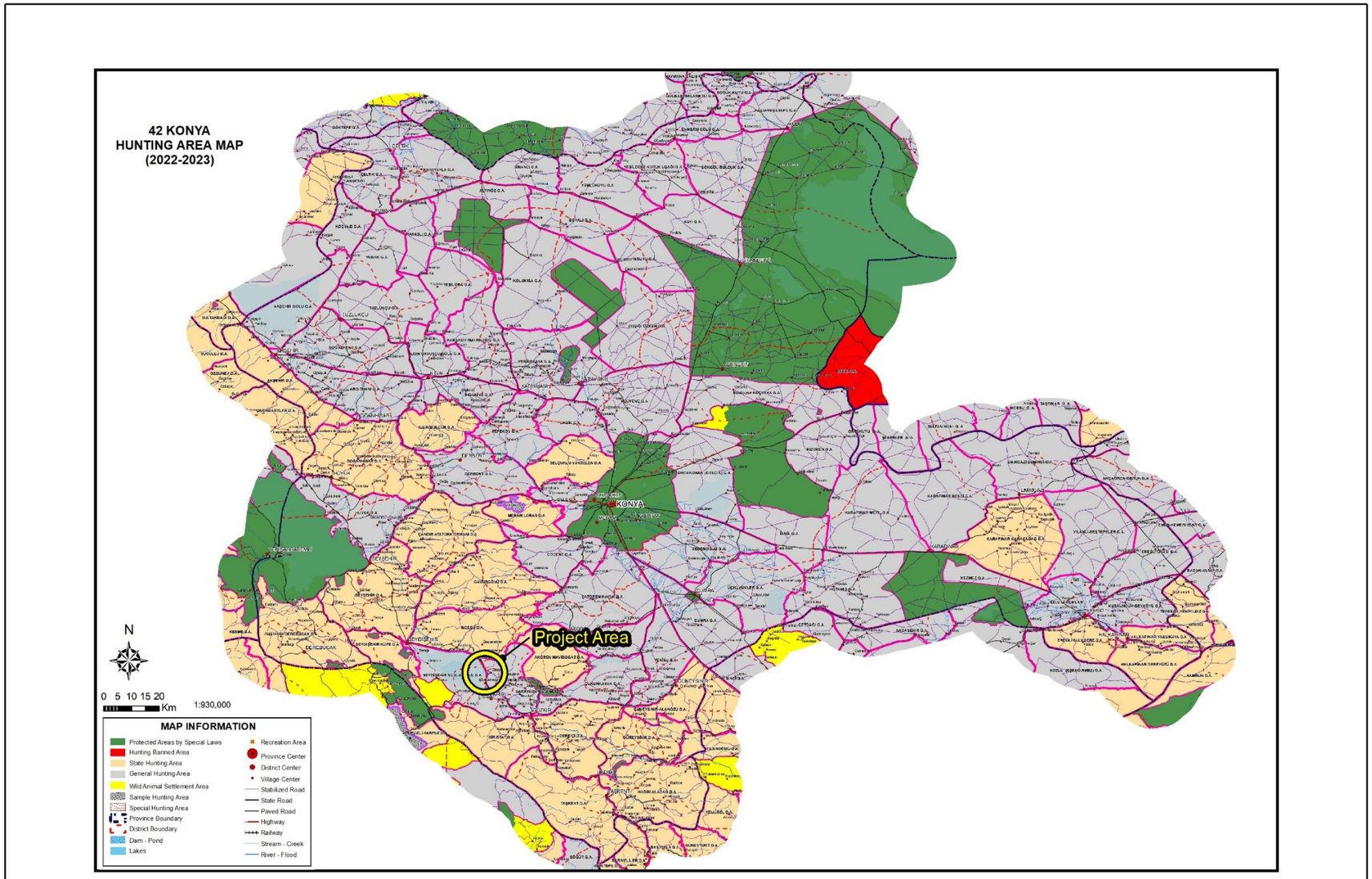


Figure 4-24 Prohibited and Open Hunting Areas in Konya (2022-2023)

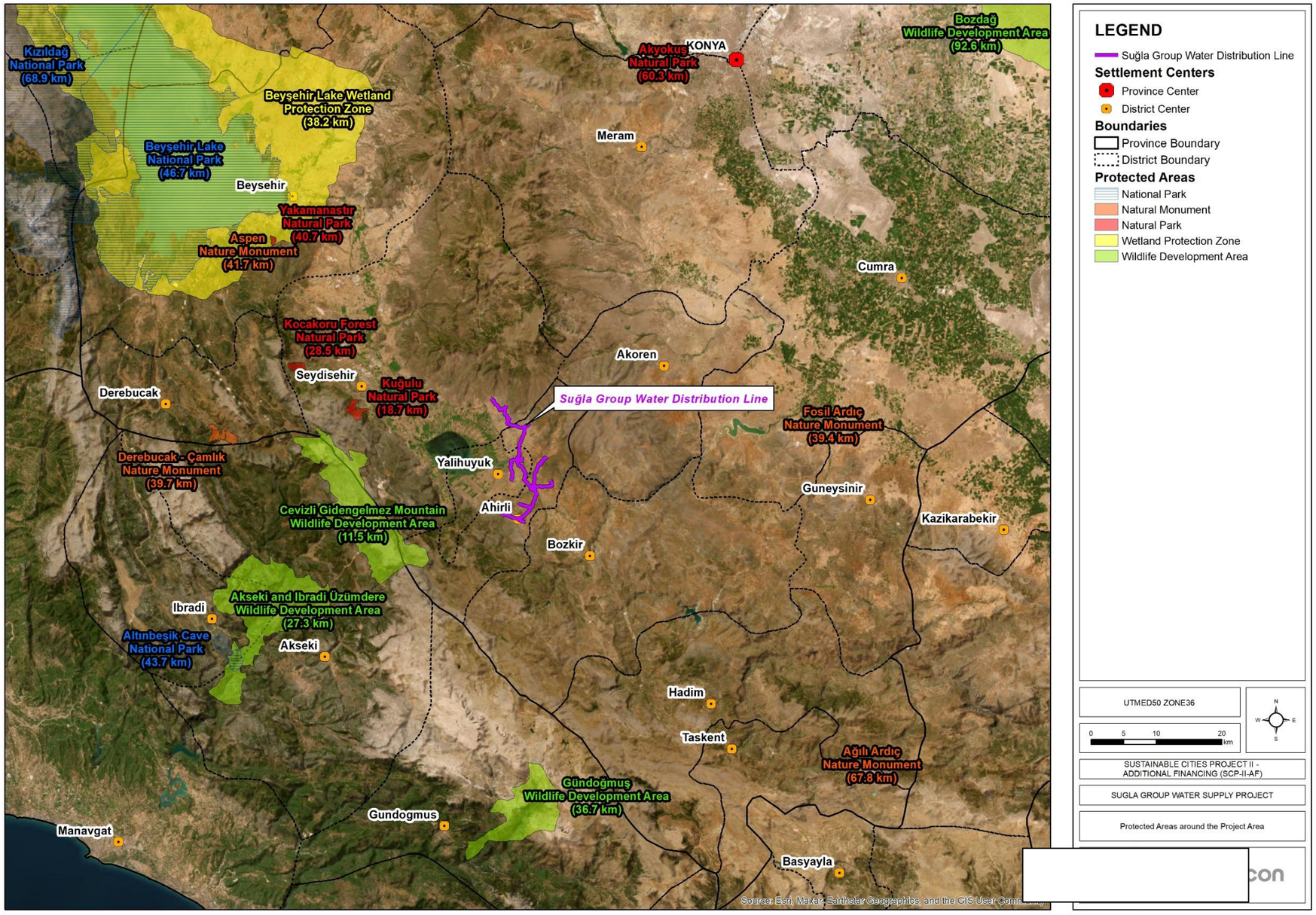


Figure 4-25 Protected Areas around the Project Area

4.3. Socio-Economic Environment

In this section, information regarding the economic activities and demographic features of Konya Province and Ahirli and Yalihuyuk Districts are presented. For the information, data obtained from TurkStat and related literature resources were used. This section covers the findings of the key informant interview, as well.

4.3.1. Population

Konya Province is divided into 31 districts. According to the 2022 census results obtained from the Address-Based Population Registration System (ABPRS), the population of the Ahirli District, Seydisehir District, and Yalihuyuk District, where the project area is located, is 4,574, 65,465, and 1,710, respectively and make up 3.12% population of the province. The population distribution of Konya Province and the population of the districts together with the gender distribution of the population are given in Table 4-25.

Table 4-25 Population of Konya Districts

District	Male	Female	Total	Male (%)	Female (%)
Ahirli	2,275	2,299	4,574	49.74	50.26
Akoren	3,016	2,820	5,836	51.68	48.32
Aksehir	46,076	47,889	93,965	49.04	50.96
Altinekin	7,308	6,981	14,289	51.14	48.86
Beysehir	38,763	38,927	77,690	49.89	50.11
Bozkir	12,341	12,966	25,307	48.77	51.23
Celtik	4,839	4,590	9,429	51.32	48.68
Cihanbeyli	25,585	25,092	50,677	50.49	49.51
Cumra	33,924	33,766	67,690	50.12	49.88
Derbent	1,963	2,089	4,052	48.45	51.55
Derebucak	2,847	2,843	5,690	50.04	49.96
Doganhisar	7,129	7,683	14,812	48.13	51.87
Emirgazi	4,001	3,723	7,724	51.80	48.20
Eregli	76,239	74,739	150,978	50.50	49.50
Guneysinir	4,624	4,642	9,266	49.90	50.10
Hadim	5,502	5,497	10,999	50.02	49.98
Halkapinar	1,961	1,948	3,909	50.17	49.83
Huyuk	7,408	7,736	15,144	48.92	51.08
Ilgin	26,543	26,946	53,489	49.62	50.38
Kadinhani	15,765	15,441	31,206	50.52	49.48
Karapinar	25,535	24,788	50,323	50.74	49.26
Karatay	186,287	184,640	370,927	50.22	49.78
Kulu	25,794	25,818	51,612	49.98	50.02
Meram	172,651	175,674	348,325	49.57	50.43
Sarayonu	13,939	13,832	27,771	50.19	49.81
Selcuklu	338,768	351,899	690,667	49.05	50.95
Seydisehir	32,801	32,664	65,465	50.10	49.90
Taskent	2,867	2,901	5,768	49.71	50.29
Tuzlukcu	2,950	3,112	6,062	48.66	51.34
Yalıhuyuk	853	857	1,710	49.88	50.12
Yunak	10,652	10,339	20,991	50.75	49.25

Source: TurkStat, 2022

The population census results of TurkStat for Konya Province between 1965 and 2000 was performed via traditional census method (by physical counting of individuals living in houses); while the census results between 2007 and 2022 was carried out via address based population registration system.

Table 4-26 Census Results for Konya Province

TurkStat –Traditional Census Results							
Year	**1965**	**1970**	**1975**	**1980**	**1985**	**1990**	**2000**
Capita	1,122,622	1,280,239	1,422,461	1,562,139	1,769,050	1,750,303	2,192,166
TurkStat – Address Based Population Registration System Results							
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Capita	1,959,082	1,969,868	1,992,675	2,013,845	2,038,555	2,052,281	2,079,225	2,108,808
Year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Capita	2,130,544	2,161,303	2,180,149	2,205,609	2,232,374	2,250,020	2,277,017	2,296,347

Source: TurkStat, 2022

As seen from Table 4-26, the population increased from 2,277,017 in 2021 to 2,296,347 in 2022 with an annual population growth rate of 0.84%.

The information about the populations of Ahirli District is given in Table 4-27 According to data of TurkStat's ABPRS, the population of Ahirli District in 2022 is 4,574.

Table 4-27 Population of Ahirli District

Census Year	Population
2007	6,080
2008	5,876
2009	5,519
2010	5,233
2011	5,016
2012	4,867
2013	4,765
2014	4,722
2015	4,545
2016	4,561
2017	4,598
2018	5,084
2019	4,753
2020	4,657
2021	4,550
2022	4,574

Source: TurkStat, 2022

The information about the populations of Yalihuyuk District is given in . According to data of TurkStat's ABPRS, the population of Yalihuyuk District in 2022 is 1,710.

Table 4-28 Population of Yalihuyuk District

Census Year	Population
2007	1,778
2008	1,869
2009	1,882

Census Year	Population
2010	1,731
2011	2,029
2012	1,787
2013	1,830
2014	1,666
2015	1,512
2016	1,509
2017	1,533
2018	1,785
2019	1,629
2020	1,573
2021	1,532
2022	1,710

Source: TurkStat, 2022

Figure 4-26 below shows the annual population growth rate of Ahirli District within the last 14 years period. As seen in Figure 4-26, Ahirli District has seen an increase in its population growth rate in 2009 and 2014. The population growth rate decreased in 2015. The increase continued between 2016 and 2018. The population growth rate decreased in 2019. In 2022, the population growth rate increased from -2.35 % to 0.52%.

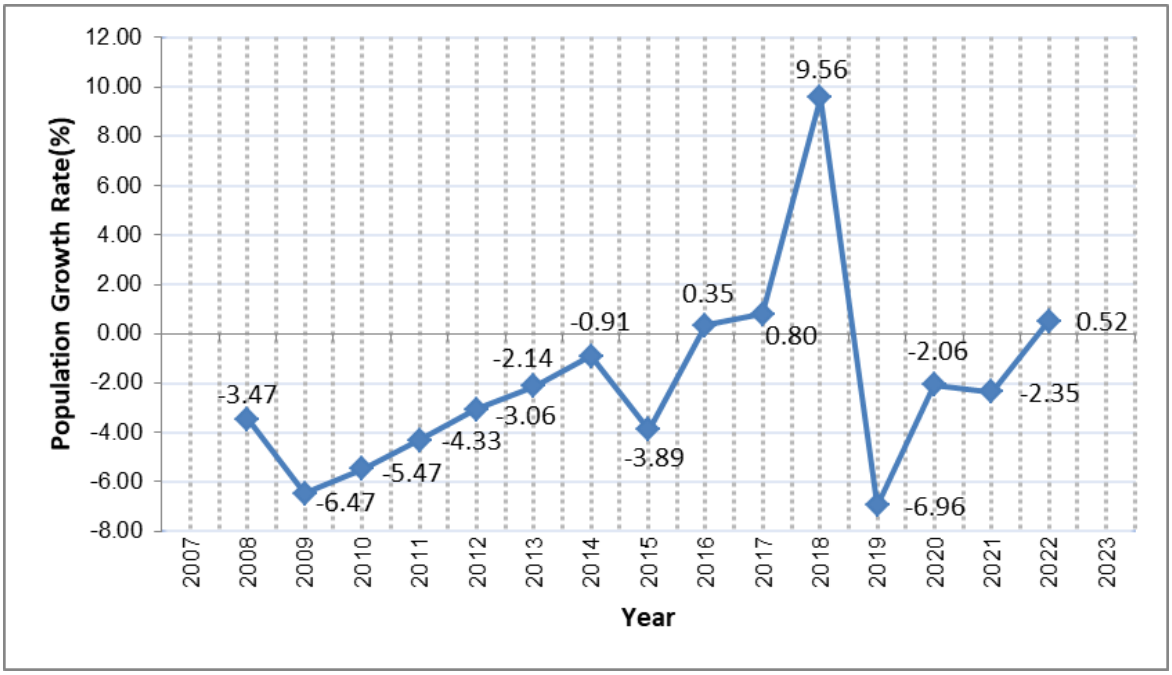


Figure 4-26 Population Growth Rate of Ahirli District between 2008 and 2022

Figure 4-27 below shows the annual population growth rate of Yalihuyuk District within the last 14 years period. The population growth rate continued with fluctuations except for the years 2014-2015, 2016-2017 and 2020-2021. In 2022, the population growth rate increased from -2.68 % to 10.41%.

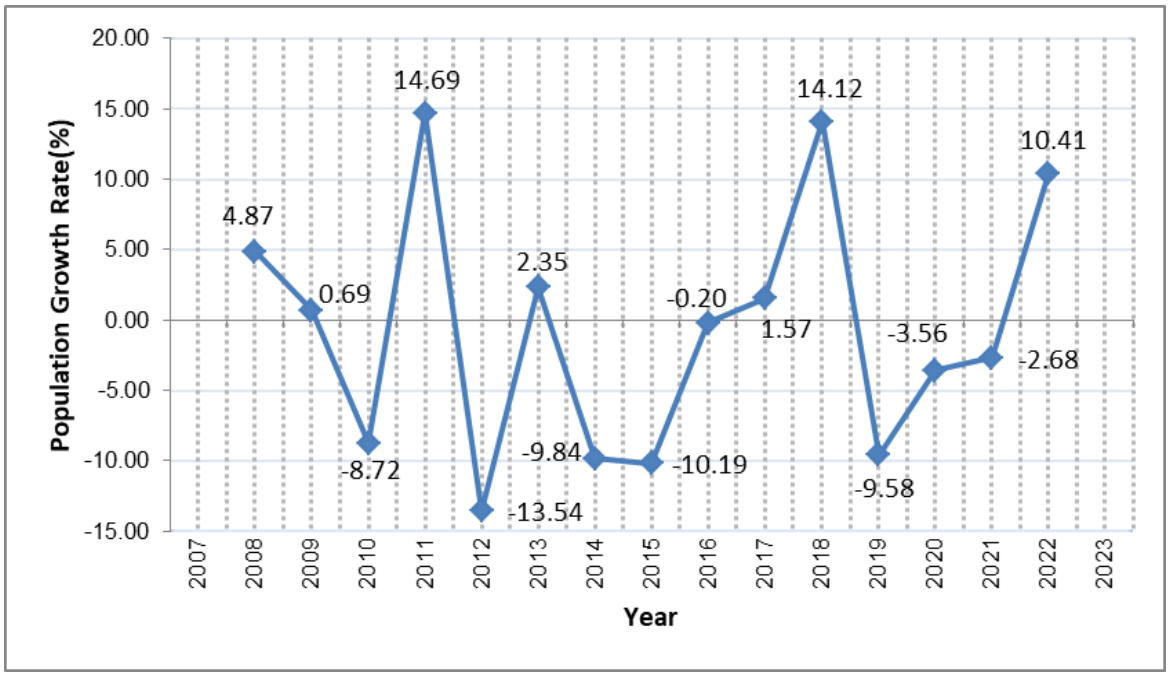


Figure 4-27 Population Growth Rate of Yalihuyuk District between 2008 and 2022

Age and gender distribution of the population in Ahirli and Yalihuyuk Districts are presented in Figure 4-28, and Figure 4-29 respectively.

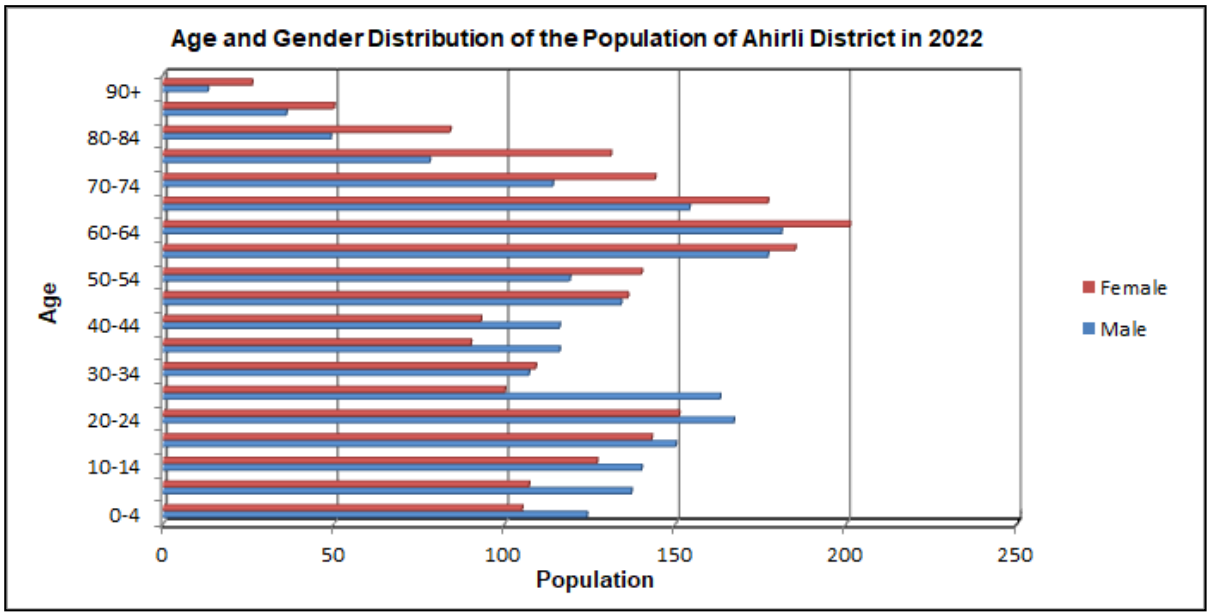


Figure 4-28 Age and Gender Distribution of the Population of Ahirli District in 2022

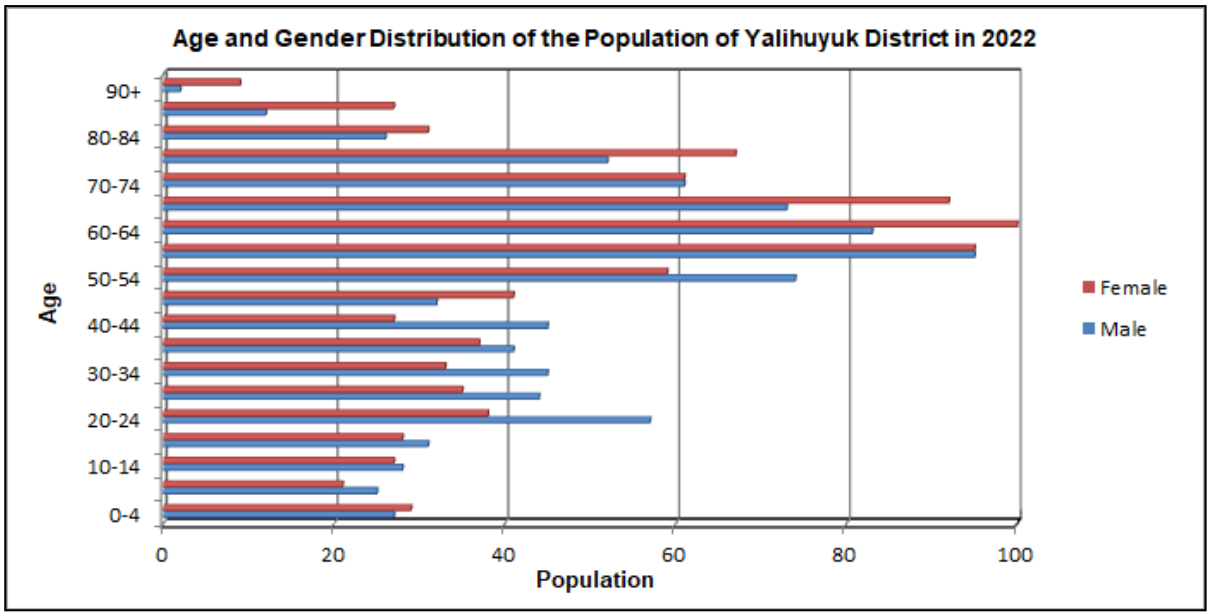


Figure 4-29 Age and Gender Distribution of the Population of Yalihuyuk District in 2022

4.3.2. Socio-Economic Characteristic

With a surface area of 39,000 km², Konya province is the largest province in Türkiye and is located in the south of Türkiye's Central Anatolia Region. It is located at the junction of important highways and railways connecting Europe and the West Anatolia to the Middle East and Central Asia.

Türkiye adopted the European Union's framework for regional policies and statistics in 2002, which categorized the country into 12 Nomenclature of Territorial Units for Statistics (NUTS) – 1 Region, 26 NUTS-2 Sub-regions, and 81 NUTS-3 (provinces) based on population, socioeconomic, and geographic data.

Konya Province takes place in TR5 Region , one of the 26 NUTS 2 Level Regions of Türkiye and in Konya sub-region (TR52) together with the other Central Anatolian city of Karaman Province as seen in Figure 4-30.



Figure 4-30 Konya Subregion (TR52)

TR52 Region has a strategic position at the national and international scale due to its geographical location and socioeconomic structure. Having a total area of 47,420 km^2, TR52 Region comprises 6.05% of Türkiye's total area.

According to the Socio-Economic Development Ranking Survey of Provinces and Regions, 2017, which was published by the Ministry of Industry and Technology, General Directorate of Development Agencies, Konya was ranked 14th. According to the *Socio-Economic Development Ranking Survey of Districts, 2022,* which was published by the Ministry of Industry and Technology, General Directorate of Development Agencies, Ahirli District was ranked 881st while Yalihuyuk District 772nd in Türkiye in terms of socio-economic development. In Table 4-29 indicators for development level of Konya Province are expressed.

Table 4-29 Indicators for Development Level of Konya Province

Parameters	Value
Socio-economic development ranking (Ministry of Development, 2017)	14th
Annual population growth rate (Konya Province Environmental Status Report, 2022)	8.45 ‰
GDP per capita (TurkStat, 2021)	7,341 $
Total exportation (TurkStat, 2019)	1.9 billion $
Total importation (TurkStat, 2019)	877.6 million $
Total number of literate persons, 6+ (TurkStat, 2021)	1,989,498
Number of primary school (TurkStat, 2021)	709
Number of middle school (TurkStat, 2021)	572
High School Graduation, (TurkStat, 2021)	391,638
University Graduation, (TurkStat, 2021)	269,370
Number of Hospital (TurkStat, 2020)	45
Number of Hospital Bed (TurkStat, 2020)	8,554
Forest Area / Total Area Ratio (Konya Province Environmental Status Report, 2019)	14.1%
Total number of tourists overnight stays in certified accommodations (TurkStat, 2020)	2,699,470
Net Migration Rate (TurkStat, 2022)	-1.87‰

According to this index, Yalihuyuk is at 5th and Ahirli is at 6th. Table 4-30 shows socio-economic development ranking of the districts of Konya on provincial basis.

Table 4-30 Socio-Economic Development Ranking of Districts of Konya

District	Overall Ranking	Development Score	Development Level
Selcuklu	21	2.562	1
Karatay	82	1.481	2
Meram	124	1.053	2
Eregli	230	0.453	2
Aksehir	243	0.372	3
Beysehir	244	0.369	3
Seydisehir	271	0.228	3
Ilgin	383	-0.121	3
Kulu	385	-0.125	3
Cihanbeyli	404	-0.159	3
Karapinar	405	-0.161	3
Cumra	455	-0.233	4
Sarayonu	543	-0.386	4
Huyuk	637	-0.506	5
Kadinhani	655	-0.526	5
Celtik	675	-0.544	5
Yunak	680	-0.559	5
Bozkir	692	-0.574	5
Doganhisar	729	-0.616	5
Derebucak	733	-0.621	5
Guneysinir	735	-0.621	5
Altinekin	751	-0.641	5
Akoren	766	-0.672	5
Hadim	771	-0.681	5
Yalihuyuk	772	-0.682	5
Tuzlukcu	774	-0.686	5
Taskent	787	-0.710	5
Emirgazi	803	-0.733	5
Halkapinar	819	-0.765	5
Ahirli	881	-0.907	6
Derbent	891	-0.936	6

Source: SEGE, 2020.

4.3.3. Agriculture and Livestock

Provincial Level

The cultivated area in Konya is roughly 18.7 million decares and constitutes 8.3% of the total cultivated area in Türkiye. Many types of vegetables and fruits are produced in Konya Province, especially field crops such as wheat, barley, sugar beet, haricot, potatoes, sunflower, hash, cumin, and safflower. As a result, agriculture is one of the province's most important economic activities. It meets approximately 9.7% of Türkiye's cereal production (*http://www.kto.org.tr)*.

According to TurkStat 2022 data, 14,879,364 decares of the 18,700,995 decares agricultural land of the province are used for the cultivation of cereals and other herbal products, 413,595 decares for the cultivation of fruits, beverages and spice plants, 364,522 decares for the cultivation of vegetable products, 482 decares

for the cultivation of ornamental plants and 3,043,032 decares of it have been left fallow. A visual representation of the agricultural land use in Konya Province is given in Figure 4-31.

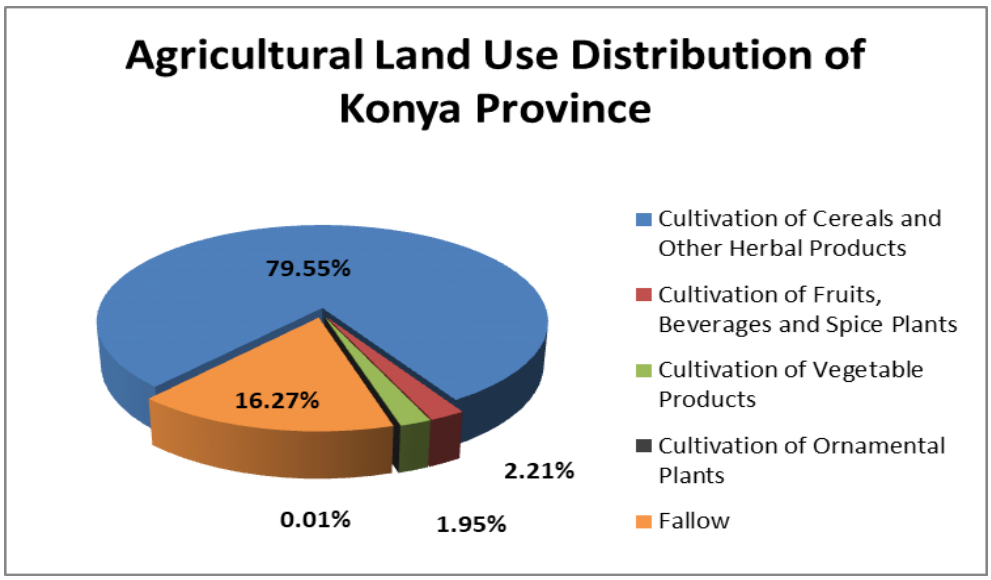


Figure 4-31 Agricultural Land Use Distribution of Konya Province (Source: TurkStat 2022).

Cereals and other herbal products consist approximately 95% of the total cultivated area; thus, these products correspond to the most cultivated products in the province. In other words, vegetable, fruit and ornamental plant production areas in the province are quite low compared to cereals and other herbal products. Agricultural products produced in significant amounts in the province are summarized in Table 4-31.

Table 4-31 Quantities of Crops Produced in Significant Amounts and Cultivation Area in Konya (2022)

Product Type	Cultivated Area (Decares)	Production (Ton)
Sugar Beet	732,344	5,989,214
Corn (Silage)	395,708	2,399,110
Clover	402,987	1,820,490
Wheat, Excluding Durum Wheat	3,951,394	1,313,200
Corn	1,862,125	2,044,202
Barley (Other)	3,360,407	1,055,270
Potatoes (Excluding Sweet Potatoes)	120,491	518,677
Durum Wheat	1,842,712	616,337
Sunflower Seed (Oil)	674,778	254,571
Barley (Beer)	536,080	209,551
Vetch (Hungarian)	173,526	240,590
Total	**13,516,472**	**16,461,212**

Source: TurkStat, 2022

According to TurkStat 2022 data, livestock breeding is also common in the province. There are 930,754 bovines and 3,046,469 ovine in the province. In addition, there are 9,557,766 poultry animals and 1,148 beekeeping businesses in the province.

District Level

Ahirli District

According to TurkStat 2022 data, 67,097 decares of the 78,177 decares agricultural land of the district are used for the cultivation of cereals and other herbal products, 700 decares for the cultivation of vegetable products, 5,942 decares for the cultivation of fruits and 4,428 decares have been left fallow. A visual representation of the agricultural land use in Ahirli District is given in Figure 4-32.

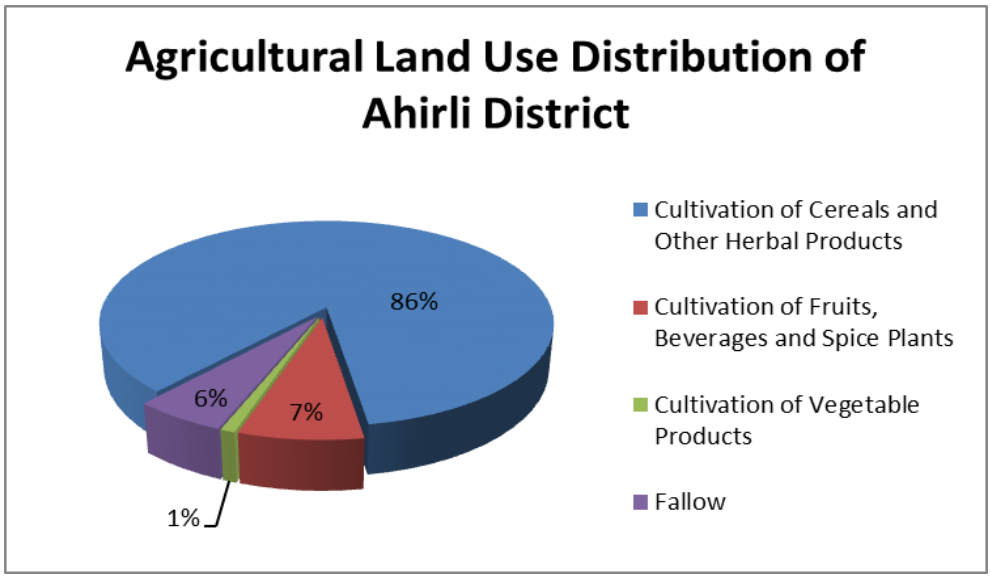


Figure 4-32 Agricultural Land Use Distribution of Ahirli District (Source: TurkStat 2022).

Cereals and other herbal products consist approximately 86% of the total cultivated area; thus, these products correspond to the most cultivated products in the province. In other words, vegetable, fruit and ornamental plant production areas in the province are quite low compared to cereals and other herbal products. Agricultural products produced in significant amounts in the province are summarized in Table 4-32.

Table 4-32 Quantities of Crops Produced in Significant Amounts and Cultivation Area in Ahirli District (2022)

Product Type	Cultivated Area (Decares)	Production (Ton)
Durum Wheat	33,000	8,508
Wheat (Excluding durum wheat)	2,900	608
Barley	10,000	2,161
Sunflower Seed (For oil)	1,100	396
Sugar Beet	4,500	33,744
Vetch Seed (Green Grass)	1,200	240
Clover (Green Grass)	650	1,625
Corn (For silage)	4,000	20,000
Total	**57,350**	**67,282**

Source: TurkStat, 2022

According to TurkStat 2022 data, livestock breeding is also common in the district. There are 7,357 bovines and 33,010 ovines in the district. In addition, there are 2,083 poultry animals and 25 beekeeping businesses in the district.

Yalihuyuk District

According to TurkStat 2022 data, 30,127 decares of the 38,904 decares agricultural land of the district are used for the cultivation of cereals and other herbal products, 2,577 decares for the cultivation of fruits and 6,200 decares have been left fallow. A visual representation of the agricultural land use in Yalihuyuk District is given in Figure 4-33.

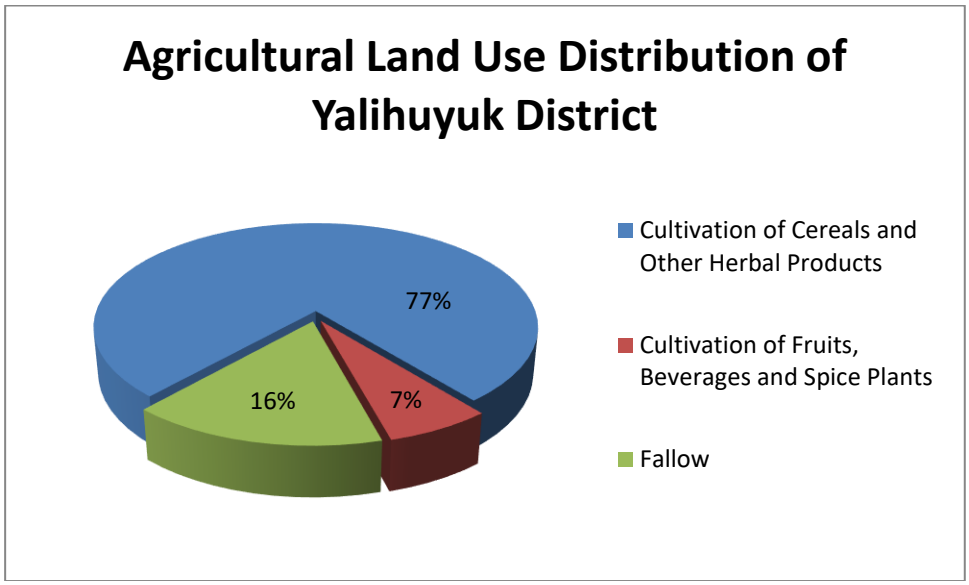


Figure 4-33 Agricultural Land Use Distribution of Yalihuyuk District (Source: TurkStat 2022).

Cereals and other herbal products consist approximately 77% of the total cultivated area; thus, these products correspond to the most cultivated products in the province. In other words, vegetable, fruit and ornamental plant production areas in the province are quite low compared to cereals and other herbal products. Agricultural products produced in significant amounts in the province are summarized in Table 4-33.

Table 4-33 Quantities of Crops Produced in Significant Amounts and Cultivation Area in Yalihuyuk District (2022)

Product Type	Cultivated Area (Decares)	Production (Ton)
Durum Wheat	11,705	3,810
Wheat (Excluding durum wheat)	7,080	1,736
Barley	6,845	1,897
Sugar Beet	830	5,580
Vetch Seed (Green Grass)	310	295
Clover (Green Grass)	42	84
Corn (For silage)	220	1,254
Total	**27,032**	**14,656**

Source: TurkStat, 2022

According to TurkStat 2022 data, livestock breeding is also common in the district. There are 500 bovines and 810 ovines in the district. In addition, there are 2,883 poultry animals and two beekeeping businesses in the district.

4.3.4. Industry

Provincial Level

There are ten (10) organized industrial zones, eight (8) of which are active, 17 small industrial sites supported by the Ministry of Industry and Technology, 15 small industrial sites in the city center, 16 small industrial sites and 32 private industrial sites in the districts of Konya. In Table 4-34, the number of workplaces and employment is given by industry type.

Table 4-34 Workplace and Employment Numbers of Industrial Areas of Konya Province

Industry Type	Number	Active Workplace Number	Employment Number
Organized Industrial Zone	10	957	53,920
Industrial Zone	80	15,950	82.504
Total	90	16,907	136,424

Source: Konya Chamber of Commerce (2020). Konya Economy Report 2019, June 2021

Main business areas in the industrial area are automotive spare parts industry, machinery industry, agricultural machinery and equipment industry, plastic industry, furniture and wood industry, metal industry, food industry, construction materials, and packaging industry.

District Level

Ahirli is one of the relatively small districts of Türkiye, with a population of 4,574. There are a total of 168 insured employees in the district. Most employment in the district is provided by the state in education, public administration, security, social services, and construction sectors. Non-state employment areas are hunting, woodcutting, animal husbandry, farming, and construction. Therefore, there is no industry in this district other than small-scale workshop production for local consumption and state-owned construction projects (*Mevka - Ahirli District Report, 2020*).

Yalihuyuk is one of the smallest districts of Türkiye, with a population of 1,710. There are a total of 44 insured employees in the district. Most employment in the district is provided by the state in landscaping, security, social services, and public administration sectors. Non-state employment areas are retail trade, animal husbandry, farming, and construction. Therefore, there is no industry in this district other than small-scale workshop production for local consumption and state-owned construction projects (*Mevka - Yalihuyuk District Report, 2020*).

4.3.5. Energy and Natural Resources

Konya, having a crucial position for industry, agriculture, and trade due to its geographical location, natural and energy resources, and low disaster risks, is expected to contribute not only to energy consumption but also energy production as well. The province is located in a position with very favorable conditions for the potential of renewable energy sources such as wind and solar energy. A significant portion of the 281 MW energy generated from 51 production facilities in the province is provided by fossil fuels (121 MW) and solar energy (117 MW).

It is possible to generate electricity from wind energy in the southern districts of Konya and the maximum wind power farm capacity is estimated approximately 2,000 MW for the province. A license has been obtained for the establishment of a total 136 MW wind power plant in Konya.

Konya is one of the leading regions of Türkiye in terms of its current generation and potential in the solar energy sector. The province has significant leading potential due to its high solar radiation values, availability of suitable lands, and having many companies operating in the solar energy sector. Konya, which has 34 solar power generation facilities, ranks the first in Türkiye in this respect. In addition, the first and the only Energy Specialized Organized Industrial Zone in Türkiye is in Karapinar District. Considering the solar radiation values, the amount of electrical energy to be obtained from any solar field in Karapinar will be approximately 70% more than the Bavarian region of Germany, where solar field investments are made the most in the world (*http://www.konyadayatirim.gov.tr*).

4.3.6. Education

Provincial Level

The education statistics of Konya's population aged 15 and over are as follows:

- 2.0% are illiterate, and 3.2% are literate but have not finished any school,
- 24.7% are primary school graduates,
- 29.0% graduated from middle school or its equivalent,
- 23.0% graduated from high school or equivalent vocational school,
- 15.8% graduated from college or faculty,
- 2.0% have a master's degree, and
- 0.4% have a doctorate degree.

As of 2021, there are 1281 elementary schools (primary and middle schools), 377 secondary schools (high school or vocational high school), and five higher education institutions (university or college) in the province (TurkStat, 2021).

District Level

The education statistics of Ahirli District's population aged 15 and over are as follows:

- 3.3% are illiterate, and 8.4% are literate but have not finished any school,
- 37.4% are primary school graduates,
- 27.6% graduated from middle school or its equivalent,
- 14.5% graduated from high school or equivalent vocational school,
- 8.2% graduated from college or faculty,
- 0.6% have a master's degree, and
- 0.03% have a doctorate degree.

Ahirli District has a literacy rate of 96.7%. The education level of the population with secondary school and below education constitutes a relatively large part (76.6%) of the district (TurkStat, 2021).

The education statistics of Yalihuyuk District's population aged 15 and over are as follows:

- 3.7% are illiterate, and 7.2% are literate but have not finished any school,
- 46.0% are primary school graduates,
- 19.9% graduated from middle school or its equivalent,
- 13.6% graduated from high school or equivalent vocational school,
- 9.3% graduated from college or faculty,
- 0.3% have a master's degree, and

- There is no doctorate degree holder.

Yalihuyuk District has a literacy rate of 96.3%. The education level of the population with secondary school and below education constitutes a relatively large part (76.7%) of the district (TurkStat, 2021).

4.3.7. Health

There are 45 hospitals in the Konya Province, which are 33 state and 12 private hospitals (TurkStat, 2020). There is a state hospital in Seydisehir and a community health center in Ahirli and Yalihuyuk within the Project districts.

The number of physicians per thousand people is two in Konya Province, which is also the same average value for Türkiye. While the average number of hospital beds per hundred thousand people in Konya Province is 380, this rate is 300 in Türkiye (TurkStat, 2020).

4.3.8. Transportation

Konya is one of the provinces with the longest road length in terms of both its surface area and its geographical location within the country. It is in the first place in the province with more than 3,000 kilometers of provincial and state roads.

Transportation is provided mainly by highways in the city. D715 Ankara-Konya-Antalya road is located on the north-south axis of the province. On the East-West axis, the D300 Aksaray-Konya-Afyon road is located.

Konya Province is located within the boundaries of the 3rd Regional Directorate of General Directorate of Highways. The total length of the 66 provincial roads registered to the General Directorate of Highways of Konya is 1,739 km.

In the Project area, the D330 and D340 roads have great importance. The D330 is a road very close to the Project, especially near the Sarayonu village of Akkise (a town of Ahirli), which is crucial for transportation for both the construction and operation phases. The proposed transmission line will pass under the D330 highway in the Alicerci town of Ahirli District. An application was made by KOSKI to the 3rd Regional Directorate of Highways of the Republic of Türkiye for highway crossing permit process.

The road distances between the Project Districts and some cities are given in Table 4-35, and Table 4-36.

Table 4-35 Road Distances of Ahirli District to Some Important Cities

City Center	Distance (km)
Konya	102
Ankara	373
Istanbul	687
İzmir	587
Antalya	213
Isparta	248
Afyonkarahisar	263
Aksaray	253
Nigde	295
Karaman	147

Source: General Directorate of Highways Web Site

Table 4-36 Road Distances of Yalihuyuk District and Some Important Cities

City Center	Distance (km)
Konya	98
Ankara	396
Istanbul	684
İzmir	616
Antalya	212
Isparta	243
Afyonkarahisar	237
Aksaray	248
Nigde	300
Karaman	125

Source: General Directorate of Highways Web Site

Konya's railway connection has been active since 1898. Trains passing through Konya are Toros Express, Central Anatolian Blue Train and Meram Express. The most important work in railway transportation is the high-speed train project between Konya and Ankara provinces, which has been successfully completed and is still in service. With the completion of this project in 2011, the transportation time between Konya and Ankara provinces was reduced to 1 hour and 40 minutes, and significant progress was made in railway transportation. In 2013, high-speed train services between Konya and Eskisehir started. In 2015, Konya-Istanbul high-speed train services were started as well.

The closest airport, Konya Airport, which is located in Selcuklu District, is located 151 km away from the city center. There are 11 reciprocal flights between Konya and Istanbul every day, and during the summer months, flights are provided to European cities such as Amsterdam, Copenhagen, Oslo, Dusseldorf, Stuttgart and Rotterdam.

4.4. Existing Infrastructure

In this section, the existing water transmission and sewerage lines and solid waste management system in the Project area are presented. Since the existing infrastructure related to transportation, energy, health and education is given in Section IV.3, it will not be presented again in this section.

4.4.1. Existing Water Supply, Transmission and Distribution Systems

Ahirli, and Yalihuyuk districts have existing transmission and distribution lines, reservoirs and other water supply infrastructures within the boundaries of the Project's service area. The existing water supply, storage, transmission and distribution system components in the Project's service area are given in Table 4-37.

Table 4-37 Ahirli District, Existing Water Supply System Components in the Project Area

No	Storage Name	Storage Capacity (m^3)	Water Source / Well Name	Water Supply (L/s)	Settlements Served
1	Ahirli	150	Ahirli Well + Cevizlik Sazak Spring	8 + 5	Ahirli Centrum

No	Storage Name	Storage Capacity (m^3)	Water Source / Well Name	Water Supply (L/s)	Settlements Served
2	Akkise Water Tank -1	300	Akkise Yazi-1 Well + Akkise Creek Way-1 Well	8 + 8	Akkise Centrum
3	Akkise Water Tank -2	300	Akkise Village Pumping Stationside Well	4	Akkise Centrum
4	Alicerci Water Tank	75	Alicerci-1 Well	5	Alicerci Neighborhood
5	Bademli Water Tank-2	150	Bademli-1 Well + Bademli-2 Well + Bademli-3 Well	6	Bademli Neighborhood
6	Baliklava Water Tank	75	Baliklava-1 Well	1.5	Baliklava Neighborhood
7	Buyukoz Water Tank	75	Buyukoz-1 Well	3	Buyukoz Neighborhood
8	Kayacik Water Tank	300	Kayacik-1 Well	5	Ciftlik Neighborhood
9	Erdogan	75	Erdogan-1 Well	3	Erdogan Neighborhood
10	Karacakuyu	75	Karacakuyu-1 Well + Highland Road Spring	2	Karacakuyu Neighborhood
11	Kucukoz	50	Kucuk Oz-1 Well	2	Kucukoz Neighborhood

Table 4-38 Yalihuyuk District, Existing Water Supply System Components in the Project Area

No	Storage Name	Storage Capacity (m^3)	Water Source / Well Name	Water Supply (L/s)	Settlements Served
1	Yalihuyuk Water Tank	150	Ahirli Well + Cevizlik Sazak Spring	5+5+8	Arasogut and Yalihuyuk Neighborhoods
2	Saray Water Tank	75	Saray-1 Well	2	Baskaraoren Neighborhood

Table 4-39 Ahirli District, Existing Water Transmission and Distribution Components in the Project Area

No	Settlement Name	Pipeline Material	Pipeline Diameter (mm)	Pipeline Length (m)
1	Ahirli Centrum	PVC	75	5,000
2	Akkise Neighborhood	PVC	90	8,000
3	Akkise Neighborhood	PE	90	800
4	Alicerci Neighborhood	PVC	63	2,000
5	Bademli Neighborhood	PVC	63	3.500
6	Baliklava Neighborhood	PVC	50	2,000
7	Baliklava Neighborhood	PE	63	250
8	Buyukoz Neighborhood	PVC	63	1,000
9	Ciftlik Neighborhood	PVC	63	2,000
10	Ciftlik Neighborhood	PVC	63	300
11	Erdogan Neighborhood	PVC	63	1,500
12	Karacakuyu Neighborhood	PVC	63	1,500
13	Karacakuyu Neighborhood	PE	50	100
14	Kayacik Neighborhood	PVC	63	2,000
15	Kayacik Neighborhood	PE	90	150

No	Settlement Name	Pipeline Material	Pipeline Diameter (mm)	Pipeline Length (m)
16	Kucukoz Neighborhood	PVC	63	500
17	Kurucay Neighborhood	PVC	50	2,500
			TOTAL	**33,100**

Table 4-40 Yalihuyuk District, Existing Water Transmission and Distribution Components in the Project Area

No	Settlement Name	Pipeline Material	Pipeline Diameter (mm)	Pipeline Length (m)
1	Arasogut Neighborhood	PVC	63	1,500
2	Saray Neighborhood	PVC	63	100
3	Yalihuyuk Neighborhood	PVC	75	5,000
4	Yalihuyuk Neighborhood	PE	63	9,700
			TOTAL	**16,300**

4.4.2. Existing Wastewater System

Sewerage Network

According to the information obtained from KOSKİ, Alicerci and Kucukoz Neighborhoods do not have access to a sewerage network. There is approximately 101 km of sewerage network in the Project area. Detailed information about the network is presented in Table 4-41.

Table 4-41 Sewerage Network Access Status and Network Specifics of the Project Area

No	District Name	Settlement Name	Pipeline Diameter (mm)	Pipeline Length (m)
1	Ahirli	Ahirli Centrum	200	6,400
2	Ahirli	Akkise Neighborhood	200 and 300	20,500
3	Ahirli	Alicerci Neighborhood	NA	NA
4	Ahirli	Bademli Neighborhood	200	5,700
5	Ahirli	Baliklava Neighborhood	200	1,500
6	Ahirli	Buyukoz Neighborhood	NA	NA
7	Ahirli	Ciftlik Neighborhood	200	2,000
8	Ahirli	Erdogan Neighborhood	200	1,700
9	Ahirli	Karacakuyu Neighborhood	200	750
10	Ahirli	Kayacik Neighborhood	200	2,100
11	Ahirli	Kucukoz Neighborhood	NA	NA
12	Seydisehir	Asagikaraoren Neighborhood	200	3,900
13	Seydisehir	Baskaraoren Neighborhood	200	1,500
14	Seydisehir	Ortakaraoren Neighborhood	200 and 300	35,000
15	Yalihuyuk	Arasogut Neighborhood	200	500
16	Yalihuyuk	Saray Neighborhood	200	500
17	Yalihuyuk	Yalihuyuk Neighborhood	200, 300 and 400	19,000
			TOTAL	**101,050**

99% of the population of Konya has access to the sewerage network. Existing sewerage network collects the wastewater from Yalihuyuk and Ahirli districts, transferring it to Ortaören - Akkise Wastewater Treatment Plant. Operator of the WWTP is KOSKİ (Konya Water and Sewerage Works Directorate) and the plant has an

environmental permit. Capacity of the WWTP is 365,000 m^3/year and discharges to the Beysehir Channel. Seydisehir District's wastewater is collected and transferred to the Seydisehir Wastewater Treatment Plant. Operator of the WWTP is also KOSKİ (Konya Water and Sewerage Works Directorate) and the plant has an environmental permit. Capacity of the WWTP is 2,172,480 m^3/year and discharges to Karakis Creek (Konya Provincial Environmental Status Report of 2021, 2022). Both WTTPs meet the water discharge standards specified in the Water Pollution Control Regulation (dated 31st of December 2004 and numbered 25687).

5. ENVIRONMENTAL AND SOCIAL IMPACTS OF THE PROJECT

5.1. Impact Assessment Approach

The purpose of impact assessment and mitigation is to identify and evaluate the significance of potential impacts (positive or negative) and risks on identified receptors and resources according to defined assessment criteria; to develop and describe the measures that will be taken to avoid or minimize any potential adverse effects and enhance potential benefits; and to report the significance of the residual impacts that remain following mitigation.

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 5-1 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 5-1 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

Pre-Construction Phase:

In the pre-construction phase, since no construction activities will be carried out, some of the defined potential impacts do not indicate impacts that occur during the pre-construction phase. For example, in the sub-topic of biodiversity, there is a potential impact defined as disturbance on flora and fauna species. This does not mean that flora and fauna may be affected during pre-construction; however, related mitigation measures will be taken during the pre-construction to be able to implement during the construction and operation phases. Therefore, mitigation measures to be taken at the pre-construction phase may have been specified against the impacts of the construction and operation phases. Similarly, the likelihood of occurrence can be mentioned in the Table 5-2 as follows:

- * is used for Likelihood of Occurrence referring to impact to be observed during the construction phase.
- ** is used for Likelihood of Occurrence referring to impact to be observed during the operation phase.
- *** is used for Likelihood of Occurrence referring to impact to be observed during the construction and operation phases.

Table 5-2.Environmental and Social Impact Identification during Pre-Construction Phase

Definition of Potential Impact	Impact						
	Nature/Type	Extent/Area	Duration	Likelihood of Occurrence	Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without measures
Land Acquisition							
Disputes over land sales/acquisition	Adverse/ Direct	On-site/project footprint	Long term	Likely	**High**	**Medium**	**High**
Change of use status of income generating lands	Adverse/ Direct	On-site/project footprint	Permanent	Likely	**High**	**Medium**	**High**
Use of idle lands for public benefit	Positive/ Direct	Local	Permanent	Likely	**Low**	**Medium**	**Low**
Loss of livelihood or decrease in livelihood for the lands used for agricultural activities (olive cultivation and/or dry / irrigated agriculture)*	Adverse/ Direct	On-site	Permanent	Likely	**High**	**Medium**	**High**
Loss of livelihood or decrease in livelihood for the lands not used for agricultural activities (idle lands)*	Adverse/ Direct	On-site	Permanent	Likely	**Low**	**Medium**	**Low**
Biodiversity							
Disturbance on flora and fauna species during construction and operation phases (No impacts on biological environment are expected during pre-construction phase)	Adverse/ Direct	On-site/project footprint	Short Term	Unlikely*	**Medium**	**Low**	**Low**
Cultural Heritage							
Destruction or damage to cultural heritage during construction and operation phases	Adverse/ Direct	On-site/project footprint	Permanent	Likely*	**High**	**Low**	**Medium**
Traffic and Transport							
Disturbance due to the road closure, traffic jam due to the construction vehicles, etc.	Adverse/ Direct	Local	Short term	Very likely/ certain*	**Medium**	**Medium**	**Medium**
Labor Force and Influx							
Improper working conditions	Adverse/ Direct	On-site/project footprint	Short term	Likely*	**High**	**Medium**	**High**
Workers Engaged by Third Parties and the Supply Chain	Adverse/ Direct	Local	Short term	Likely*	**High**	**Medium**	**High**
Child labor, forced labor and unregistered employment	Adverse/ Direct	On-site/project footprint	Short term	Unlikely*	**High**	**Medium**	**High**
Temporary labor influx, Risk of social conflict, Impacts on community dynamics	Adverse/ Indirect	On-site/project footprint	Mid term	Unlikely*	**Medium**	**Low**	**Low**
Community and Occupational Health and Safety							
Inadequate workers health and safety conditions	Adverse/ Direct	Local	Short term	Likely*	**High**	**Medium**	**High**
Stakeholder Engagement							
Regular engagement issues with the stakeholders	Positive/ Direct	Local	Long term	Likely***	**Medium**	**Medium**	**Medium**

Land Preparation and Construction Phase:

Table 5-3.Environmental and Social Impact Identification during Land Preparation and Construction Phase

Definition of Potential Impact	Impact						
	Nature/Type	Extent/Area	Duration	Likelihood of Occurrence	Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without measures
Land Use, Soil and Geology							
Topsoil loss, Physical Deterioration	Adverse/ Direct	On-site/project footprint	Permanent	Likely	**Medium**	**Low**	**Low**
Soil contamination	Adverse/ Direct	On-site/project footprint	Long Term	Likely	**Medium**	**Low**	**Low**
Loss of Land and Structures	Adverse/ Direct	On-site/project footprint	Permanent	Unlikely	**Medium**	**Low**	**Low**
Natural Disaster							
Erosion potential	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**Medium**	**Low**	**Low**
Structural Damage to Buildings	Adverse/ Direct	On-site/project footprint	Permanent	Unlikely	**Medium**	**Low**	**Low**
Rockfall, Landslide and Flood Potential	Adverse/ Direct	On-site/project footprint	Permanent	Unlikely	**Medium**	**Low**	**Low**
Air Quality and Noise							
Increase in dust concentration and Particulate Matter generation	Adverse/ Direct	On-site/project footprint	Short term	Very likely/ certain	**High**	**Medium**	**High**
Increase in exhaust emissions	Adverse/ Direct	On-site/project footprint	Short term	Very likely/ certain	**High**	**Medium**	**High**
Increase in Noise Level	Adverse/ Direct	Local	Short term	Very likely/ certain	**High**	**Medium**	**High**
Increase in Vibration Level	Adverse/ Direct	On-site/project footprint	Short term	Very likely/ certain	**High**	**Medium**	**High**
Climate Change							
Greenhouse gas emissions	Adverse/ Direct	Regional	Short term	Unlikely	**Medium**	**Low**	**Low**
Resource efficiency	Adverse/Indirect	Regional	Long term	Unlikely	**Medium**	**Low**	**Low**
Water Resources and Wastewater							
Impacts on Water Resources	Adverse/ Direct	Local	Short term	Unlikely	**Medium**	**Low**	**Low**
Decrease in surface water quality	Adverse/ Direct	Local	Short term	Likely	**Medium**	**Low**	**Low**
Decrease in groundwater quality	Adverse/ Direct	Local	Short term	Likely	**Medium**	**Low**	**Low**
Generation of domestic wastewater	Adverse/ Direct	On-site/project footprint	Short term	Likely	**Medium**	**Low**	**Low**
Waste Management							
Possible impacts from excavation material / waste	Adverse/ Direct	On-site/project footprint	Short term	Likely	**Medium**	**Low**	**Low**
Impacts on the environment and human health due to poor waste management	Adverse/ Direct	Local	Short term	Likely	**High**	**Medium**	**High**
Generation of solid (domestic) waste	Adverse/ Direct	On-site/project footprint	Short term	Likely	**Medium**	**Low**	**Low**
Generation of hazardous waste	Adverse/ Direct	On-site/project footprint	Short term	Likely	**Medium**	**Low**	**Low**
Biodiversity							
Disturbance on flora and fauna species and protected areas	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**Medium**	**Low**	**Low**
Habitat Loss	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**Medium**	**Low**	**Low**

Definition of Potential Impact	Impact						
	Nature/Type	Extent/Area	Duration	Likelihood of Occurrence	Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without measures
Cultural Heritage							
Destruction or deliberate damage to cultural heritage	Adverse/ Direct	On-site/project footprint	Long term	Likely	**High**	**Medium**	**High**
Labor Force and Influx							
Improper Working Conditions	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Workers Engaged by Third Parties and the Supply Chain	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Child labor, forced labor and unregistered employment	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**High**	**Medium**	**High**
Temporary labor influx, Risk of social conflict, Impacts on community dynamics	Adverse/ Indirect	Local	Short term	Unlikely	**Medium**	**Low**	**Low**
Traffic and Transport							
Disturbance due to traffic jam of the construction vehicles, etc.	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**Medium**	**Medium**	**Medium**
Road closures	Adverse/ Direct	On-site/project footprint	Short term	Likely	**Medium**	**Low**	**Low**
Community and Occupational Health and Safety							
Inadequate workers health and safety conditions, Increase in community exposure to hazards	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**High**	**Medium**	**High**
Uncertainty of Emergency Response Methods	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**High**	**Medium**	**High**
Increase in Health Problems	Adverse/ Direct	Local	Short term	Unlikely	**High**	**Medium**	**High**
Possible Asbestos Pipe Removal	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Adverse/ Direct	Local	Long term	Unlikely	**High**	**Medium**	**High**
Infrastructure Service Facilities							
Breakdown of infrastructure services	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**Medium**	**Low**	**Low**
Socio-Economic Environment							
Impacts on Local Economy, Livelihood Sources and Employment	Affirmative/Indirect	Local	Short term	Likely	**High**	**Medium**	**High**
Employment of personnel and procurement of goods and services	Affirmative/Indirect	Local	Short term	Likely	**Medium**	**Low**	**Low**
Impacts on Infrastructure Status and Social Services	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Impacts on Vulnerable/Disadvantaged Individuals/ Groups	Adverse/ Direct	Local	Short term	Likely	**High**	**Medium**	**High**
Stakeholder Engagement							
Effect of stakeholder engagement activities on residents in the area of influence	Positive/ Direct	Local	Long term	Likely	**Medium**	**Medium**	**Medium**
Regular engagement with the stakeholders and grievance redress mechanism	Positive/ Direct	Local	Long term	Likely	**Medium**	**Medium**	**Medium**

Operation Phase:

Definition of Potential Impact	Impact						
	Nature/Type	Extent/Area	Duration	Likelihood of Occurrence	Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without measures
Excavations for Maintenance/Repair Works							
Road distortions	Adverse/ Direct	On-site/project footprint	Short term	Very likely/ certain	**Medium**	**Low**	**Low**
Soil contamination and physical deterioration	Adverse/ Direct	On-site/project footprint	Short term	Likely	**Medium**	**Low**	**Low**
Breakdown of infrastructure services	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**Medium**	**Low**	**Low**
Operation of Water Network							
Waterborne Diseases	Adverse/ Direct	Local	Short term	Unlikely	**High**	**Medium**	**High**
Chlorine Gas Leakage	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**High**	**Medium**	**High**
Leakage of hazardous chemicals in Drinking WTP	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**High**	**Medium**	**High**
Air Quality and Noise							
Odorous gas emissions from pipes	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Dust and Particulate Matter Generation	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Exhaust Emissions	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Increase in noise level	Adverse/ Direct	Local	Short term	Very likely/ certain	**High**	**Low**	**Medium**
Increase in vibration	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Climate Change							
Greenhouse gas emissions	Adverse/ Direct	Regional	Short term	Unlikely	**Medium**	**Low**	**Low**
Resource efficiency	Adverse/Indirect	Regional	Long term	Unlikely	**Medium**	**Low**	**Low**
Water Resources and Wastewater							
Water and sewage overflows	Adverse/ Indirect	Local	Short term	Likely	**Medium**	**Low**	**Low**
Waste Management							
Excavation Waste Generation	Adverse/ Direct	On-site/project footprint	Short term	Likely	**Medium**	**Low**	**Low**
Generation of different types of waste during operational activities, maintenance and repair works	Adverse/ Direct	Local	Short term	Very likely/ certain	**Medium**	**Low**	**Low**
Labor Force							
Improper Working Conditions	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**

Definition of Potential Impact	Impact						
	Nature/Type	Extent/Area	Duration	Likelihood of Occurrence	Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without measures
Workers Engaged by Third Parties and the Supply Chain	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Child labor, forced labor and unregistered employment	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**High**	**Medium**	**High**
Community and Occupational Health and Safety							
Road closures	Adverse/ Direct	On-site/project footprint	Short term	Likely	**Medium**	**Low**	**Low**
Inadequate workers health and safety conditions, Increase in community exposure to hazards	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**High**	**Medium**	**High**
Uncertainty of Emergency Response Methods	Adverse/ Direct	On-site/project footprint	Short term	Unlikely	**High**	**Medium**	**High**
Increase in Health Problems	Adverse/ Direct	Local	Short term	Unlikely	**High**	**Medium**	**High**
Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Adverse/ Direct	Local	Long term	Unlikely	**High**	**Medium**	**High**
Socio-Economic Environment							
Impacts on Vulnerable/ Disadvantaged Individuals/Groups	Adverse/ Direct	Local	Short term	Likely	**High**	**Medium**	**High**
Impacts on Infrastructure Status and Social Services	Adverse/ Direct	On-site/project footprint	Short term	Likely	**High**	**Medium**	**High**
Stakeholder Engagement							
Regular engagement with the stakeholders and grievance redress mechanism	Positive/ Direct	Local	Long term	Likely	**Medium**	**Medium**	**Medium**

5.2. Environmental Impacts

The Project would have environmental impacts during the construction and the operation phases. Potential impacts of the Project during the construction phase would be generally short term with low to medium magnitude that would be locally significant. These impacts would mostly be related to air quality, soil disturbance and contamination, traffic, noise and vibration.

During the operation phase, significant adverse environmental impacts are not expected. Maintenance and repair works of the water transmission line might have minor environmental impacts such as soil contamination and increased level of noise. These impacts will be local and short-term with low in significance.

Hata! Başvuru kaynağı bulunamadı. provides a detailed overview of the identified impacts and their assessment as a result of the execution of the project activities in different project phases (construction and operation phases).

5.2.1. Air Quality

Standards and Limit Values

Standards for PM_{10} (particles with aerodynamic diameter smaller than 10 µm) are defined for particles which are respirable by humans and therefore, PM_{10} is the accepted measure of particles in atmosphere. In this context, both the Regulation on the Assessment and Management of Air Quality, and Industrial Air Pollution Control Regulation define the standards in terms of PM_{10}.

Regulation on the Assessment and Management of Air Quality (RAMAQ)

Long and short terms standards were specified for the harmonization of environmental regulations in the process of accession to the European Union. However, the regulation sets a transition period for the application of these limit values.

Industrial Air Pollution Control Regulation (IAPCR)

Industrial Air Pollution Control Regulation (IAPCR) aims to control emissions in form of smoke, dust, gas, vapor and aerosol which are released to the atmosphere as a result of activities of industrial plants and energy generation facilities, to protect human beings and the environment from pollution, and to manage and prevent negative impacts of air pollution which result in significant problems on public health.

Ambient air quality limit values for various pollutants defined in above-mentioned legislations are presented in Table 5-4.

Table 5-4 Ambient Air Quality Limit Values – Turkish Regulations

Parameter	Duration	Limit Value* (µg/m³)
SO_2	Hourly (cannot be exceeded more than 24 times a year)	350
	24 hour	125
	Long term limit	60
	Annual and winter season (October 1 - March 31)	20
NO_2	Hourly (cannot be exceeded more than 18 times a year)	200
	Annual	40
Particulate Matter (PM 10)	24 hour (cannot be exceeded more than 35 times a year)	50
	Annual	40
CO	8 hour daily maximum	10.000
O_3	8 hour daily maximum	120
VOC**	Hourly	280
	24-hour	70

** Regulation on Assessment and Management of Air Quality*
*** Industrial Air Pollution Control Regulation*

In addition to Table 5-4, the IAPCR defines limit values for the calculation of contribution to air pollution resulting from stack and non-stack sources. According to the provisions of the regulation, the amount of contribution to air pollution should be calculated to determine if the amount of emission exceeds these limits. These values are provided in Table 5-5.

Table 5-5. Emission Limits for Stack and Non-Stack Sources

Parameter	Mass Flow (kg/hour)	
	Stack	Non-Stack
Carbon monoxide (CO)	500	50
Nitrogen oxide (NO_x)	40	4
Sulphur Dioxide (SO_2)	60	6
Dust	10	1

In this context, amounts of emissions released as a result of the activities conducted in scope of the Project will be calculated and compared with the values provided above. If the calculated emissions exceed the limits defined in the regulation, air quality dispersion modelling studies need to be conducted and contribution of the emission to air pollution will be estimated.

WBG General EHS Guidelines

In addition to the Turkish legislations, the ambient air quality limit values stipulated in the WBG General EHS Guidelines shall be complied. As the WBG General EHS Guidelines – Environmental Air Emissions and Ambient Air Quality state that national legal standards must be followed, the standards set out in national legislation will be followed.

Within the scope of the construction activities, dust is expected to be generated. With proper control measures such as dust suppression, the generated dust amount is expected to be reduced effectively.

Construction Phase Impacts

The major impacts on air quality during the construction phase of this project will be related with the material handling, vehicle movement, excavation and backfilling, compaction works and emissions from heavy construction machinery (trucks, excavators, etc.).

Air pollution will be mainly dust emissions and exhaust emissions as well as Greenhouse Gas (GHG) emissions. The sensitive receptors that will be exposed to these air emissions will be the local population who lives near the construction sites. During construction phase of the project, impacts on air quality will be mainly due to dust emissions caused by:

- Dust emission during the site preparation, excavation, backfilling, and compaction works performed for the construction works.
- Dust emission due to the vehicle movement for transportation of various construction materials to the project site.
- Exhaust emissions from vehicles used in construction activities.
- GHG emissions generated from vehicles and machinery in small amounts.

These air quality impacts will be limited in terms of area and short-term since there will be a limited number of equipment and machinery operating on site. In addition, both the sewerage network and water distribution network will follow the cadastral roads and the construction will be performed gradually. Therefore, the receptors will be limited to the ones located near the construction sites. Necessary mitigation measures described in **Hata! Başvuru kaynağı bulunamadı.** and Table 6-2**Hata! Başvuru kaynağı bulunamadı.**PI to be taken are designated to decrease possible impacts. With the implementation of these mitigation measures, the air quality impacts will be low, short term, local, and low in significance.

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 preparation of the site and the construction activities, pipe placement /replacement, trench filling, and paving and asphalting. Noise impacts will not exceed the levels presented in the WBG General EHS Guidelines or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site. Construction of the sewerage and water distribution network will affect inhabitants living on the network route, but this impact will be short term and low in magnitude.

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 impact is assessed as direct and negative with short-term duration, local and low in significance.

The mitigation measures against the air quality, noise and vibration during the land preparation and construction phase are given in *Table 6-1* in **Hata! Başvuru kaynağı bulunamadı.**.

Operation Phase

The operation phase of the Project is not expected to cause significant dust and exhaust emissions. The only operation that will potentially result in emissions is the operation of the pumping station, which is expected to be at a negligible level.

5.2.2. Soils and Contaminated Land

Construction Phase

The excavation of trenches for the water pipes will have some minor impacts on the soil environment. However, these impacts are localized and restricted to the construction sites. The potential impacts will consist of:

- Soil contamination risk due to leakage and spill of fuels, paints and oils that will be used for the construction machinery and equipment;
- Disturbance of the natural soil and land structure as a result of soil stripping, levelling, excavation and filling activities, work of construction machinery,
- Mixing of soil layers as a result of excavation and filling activities,
- 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,
- Piling of soil along public access routes, and
- Improper replacement of soil to its original position during filling process.

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

Operation Phase

In the operation phase of the Project, the activities will have a limited physical interaction with the environment. No additional significant direct impacts on topography, soil and land use are anticipated under normal operating conditions. Impacts of operation phase of the Project are related with the risks that would arise during repair and maintenance works, such as spillage/leakage of oil, and chemicals to soil. Therefore, the impact significance is determined as low. With the implementation of mitigation measures, the residual impacts will be negligible in significance. The defined mitigation measures are presented in Section 6.

5.2.3. Water Resources

Water Supply during Construction Phase

During the construction phase, employees' needs and dust suppression will create water supply requirement. The water used for dust suppression and utility water will be supplied from the municipal network and/or by tankers. 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 0.23 m³ (TurkStat, 2018). Although the number of personnel required is not determined yet, it is assumed as 100 by engineering judgement. Therefore, the daily water requirement of employees during the construction phase will be;

100 employees x 0.23 m³/employee.day=23 m³/day

Bottled water will be used for the drinking water needs of the personnel. The quality of drinking water that will be supplied to the Project shall be in compliance with the Regulation Concerning the Water Intended for Human Consumption together with the internationally accepted standards, such as World Health Organization (WHO) and WBG's General EHS Guidelines.

For the dust suppression water requirement of the Project Area during the construction phase of the Project, the calculation is made according to the equation provided in Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures. The required water is calculated as 0.092 L/m^2.

C=100-(0.8.p.d.t)/i

C= Average percentage of control efficiency
p= Average hourly daytime evaporation rate (inch)
d= Hourly daytime traffic rate (h-1)
t= Implementation timeframe
i= application density in l/m^2
e= Annual average evaporation (inch)

By using the equations above;

C= Calculation was made by assuming the average control efficiency percentage as 90%.

Monthly Maximum Open Surface Evaporation = 22 mm taken from the General Directorate of Meteorology.

90 = 100 – (0.80 x (0.0049/25.4) x 22 x 16 x 17) / i

From here, i= 0.092 L/m^2 is found.

Water Supply during Operation Phase

During the operation phase of the Project, the water supply requirement will arise due to employee needs. The total amount of water required by employees is calculated as in the previous section. Although the number of personnel required is not determined yet, it is assumed as 10. Therefore, the daily water requirement of employees during the operation phase will be;

10 employees x 0.23 m³/employee.day=2.30 m³/day

Summary of the Project's water requirement according to its phases is provided in Table 5-6.

Table 5-6. Water Requirement of the Project

Project Phase	Intended Use	Water Requirement		
		m³/h	m³/day	m³/year
Construction	Drinking water / Tap water	0.96	23.00	8,395
Construction	Dust Suppression	1.25	10.00	3,650
Operation	Drinking water / Tap water	0.10	2.30	840

Construction Phase Impacts

It is anticipated that minor short-term negative impacts due to surface runoff, muddy water filling the excavation trenches, etc. would occur during construction.

Construction activities may also pose the potential for release 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 and groundwater contamination during 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.

For the employees, portable toilets will be installed at the construction site. The wastewater will be collected with the help of septic trucks and sent to the municipal wastewater treatment plant.

In the construction phase of the project, the surface water quality may also be affected by any spill/leakage situation since there are 17 creek and one irrigation channel crossings in the transmission line route. Creek crossings will be carried out by underpass pipe crossing while irrigation channel crossing will carried out with a suspended pipe. An official application has been made for the water channel passage by KOSKI, and technical files are expected to come from the Konya Cadastre Directorate. Permission procedures will be completed after the technical files arrive. The impact on the surface water resources will be direct and negative with short - term duration, local and negligible in significance when the mitigation measures are fully implemented.

In construction phase, impact on groundwater may be seen due to accidental oil leakages in the areas where the works with construction machinery are carried out as well as improper disposal of wastes. This may affect the groundwater quality in the project area, if necessary, mitigation measures are not taken. However, it is possible that the impacts will be negligible if the mitigation measures outlined in Section 0 are followed and good engineering practices are adopted.

Operation Phase Impacts

The project components do not expect to interfere with both surface water and groundwater bodies. Even there will be required repairing due to broken pipes, because the pipes are transferring clean drinking water, no adverse impact are expected. The only incident that will cause pollution of water resources is the accidental spill/leakage of fuel and oil from machinery during maintenance activities. In these cases, due to the short duration and insignificant amount of leakage material during these accidents, these impacts can be easily managed.

To conclude, operation phase impacts of the Project is generally found to be negligible when mitigation measures are implemented. Otherwise, the impacts are expected to be low and short-term on water resources.

5.2.4. Noise and Vibration

Construction Phase Impacts

During the construction phase of the Project the noise would be potentially generated by transportation vehicles, machinery and outdoor equipment to be used for preparation of the site and the construction activities, pipe placement/ replacement, trench filling, paving and asphalting.

Construction of the drinking water transmission line will affect inhabitants living on the transmission line route, but this impact will be short-term and low in magnitude.

The noise level of the equipment and machinery will be kept to a minimum with proper mitigation measures such as use of silencers and with regular maintenance.

In the project area, there will no blasting activity. Vibration due to construction activities will be minimal and the effect on humans or the structures in the vicinity will be low in magnitude. The impact is assessed as direct and negative with short term duration, local and low in significance. Vibration impacts of Project for construction phase are generally found to be negligible when mitigation measures are implemented.

Operation Phase

During the operation phase of the Project, noise will be generated from pumping station equipment. The level of noise generated from the equipment is expected to be constant as all equipment will be in operation during the pumping operation hours (24 hours).

The noise will also be generated by repair and maintenance works. Vehicles and maintenance equipment and machinery will be used temporarily, and the number of vehicles will be limited during repair and maintenance works. Therefore, noise impact resulting from these works is not expected to be significant during the operation phase of the project.

The impact is assessed as direct and negative and permanent, local and low in significance.

5.2.5. Biological Environment

The potential impacts of the proposed construction activities for the Project on the biological environment are considered. Potential impacts will affect terrestrial and aquatic flora-fauna directly or indirectly. Therefore, impacts of the project activities can be further divided into the target group of biological elements as terrestrial and aquatic. Mitigation measures to be taken to minimize these impacts are presented in Section VI.1.

The impact of project activities on ecological components is related to the magnitude of the impact and the vulnerability of the recipient. The sensitivity of terrestrial flora-fauna species was determined according to the matrix given in Table V.14. It is known that the features of each step in the systematic classification of species are different from each other. Accordingly, the effect levels will differ from species to species.

Sensitivities of flora and fauna species determined within the project area are explained in detail in Section IV.2 Ecology and Biodiversity. Criteria for significance for ecological components are described in the following topic.

Impact Assessment Criteria

The impact assessment criteria for the impacts on ecology and biodiversity were determined as high, moderate, or low, based on evaluating the magnitude of impact and sensitivity/value of the receptors/resources. WB OP 4.04 definitions are used in habitat and species assessments.

Based on these criteria, sensitivity criteria for ecological components within the scope of the Project have been determined as given in Table 5-7.

Table 5-7. Criteria for Sensitivity/Value of Resource

Ecosystem Component	Sensitivity/Value Level		
	High	Medium	Low
Designed Areas	Internationally Recognized Areas (e.g. UNESCO Natural World Heritage Sites, UNESCO Man and the Biosphere Reserves, KBAs, and wetlands designated under the Convention on Wetlands of International Importance (the RAMSAR Convention))	Nationally designated areas.	N/A
Habitats	Habitats are natural or critical natural habitat under the WB OP 4.04 definitions and or Habitats that trigger critical habitat under the following WBG/IFC PS6 Criteria: • Criterion 4: Highly threatened and/or unique; and/or ecosystems • Criterion 5: Key evolutionary processes • 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 following WBG/IFC PS6 Criteria: • Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species; • Criterion 2: Endemic and/or restricted-range species; and/or • Criterion 3: Migratory and/or congregator species.	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/range restricted species. Populations of migratory species that represent >1 % of the national (Turkish) population.	Locally important populations of Near Threatened (NT) or Vulnerable Species (VU), or locally important populations of species listed on Annexes to the Bern Convention.

Construction Phase Impacts on Ecology and Biodiversity

In the construction phase of the project, some direct or indirect impacts are expected to occur. The loss of habitat and biodiversity might concern the project area. However, most of the transmission line is planned within the existing roads, therefore, there will be no habitat or vegetation loss in these already altered areas. As for the areas, where the transmission line is not along the existing roads, steppe and ruderal vegetation is observed. There is no critical natural vegetation that harbors wildlife, so it is not expected that there will be any sensitive habitat and vegetation loss during the construction activities of the Project.

Another direct impact of the construction phase will be the vehicle traffic. The fauna species, which have limited mobility will be prone to fauna mortality.

Indirect impacts of construction include disturbance in terms of noise and visual nuisance, and pollution. Some of the secondary impacts have been identified as changes in soil and water quality composition, air quality (dust generation, etc.), waste generated due to project activities, and noise pollution that might impact species' behavior, especially that of fauna elements.

Internationally and Nationally Recognized Areas

No national or international protected area exists in or around the Project area.

200 m of the transmission line is within the Geyikli Mountains KBA/IBA, as shown in Figure 4-20.

Based on the assessments given in Table 5-7, KBAs were considered highly sensitive areas. Field studies were conducted on the line and around the Geyikli Mountains KBA/IBA area. The line will pass through the existing cadastral roads. The area to be affected by the construction of the line in the KBA consists of

anthropogenic steppe and ruderal vegetation. It has been determined by literature and field studies that there are no protected species in this region.

As a result, the impact on the internationally recognized areas is assessed as negligible. Dust and noise formation due to construction activities may also have a negative impact on fauna species. All these effects can be eliminated by taking mitigation measures (see Table 6-1).

Construction Phase Impacts on Biodiversity

Terrestrial Flora

The significant impacts of the construction phase on the terrestrial flora would be habitat and vegetation loss or damage. The project area has steppe and ruderal vegetation. Since no sensitive habitat or flora species are found in the area, no significant impact is expected. The Project will be realized in an already modified area.

Impacts of construction activities on the terrestrial environment will include dust, but this will be a short-term impact. When necessary, measures are taken mentioned in Section 0, and after the construction activity is over, it is expected that the composition of the plant species will return to its original state in time.

According to the WB OP 4.04 "Natural habitat" definition, the project area does not have any sensitive natural habitat and wildlife. The impact on the biological environment during construction will be limited. Therefore, it is considered that all the impacts will be minimized or eliminated; if necessary, precautions are taken. The impact on the flora species is assessed as low in significance.

Terrestrial Fauna

Due to the anthropogenic effects in and around the project area, it is determined that large mammal species do not use the project area for nesting. Some minor impacts resulting from the construction activities on fauna species can be seen. These impacts will mainly consist of secondary effects. Due to the construction activities, mortalities may be observed due to potential disturbance on the fauna species and increase in traffic. At the same time, dust, and noise formation due to construction activities may also have a negative impact on fauna species. All these effects can be eliminated by taking appropriate measures. The impact on the fauna species is assessed as direct and negative and low in significance.

According to the evaluations given in Table 5-7 there are no sensitive flora and fauna species in and around the project area. In Table 5-8 the impact of the project on terrestrial flora and fauna species is evaluated.

Table 5-8. Assessment of Impacts on Terrestrial Habitats and Flora/Fauna

Affected Ecosystem Component	Source of Impact	Project Phase	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation
Terrestrial Habitats and Flora/Fauna	There will be a risk of damage to the fauna by the traffic Changes in the composition of soil and air (dust generation, etc.) quality Solid and hazardous wastes to be generated due to project activities Noise pollution that might impact species' behavior, especially that of fauna elements	Construction	Disturbance of fauna species in the vicinity of the Project area Loss of flora populations in the vicinity of the Project area	Negative	Low

Aquatic Environment

As a result of the field studies, it has been observed that the creeks passing over the line are dry, and no species that constitute aquatic biodiversity have been identified. The fish species that may be found in the case of a seasonal flow in the creeks are given in Table IV.20. According to Table V.14, there are no sensitive aquatic species and habitats in and around the project area.

Any change in the aquatic environment will inevitably affect biodiversity, and these impacts can be reduced to a low level with the relevant mitigation measures. These effects are considered negligible. The measures that need to be taken against the impacts are presented in Section VI.1.

Operation Phase Impacts on Ecology and Biodiversity

No negative impact is expected on terrestrial and aquatic flora and fauna during the operation phase. The impact of the operation phase of the project on ecology and biodiversity has been determined as negligible. Following the construction phase, wildlife and biodiversity are anticipated to retain their former state.

5.2.6. Landscape and Visual Amenity (Aesthetics)

Construction Phase Impacts

Drinking water transmission line works will be performed in some neighborhoods of relevant districts and this will create nuisance for the people living or working nearby the sites. The landscape and visual impacts will result mostly from the dust to be generated, materials and excavated soils to be stored at the site and construction site formation in the residential areas. However, drinking water transmission line trenches will be backfilled following the pipe installations, so the effect would be short-term in nature. In order to mitigate the impacts, which are assessed to have medium significance, the transmission line construction works will be limited to the construction site boundaries, the construction sites will be formed in a proper manner, the construction activities will be finished in timely manner, the storage areas for the materials will be selected carefully and the stored materials will not be left for long periods on the storage areas.

These impacts can be sustained at a low level with the mitigation measures given in Section 0. Therefore, the significance of the impacts after implementation of these mitigation measures would be low.

Operational Phase Impacts

In operational phase, no impacts on landscape other than the pumping station building are expected. The aesthetics impacts will be mostly related to repair and maintenance works, which will be a short-term impact. During the maintenance works, as the works will be done in a limited area, 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 landscape.

Therefore, project impact on landscape during the operation phase is evaluated as negligible with the implementations detailed in Section 0.

5.2.7. Resources and Waste

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 land preparation and 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 section 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 and construction and operation phases of the Project can be listed as contaminated vessels, cloths and overheads, waste batteries and accumulators, waste oils, etc.
- Excavation and construction waste

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 5-1. 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, non-hazardous, recyclable, etc.), reuse of generated waste at 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.

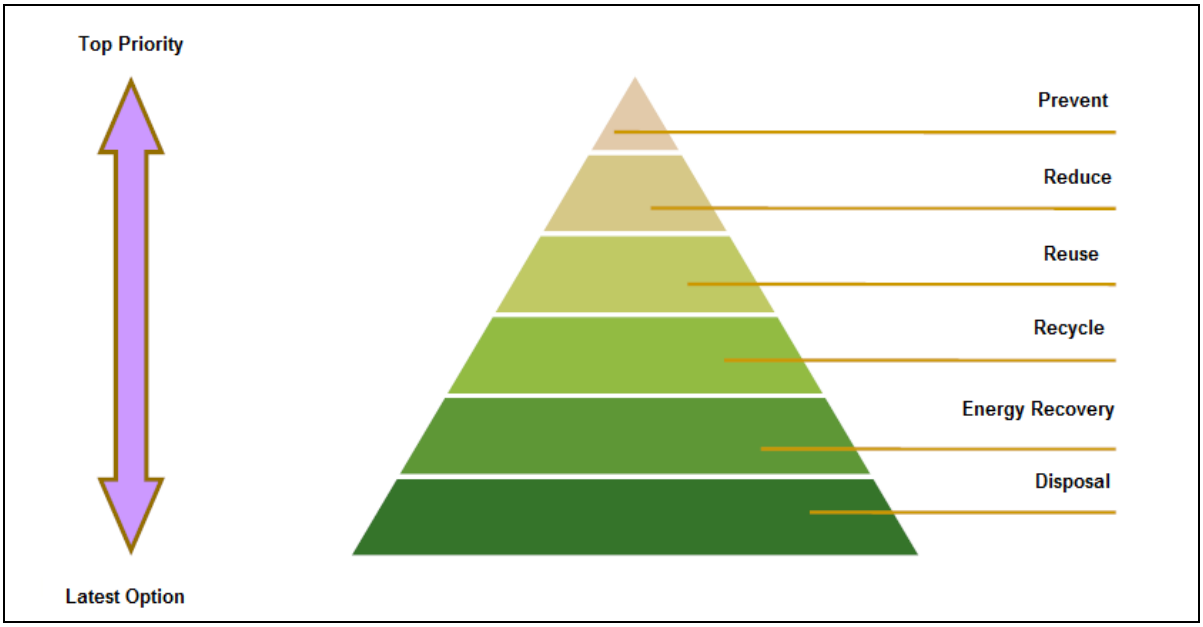


Figure 5-1 Waste Management Hierarchy

Construction Phase Impacts

During construction phase of the Project, activities such as topsoil removing, levelling, construction and installation of main operation and auxiliary units, procurement, transportation and assembly of units and equipment 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 wastes, special wastes, excavation and construction wastes (e.g. scrap metal, wood, concrete waste, etc.),

and waste system equipment (panels, cables, electronic components). Hazardous and special wastes 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 construction phase of the Project will be managed in accordance with the waste management hierarchy (avoidance, re-use, recycling and disposal). Contractors will take mitigation measures described in Section VI.1 but will not be limited to these measures.

All the wastes to be generated during the land preparation and construction 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.

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. 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 licensed by the MoEUCC.

Table 5-9 lists the types of waste that can be generated during the construction phase of the Project and their waste codes according to the waste lists given in the annexes of the Waste Management Regulation

Table 5-9 List of Possible Waste Types to be generated during Land Preparation and Construction Phase of the Project

Waste Code	Definition of Waste Code
13	**Oil Wastes and Liquid Fuel Wastes (Excluding Edible Oils, 05 and 12)**
13 02	Waste Engine, Transmission and Lubrication Oils
15	**Waste Packages, Unspecified Absorbents, Wipes, Filter Materials and Protective Clothing**
15 01	Packaging Wastes (Including Packaging Wastes Separately Collected by the Municipality)
15 02	Absorbents, Filter Materials, Cleaning Cloths and Protective Clothing
16	**Wastes Not Specified Otherwise in the List**
16 06	Batteries and Accumulators
17	**Construction and Demolition Wastes (Including Excavations from Contaminated Sites)**
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 Wastes
20	**Municipal Wastes Including Separately Collected Fractions (Domestic and Similar Commercial, Industrial and Institutional Wastes)**
20 01	Separately Collected Fractions (Except 15 01)
20 03	Other Municipal Wastes

Source: Annex-4 of Waste Management Regulation

Municipal wastes within the scope of the Waste Management Regulation are referred to as domestic wastes or commercial, industrial and institutional wastes similar to domestic wastes 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 wastes will be stored separately from hazardous wastes and recyclable wastes and will be collected regularly by district municipalities and send to the Konya Solid Waste Landfill Facility of Konya Metropolitan Municipality located in the Central District. The infrastructure of the facility is sufficient for managing the waste produced in the project site.

In order to determine the amount of municipal waste to be generated at site, the average daily municipal waste per person is taken as 1.08 kg according to the municipal waste statistics of TurkStat in year 2014 (TurkStat, 2014). 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 waste:

100 people x 1.08 kg/person.day=108 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 5-2 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.

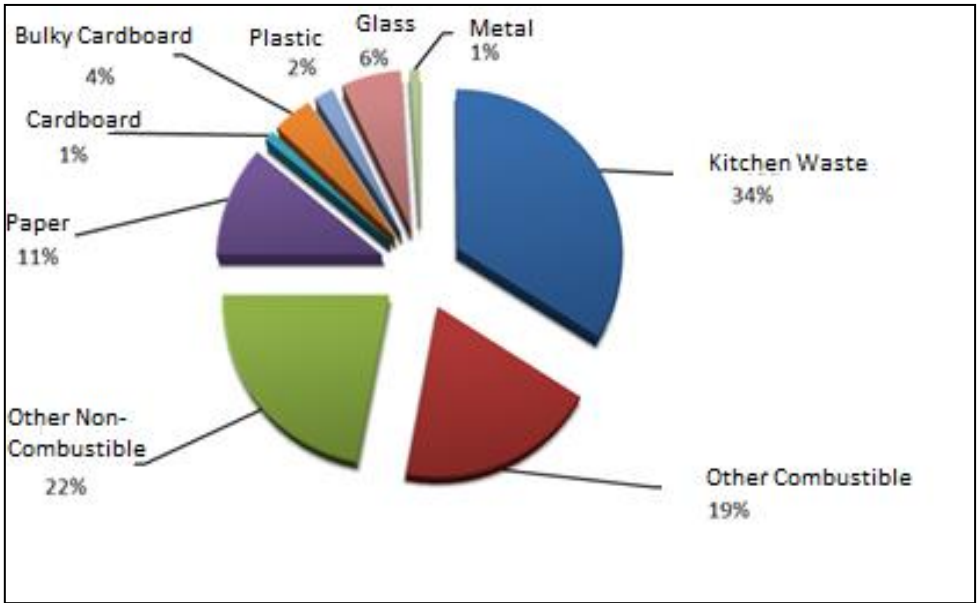


Figure 5-2 Composition of Municipal Waste (*former Ministry of Science, Industry and Technology, 2014)*

Considering the information provided in Figure 5-2, it is also valid for the municipal wastes 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 approximately 5.4 kg of food waste and 40 kg of separately collectable and recyclable waste will be generated daily during the construction phase of the Project.

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 due to the fact that the tire changes of the construction machines and other vehicles to be used at this phase will be carried out at the 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. The negligible amount of medical waste generation might happen as a result of the first-aid applications.

Topsoil removal 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 Wastes will be complied with.

The construction machinery will require oil changes during the land preparation 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 licensed for the maintenance of the machinery. Thus, there will be no waste oil generation in the land preparation 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 (*Ministry of Environment and Forestry, General Directorate of Environmental Management, 2009*). According to this, the annual waste battery production of 100 people to be employed during the construction phase of the Project is calculated as 14 kg.

No significant impact resulting from waste generation is expected due to the nature and scale of the Project. However, the potential impacts can be reduced to a low level with the mitigation measures given in Section VI.1. Therefore, the impact is assessed as direct and negative with short-term duration, local and low significance. However, mitigation measures will be proposed in the following sections in order to prevent and/or minimize likely impacts.

Operation Phase Impacts

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 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. Konya Solid Waste Landfill Facility of Konya Metropolitan Municipality is located in the Central District. The infrastructure of the facility is sufficient for managing the waste produced at the Project site.

10 workers are expected to be employed in the Project's operation phase. Therefore, municipal waste generation will be 13.5 kg/day and using the same approach as in land preparation and construction, the recyclable portion of the municipal waste and the amount of food waste will be 10 kg/day and 1.35 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.

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

Table 5-10 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 Annex-4 of Waste Management Regulation.

Table 5-10 List of Possible Waste Types to be Generated During Operation Phase

Waste Code	Definition of Waste Code
13	**Oil Wastes and Liquid Fuel Wastes (Excluding Edible Oils, 05 and 12)**
13 02	Waste Engine, Transmission and Lubrication Oils
13 03	Waste Insulation and Heat Conduction Oils
15	**Waste Packages, Unspecified Absorbents, Wipes, Filter Materials and Protective Clothing**
15 01	Packaging Wastes (Including Packaging Wastes Separately Collected by the Municipality)
15 02	Absorbents, Filter Materials, Cleaning Cloths and Protective Clothing
16	**Wastes Not Specified Otherwise in the List**
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 Wastes Not Described otherwise
20	**Municipal Wastes Including Separately Collected Fractions (Domestic and Similar Commercial, Industrial and Institutional Wastes)**
20 01	Separately Collected Fractions (Except 15 01)
20 03	Other Municipal Wastes

The impact resulting from the generation of the waste is assessed as direct and negative with short-term duration, local and low in significance. However, mitigation measures proposed in Section 0 in order to prevent and/or minimize likely impacts will be implemented.

5.2.8. Climate Change

According to Intergovernmental Panel on Climate Change (IPCC) Guideline for National Greenhouse Gas Inventories, waste sector includes the following components:

- Solid waste disposal (4A)
- Biological treatment of solid waste (4B)
- Incineration and open burning of waste (4C)
- Wastewater treatment and discharge (4D)
- Other (4E) (IPCC, 2006)

The project is not a part of any of the above-listed components. In addition, the activities which are subject to greenhouse gas monitoring, reporting and verification are presented under heading “Activities subject to monitoring, reporting and verification of greenhouse gas emissions” in Annex-1 of the Regulation on Monitoring Greenhouse Gas Emissions (Official Gazette dated May 17, 2014 and numbered 29003), and none of the components of this Project are listed in Annex-1 of the Regulation.

Construction Phase Impacts

The Project’s contribution to climate change during the construction phase will be due to the emission of GHG. The majority of greenhouse gas emissions will be due to construction machinery/equipment usage. The major greenhouse gas emission will be CO_2 emissions resulting from the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of methane and nitrous oxide will also be emitted during fuel combustion. Therefore, these emissions will contribute to climate change.

The project’s contribution to climate change through GHG emissions is assessed as a negative and direct impact. The impact’s duration will be short-term. Although the sensitivity of the receptor is considered

as medium, due to the usage of small number of construction machinery/equipment, the significance of the impact is considered as low. With the realization of proper mitigation measures proposed in Section VI.1 in Table 6-1, GHG emissions can be minimized.

Operation Phase Impacts

The project's contribution to the climate change during the operation phase will be similar to the contribution explained for the construction phase except the operation of less machinery/equipment usage and therefore significance of the impact will be negligible. In the operation phase, usage of fossil fuel burning equipment/machinery usage will be limited.

With the realization of proper mitigation measures, GHG emissions can be minimized and prevented from increasing.

5.2.9. Natural Hazards

The Project is not expected to have any impact on natural hazards like flood and mass movements during both construction and operation phases. The detailed baseline information of natural disasters is provided in Section IV.1.4.

As mentioned before in Section IV.1.4, the ground accelerations of Ahirli, Seydisehir and Yalihuyuk Districts are classified as between 0.0-0.1 g, indicating low hazard. There are no active faults identified by MTA (Mineral Research and Exploration) for the region where the project area is located. In addition, considering the Distribution of Disaster Events maps prepared by former Ministry of Public Works and Settlement, records of rockfalls and floods are observed in Seydisehir District, however, no natural disasters such as earthquakes, active and potential mass movements (landslides). Ahirli and Yalihuyuk districts have no records of rockfalls, floods, earthquakes and landslides.

As a result, there will no significant natural hazard impact on the project due to the location of the Project.

5.3. Impacts on Socio-Ecomomic Environment

Infrastructure projects have both negative and positive impacts from socio-economic standpoint. Increase in traffic due to construction works, operation of construction machinery, waste generation, and noise and dust emission generated by construction activities can be characterized as negative impacts; while employment and procurement opportunities can be described as positive impacts. Both positive and negative impacts are explained separately for construction and operation phases under this section.

During the construction phase, potential exposures may affect disadvantaged/ vulnerable individuals/groups and/or refugees within the project area, and direct stakeholders who are sensitive to the environmental and social impacts of the project and are expected to be more affected by these impacts. People living in the immediate vicinity of the Project, businesses, vulnerable groups and refugees are the people who come to the project area daily for various reasons and who live in the vicinity of the area where the project will be implemented, may experience complaints such as dust, noise and traffic that may occur during different project phases.

5.3.1. Employment and Procurement Opportunities Created by the Project

Construction Phase Impacts

The workforce needed during the construction phase of the Project (100 employees) will be sourced locally, regionally and nationally. Most of the unskilled labor is expected to be provided locally. Skilled labor is

expected to be provided nationally in case it cannot be provided locally and regionally. The general approach of construction companies operating in Türkiye is to employ labor from the local communities, primarily to reduce costs associated with travel and accommodation.

Employment of local people will provide significant benefits to those who are employed; however, this will be a minor portion of the entire population. The employment of individuals from local communities will however be beneficial as it is expected to lead to improved relationships between the Project and local communities.

Another benefit of the Project will be indirect employment opportunities and these will be associated with the project supply chain (goods and services) and spending of project employees in local communities.

Employment of non-locals, as well as the increase of incomes of local employees, may also bring in some minor benefits for local communities, associated with increased spending in the project area. Due to the fact that Sugla Group districts are all small-scale residential areas and the planned transmission line is somewhat long, this positive impact is anticipated to be somewhat significant.

In addition to the employment opportunities, the Project will require certain services and goods. If it is possible and feasible to do so, selection of local procurement options will create minor positive impacts on regional level.

Before and during construction, the construction contractor and their subcontractors will provide clear information on the recruitment process, with particular emphasis on informing local communities of employment opportunities through different channels such as mukhtars and local associations.

Operation Phase Impacts

In the operation phase of the Project, 10 employees are expected to be employed. In order to avoid the negative impacts of the workforce influx, KOSKI will give priority to the local people.

KOSKI will take all necessary actions and measures for labor and employment to be in compliance with Turkish legislation, international standards and the requirements of this ESMP. KOSKI will aim at employing local workers to the extent possible, in order to increase the Project's local benefits. The recruitment processes will be transparent, public and non-discriminatory, providing equal opportunities with respect to ethnicity, religion, language, gender and sexuality.

5.3.2. Infrastructure and Services

Construction Phase Impacts

The transportation of the construction materials and products to the construction sites, vehicle movement during the construction activities and need to relocate services/utilities (and therefore dig up roads and access ways) will create temporary increase in traffic, mainly of heavy vehicles on the existing road network and pose a risk to pedestrians. The additional traffic can lead to delays in travel times and increased congestion, particularly in critical locations that are already subject to intense traffic.

Since the project component only consists of the construction of the drinking water transmission line and pumping stations/reservoirs, excess traffic load will be expected especially when lines are being constructed near the roads in the construction phase.

The construction works and waste disposal during the construction phase of the Project will be performed by contractors. Therefore, any damage to infrastructure will be repaired or compensated by contractors promptly in accordance with the requirements of the responsible authority, such as General Directorate of Highways (KGM) or KMM.

During the course of construction phase, grievance redress mechanism, which is detailed in Section VII.3, will be in effect to resolve the local community's nuisance and disturbance.

The Project's impact on traffic during the construction is assessed as a negative and direct impact. The impact's extent will be local, and the duration will be short-term. Due to the usage of small number of construction machinery/equipment, the significance of the impact is considered as low regarding when necessary mitigation measures are implemented.

Operation Phase Impacts

The traffic will only be affected during repair and maintenance works on the drinking water transmission lines in the operation phase activities. Similar to the impacts anticipated during construction phase, movement of heavy vehicles can contribute to deterioration of existing roads as well.

The project's impact on traffic during operation phases is assessed as a negative and direct impact. The impact's extent will be local, and the duration will be short-term. The sensitivity of the receptor is considered as low and due to the usage of small number of construction machinery/equipment, the significance of the impact is considered as negligible when necessary mitigation measures are implemented.

5.3.3. Archaeological and Cultural Heritage

Construction phase

No significant impacts on archaeological and cultural heritage are expected in the construction phase of the Project.

As required by Article 4 of Law on the Conservation of Cultural and Natural Properties (Law No. 2863), Chance Finds Procedure will be implemented during land preparation and construction works (see Annex-4). In this context, related Conservation Board or Museum Directorate will be informed latest in three (3) days in case of finding any movable or immovable cultural asset by chance during construction works. Construction works will be stopped immediately, related site will be secured by the Contractor and works will not proceed until official information is received. In case of result of any damage on protected areas or cultural assets due to the Project during the construction phase, the damage will be compensated by the Contractor.

The impact is assessed as direct and negative with short term duration, on-site and low significance.

Operation phase

No significant impacts on archaeological and cultural heritage are expected in the operation phase as there is no activity other than the maintenance/repair works, which will be limited.

5.3.4. Labor and Working Conditions

Although the number of personnel to be recruited is not yet decided, it is estimated 100 workers will be employed during construction and 10 personnel will be employed for operation phases. During the recruitment process, priority will be given to local people by KOSKI and contractors.

Overall, labor and working conditions for the construction and operation phase include the issues listed below:

- Working Conditions and Management of Worker Relationship,
- Protecting the Work Force,
- Occupational Health and Safety,
- Workers Engaged by Third Parties and the Supply Chain,

Workforce will be provided with written contracts specifying working hours and other work conditions, be recruited with no discrimination based on gender/religion and ethnicity. In addition, workforce will be paid wages at least national minimum level.

Commitments on labor and working conditions are concluded with a range of mitigation measures for managing labor-related risks and impacts in Section VI.1.

5.3.5. Protecting the Work Force

KOSKI will ensure measures to prohibit child labor and forced labor. In this respect, children under 18 years of age will not be employed during the construction and operation stages. Contractors will develop an age verification system to ensure no one under 18 years old is involved in project activities.

All Turkish Laws and International Labor Organization Conventions (ILO) related to child labor, forced labor, discrimination, freedom of association and collective bargaining shall be complied with.

Türkiye is party to a multitude of ILO conventions, including but not limited to conventions on: equal treatment of employees, gender equality, child labor, forced labor, Occupational Health and Safety (OHS), right of association and minimum wage.

5.3.6. Occupational Health and Safety and Working Conditions

The construction phase of the Project includes excavation, backfilling and the use of heavy-duty vehicles. As described in the WBG EHS Guidelines for Water and Sanitation, work at sanitation facilities is often physically demanding and may involve hazards such as open water, trenches, and slippery walkways, working at heights, working in confined spaces, energized circuits, and heavy equipment. Vehicular movements can cause accidents resulting in injuries and death. In addition, working in confined spaces can lead to various damages due to oxygen deficiency and risk of explosion. Relevant precautions in case of exposure to hazardous chemicals are described in Table 6-1 and Table 6-2.

Occupational Health and Safety (OHS) risk might arise due to risk of pollution, emission of dust and generation of noise during the site preparation and construction works as well. In addition, risks of GBV and sexual abuse, exploitation and harassment might arise. Training for labor force in these subjects will be provided. Also, training for employees regarding the Code of Conduct (see Annex-5) will be conducted.

OHS risks and impacts should also be managed and mitigated by OHS Management Plan and Risk Assessment (including Emergency Plans) to be prepared by the Contractor during construction and by the Project Owner during operation.

Within this regard, workers' exposure to work-related occupational health and safety risks is assessed as direct and negative with short term duration, local and high in significance. However, with the implementation of mitigation measures proposed in Section 0, these impacts/risks will be reduced to low in significance.

For the planned transmission line Project, there will be a labor camp site within the project area. It is planned to employ 100 people during the construction phase of the project. Workers will be recruited from local people and the labor camp site to be established for the workers will meet the standards for worker accommodation prepared by International Finance Corporation (IFC) and European Bank for Reconstruction and Development (EBRD) and approved by the WB[7]. On the other hand, it is planned to employ 10 people during the operation phase, accommodation will be provided for skilled workers. Since the number of employees in the operation phase is low, it will not have a negative impact on the region.

5.3.7. Workers Engaged by Third Parties and the Supply Chain

KOSKI has the adequate ability and capacity to manage the implementation of the project and in particular the E&S. Also, ESMS of KOSKI has available staff and capacity to ensure ESMP implementation.

KOSKI will ensure that Contractors are reputable and legitimate enterprises and have an appropriate ESMS that will allow them to operate in a manner consistent with the labor conditions provided by KOSKI.

KOSKI will monitor the performance of Contractors such that the human rights policy and labor rights of all workers are exercised properly and include suitable non-compliance measures in their contracts.

KOSKI will ensure that workers of Contractors have access to the overall grievance redress mechanism to be established for the laborers in the scope of the Project.

KOSKI will monitor its primary supply chain for safety issues related to supply chain workers, and where necessary KOSKI will introduce procedures and mitigation measures to ensure that suppliers are taking steps to prevent or to correct life-threatening situations.

In order to realize those, KOSKI will prepare a Contractor Management Plan before the construction phase and ensure its implementation.

5.3.8. Community Health, Safety and Security

Construction Phase Impacts

The community health, safety and security impacts of the Project are mostly limited to the construction phase. In the construction phase, emissions of gaseous pollutants and fugitive dust from equipment and machinery used, noise generation, poor handling of wastes to be generated, requirement to shut down the existing water distribution network and/or specific sections for construction works and risks associated with community encroachment might create negative impacts on community health, safety and security. Impacts associated with emissions, noise and waste generation will be managed with the proper implementation of mitigation measures mentioned in Section VI.1.

Construction works will involve increased traffic of heavy vehicles and equipment at local level and traffic interruptions. Accidents and incidents could result from traffic operation while transporting equipment and materials to the construction sites as well as from truck and vehicle movements. The significance of the impact is considered low.

[7] https://documents1.worldbank.org/curated/en/604561468170043490/pdf/602530WP0worke10Box358316B01PUBLIC1.pdf

Moreover, the construction activities may prevent pedestrians from crossing through road closures. As a mitigation measure, the pedestrian crossings will be built at the most crowded streets. The significance of the impact is considered as medium before the implementation of the mitigation measures and it will decrease to a low significance level.

The road closures and deterioration in the road structure may serve as a barrier to the daily activities of persons with disabilities and vulnerable/disadvantaged individuals/groups. The information about these people in the Project area is given in Section 4.3. Also, construction works not properly managed pose a hazard for many disabled people and particularly blind and partially sighted pedestrians. Impacts on disabled people and vulnerable groups will be managed with the proper implementation of mitigation measures mentioned in Section 0.

The construction waste will be managed as defined in the Resources and Wastes section in order to minimize the negative effects on community health, safety and security.

In addition, it will be ensured that situations such as water and energy cuts do not occur during the construction period. However, in the event of a possible occurrence, necessary mitigation methods will be applied to minimize the impact.

Another risk would be community encroachment to the active worksites. The risks associated with this issue would be easily mitigated to negligible significance through implementation of mitigation measures presented in Section 0.

Operation Phase Impacts

Similar to the impacts during the construction phase, improper handling of waste would create negative impacts on community health and safety. The significance of the impact would be low. In the operation phase of the project, there would be times that the pumping station needs shutdown due to planned or unplanned maintenance works maintenance or any other foreseen or unforeseen challenges, and the water supply will be stopped due to broken pipes and their repairing processes.

Similar to the construction phase, community encroachment/trespassing to the active worksites are also a risk in operation phase. The risks associated with this issue would be easily mitigated to negligible significance through the implementation of mitigation measures presented in Section 0.

6. MITIGATION AND MONITORING PLANS

The purpose of the Mitigation and Monitoring Plans is to apply mitigation measures to reduce the identified impacts of the Project, describe the roles of the participating parties and key personnel responsible for the implementation of the mitigation measures, and identify procedures to ensure that the mitigation measures are implemented adequately during all phases of the Project through the monitoring plan.

In the following sections, the potential project impacts and associated management and/or mitigation measures are described and the key monitoring requirements and responsibilities for implementation are given in detail.

Mitigation Plan

Impact mitigation measures and activities are developed for all phases of the Project below in compliance with the national legislation as well as international standards. Within this regard, the most stringent among national legislation and WB standards and the most up-to-date legislation will be complied with. Impact mitigation management plan is presented in Table 6-1 and Table 6-2 for land preparation and construction, and operation phases, respectively.

Table 6-1. Mitigation Plan for the Land Preparation and Construction Phase Impacts of the Project

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Physical Environment						
Air Quality	Increase in dust concentration and impact on human health	Adverse	Low	• KOSKI will ensure that contractor will prepare and implement a Dust Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) 30 days prior to commencement of the works and the training regarding this plan will be provided to the employees; • Regular watering of the work area will be carried out, particularly in spring and summer, to reduce the impacts of dust-causing activities such as excavation and backfilling of trenches; • When the wind speed is above 20 km/hour the digging and excavation will not be carried out or only small areas will be excavated and covered and compacted immediately after work is completed or additional measures such as use of dust curtains will be taken; • Inner roads will be covered with materials to prevent dust and these roads will be kept clean; • 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; • Daily backfilling, bedding and covering materials will be stored at temporary storage areas. In order to prevent the materials moving with the help of wind, moistening and compacting of the materials will be carried out; • Loading/unloading will be carried out carefully without throwing/scattering; • Proper covering of trucks will be done that carry dusty materials; • Excavated materials will be covered with nylon canvas, etc. during transportation; • The drop height of potentially dust generating materials will be kept as low as possible; • 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; • Any damage caused by insufficient or lack of dust suppression (transportation of dust to agricultural lands, wind borne dust deposits etc.) measures will be compensated by the Contractor; • Compliance with the air emission limit values stipulated in national legislation and WBG General EHS Guidelines will be ensured; and • 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, etc., if deemed necessary, considering both national and WBG EHS Guidelines limit values.	Included in construction costs	Contractor KOSKI/ Project Implementation Unit (PIU) Supervision Consultant
	Increase in SO_2 PM, NO_x emission and impact on human health	Adverse	Low	• Exhaust systems of the vehicles (daily and periodically) will be controlled regularly. Daily maintenance will be carried out in each shift; and working time of each vehicle will be registered by the operator in order to follow the total working hours for periodic maintenances. Periodic maintenances will be conducted at every 50, 250, 500, 1000, 2000 working hours. Maintenance forms will be filled regularly; • 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; • Vehicles that can provide European Euro VI standards will be selected; • Modern equipment and tools that can provide Exhaust Gas Emission Control Regulation and Exhaust Gas Emission Measurement Devices Inspection Regulation standards, will be selected before the construction activities; • Idling of vehicles and machinery will be avoided; • Provisions of the Regulation on Exhaust Gas Emission Control will be complied during land preparation and construction phase of the Project; and • Relevant provisions of the Industrial Air Pollution Control Regulation and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from construction machinery and trucks and compliance with WBG General EHS Guidelines will be ensured.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
Soils and Contaminated Land	Loss of topsoil	Adverse	Low	• A Soil Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Contractor 30 days prior to commencement of the works and the employees will be trained on the Plan; • Although water transmission line will mainly follow existing roads, for the pasture areas following measures will be taken: o Topsoil will be stripped to a sufficient depth (minimum 30 cm) prior to the start of construction activities; o The slope of the temporary top soil storage area will be less than 5%; o To prevent wind and water erosion, topsoil stripping will not be done earlier than required; and o The disturbed areas and soil piles will be kept moist to prevent wind erosion of the soil. • At the end of construction phase, the stored topsoil will be used for backfilling; • The stripped topsoil will not be used for agribusiness; • The provisions of the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes shall be complied during land preparation and construction phase of the Project and excess excavation material will be re-used as appropriate or disposed of in existing licensed excavation waste storage sites; and • The contractor will take additional mitigation measures, such as soil sampling, in case of a requirement revealed by the monitoring and/or any complaint.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Contamination of soil	Adverse	Low	• 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 construction machinery and equipment and field personnel; • Machinery and equipment will be checked regularly for leaking oil and fuel; • In an event of an accident, leak or spill, necessary repair works and/or replacement of parts will be performed promptly in accordance with the standards; • The fuel required for the construction equipment and vehicles to be used within the site during the construction phase will be supplied primarily from the nearest station; if deemed necessary, fuels that may be stored at the site will be stored in the areas where necessary impermeability precautions (including secondary containment) are taken; • Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources will be complied; and • Wastes and wastewater (rainfall filled in trenches) to be generated during the land preparation and construction phases of the Project will be stored and disposed of in a controlled manner in accordance with the Waste Management Regulation and Water Pollution Control Regulation and in line with the management practices described in this report.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Erosion potential	Adverse	Low	The Contractor will take necessary precautions to minimize the erosion risk as described here but will not be limited to the followings:	Included in construction costs	Contractor KOSKI/PIU

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
				• Construction activities (especially excavation works) will be undertaken in dry weather condition as much as possible; • Stripping of topsoil will not be conducted earlier than required to prevent the erosion of soil (wind and water); • Circulation of heavy machinery to minimal areas will be limited; • Works will be planned in a way to avoid opening up new parts before closing the parts completed as much as possible; • The disturbed areas and soil stockpiles will be kept moist to avoid wind erosion of soil and stockpile height of topsoil does not exceed 2m maximum; • Topography will be restored for slope stabilization immediately after the completion of construction at each location; and • 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.		Supervision Consultant
Water Resources	Change in surface water and groundwater quality	Adverse	Low	• KOSKI will ensure that contractor will prepare and implement a Water Resources Management Plan that is in line with the WB OP 4.01 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 the employees will be trained on the plan; • KOSKI will ensure that contractor will prepare and implement a Pollution Prevention Plan that is in line with OP 4.01 and WBG EHS Guidelines (both general and sectorial) 30 days prior to commencement of the works and the employees will be trained on the plan; • In case the excavated trenches are filled with surface water, groundwater or rainfall, the muddy water in these channels will be discharged, and the water to be discharged will not be directly discharged to the receiving environment. These waters will be discharged to the receiving environment after eliminating the sand and sludge by settling ponds that will be formed at discharge points; • 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 wastewater generated in the construction sites will be connected to the The sewerage network that is connected to (ends with) a licensed wastewater treatment plant having sufficient capacity and operating in line with discharge standards (or environmental legislation).or where the connection is not possible it will be collected into the impervious septic tanks and then discharged into the nearest sewage network by vacuum trucks; • Surface runoff due to watering for dust suppression activities will be prevented; • The water to be used for dust suppression will be followed in m^3; • The wastewater arising from cleaning or washing vehicles and construction equipment will be collected in tanks and disposed of via the septic trucks in line with environmental legislation; • The drinking water transmission line will be constructed as suspended pipe passing over the stream bed without concreting to avoid any damage; • 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 designated storage areas with their secondary containment so as to minimize the risk of soil, surface water and groundwater contamination during construction; • Spill kits will always be available on construction sites; • The discharges resulting from the hydro testing and pressure testing will not be directly discharged to the environment. These will be collected in impermeable containers and will be disposed by transporting to the nearest WWTP or to an active sewer network: and • Silt fences will be used at the 17 creek crossings in Project area to protect water quality and erosion control.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
Noise and Vibration	Increased in noise level	Adverse	Low	• A Noise Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Contractor 30 days prior to commencement of the works and the employees will be trained on the plan; • The machinery and equipment to be used during the land preparation and construction activities will not be operated at the same point/location but homogeneously distributed in the site; • Within the scope of the project, attention will be given to the selection of equipment with low noise level; • Construction works will be performed between 07:00 - 19:00 hours. Unless absolutely necessary, no construction activities will be done at night. In case night operations are deemed necessary and the noise levels would be high, public will be informed one (1) week in advance; • All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic; • Since part of the construction will be carried out within the residential area, there might be sensitive receptors (hospitals, schools, elderly housing, etc.) in the vicinity of the construction sites that could be impacted by an increased noise level. The contractor will identify these sensitive receptors and will take additional precautions (noise barriers, etc.) in those areas as necessary. The construction will be implemented as fast as possible in the areas, where the sensitive receptors are located; • Robust grievance redress mechanism (See Section VII.3) will be established to manage noise related grievances; and • All construction activities will be carried out in compliance with the noise limits set out in the Regulation on Environmental Noise Control (RENC) and noise limits of WBG EHS Guidelines and the contractor will take additional mitigation measures in case of a requirement revealed by the monitoring.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Increased in and vibration level	Adverse	Low			
Wastes	Improper waste management	Adverse	Low	A Waste Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor 30 days prior to commencement of the works to ensure that: • Wastes to be generated within the scope of the Project will be managed in accordance with the waste management hierarchy; • Some amount of hazardous or special wastes likely to be generated (e.g. filters and protective clothes, rags, packages contaminated with chemical substances such as paint/solvent or oils) within the scope of the Project will be stored in special compartments in the Temporary Storage Area allocated for this purpose, in containers, separated from the each other as hazardous wastes having different waste codes and non- hazardous wastes. 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 in order to collect the spilled liquid materials to the blind hole for any incident. • Hazardous or non-hazardous inscription, waste code, stored waste amount and storage date will be indicated/labeled on wastes temporary stored by classifying according to their properties. The reaction of wastes with each other will be prevented by the measures taken in the Temporary Storage Area;	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
				• Waste recycling, transport and disposal will be carried out by means of licensed companies and/or Sugla Group Municipalities; • Adequate waste disposal facilities will be provided. Collection of all solid waste from generation points and safe transportation to a collection point will be ensured; • Packaging materials (such as sacks, pallets, parcels, plastic coatings) from the products used at the head office and work sites shall be collected separately according to the provisions of the "Regulations for Control of Packaging Wastes"; • Incineration or burying of wastes by any means at site and/or dumping of wastes to nearby roads or water resources will not be in question; • Training will be provided to the employees regarding waste management practices by PIU; • 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 wastes throughout the Project; • Personal hygiene material/equipment wastes (such as single use masks, gloves) will be collected, temporary stored, transported and delivered to waste processing facilities; • Excavation material will be piled next to the trench until they are reused as backfilling. This material will not be stored next to the trench for more than one week. The remaining waste excavation material will be kept in temporary storage containers. Temporary storage containers will be yellow colored, and type of the waste materials will be indicated on the containers. Domestic and hazardous wastes will not be disposed in these temporary containers. The containers filled with excavation waste will be disposed of in consultation with the related municipality. The transportation of such wastes will be provided by licensed transport vehicles; • During the storage of the excavation material, security precautions will be taken to prevent visual disturbances and accidents resulting from the excavated materials such as covering the excavation piles, and placement of safety signs etc.; • Disposal of excavation material will be carried out in compliance with the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes. • 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 must be labelled as “waste oil”. Disposal of waste oils will be controlled by the KOSKI; and • Waste batteries from construction site and accumulators from vehicles will be disposed 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 designated collection sites, if there is one in the region. If not, used batteries will be transferred to the nearest battery collection point of TAP.		
Storage and Usage of Chemicals	Spill/Leakage Incident	Adverse	Low	• Provision of the Regulation on Safety Data Sheets Regarding Harmful Substances and Mixtures will be complied; • Provision of the Regulation on the Preparing and Distributing Safety Data Sheets Regarding Dangerous Materials and Preparations will be complied; • All chemical storage containers, including diesel fuel, and hazardous liquid waste drums/containers will be placed in designated storage areas with their secondary containment so as to minimize the risk of soil, surface water and groundwater contamination during construction; and • Spill kits will always be available at the storage areas and working areas where chemicals are used on construction sites.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
Climate Change	Contribution to climate change through GHG emissions	Adverse	Low	• Optimal utilization of the available construction equipment and materials in such a way that reduces greenhouse gas emissions; • Speed restrictions will be adopted by construction vehicles and equipment to optimize fuel efficiency; • Regular maintenance of construction vehicles and equipment will be applied; • Energy uses associated with construction vehicles and equipment will be monitored; and • Trainings will be performed on project personnel regarding energy efficiency by PIU with support of the Technical Assistance team after signing the works contract. Until the construction phase is completed, refresher trainings will be done.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
Biological Environment						
Biological Environment	Disturbance on flora and fauna species	Adverse	Low	• Before the land preparation phase, definite working areas will be set up where activities (e.g. vegetation clearing, vegetation removal, levelling and construction) and permanent structures (units and roads) will be established; • Camps will be located sufficiently far from KBA borders to avoid non-essential impacts; • Vegetation clearing within the site boundary will be avoided unless it is necessary; • Clearing mature trees will be avoided; • If there is a nest of bird species, the nest should be marked with a safety strip about 3 meters in diameter and an expert ornithologist should be informed; • Project workers will not be allowed to bring any live animals or plants into the construction site to avoid the risk of pest/invasive species establishing in the project area; • Construction work will be done gradually so that it will have enough time to escape for possible fauna species to be found; • The drinking water transmission line will be constructed as a suspended pipe passing over the irrigation canal without concreting to avoid any damage; • Revegetation of cleared areas will be ensured where possible; and • Silt fences will be used at 17 creek crossings in Project area.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
Socio-Economic Environment						
Socioeconomic Environment	Job creation and local procurement	Positive	-	To avoid negative impacts: • KOSKI will take all necessary actions and measures for labor and employment to be in compliance with Turkish Labor Law and international standards. KOSKI will aim at employing local workers to the extent possible, in order to increase the Project’s local benefits. The recruitment processes will be transparent, public and non-discriminatory, providing equal opportunities with respect to ethnicity, religion, language, gender and sexuality. • The contractor and their subcontractors will provide clear information on the recruitment process, with particular emphasis on informing local communities, especially the Sugla Group Districts, of employment opportunities through different channels such as mukhtars and local associations.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Infrastructure Damage	Adverse	Low	The construction works during the construction phase and waste disposal during the construction phase of the Project will be performed by Contractors. Therefore, any damage to infrastructure will be repaired or compensated by Contractors promptly in accordance with the requirements of the responsible authority, such as KGM and KMM. KOSKI will closely monitor such issues.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
	Impact on underground service utilities and services relocation	Adverse	Low	• Plans from the Municipality showing the location of underground service utilities (power, telecom, other) will be obtained and residents and/or landowners will be consulted on the relocation of utilities prior to commencing of excavation works; • The relevant permits, protocols will be granted for other 3rd party crossings such as underground electricity cables etc. during construction stage; • A team/teams to accompany the excavation team will be provided from the related utility authority; and • The construction activities will be performed in a way not to give any damage to the utilities located in the working area.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Impact on vulnerable / disadvantaged groups	Adverse	Medium	• Late afternoon meetings will be preferred for parents with young children. • Women only consultations will be preferred for women headed households. • KOSKI will ensure that transportation services to activities will be provided for elderly people and households with low or no income. • KOSKI will ensure that patient care assistance during engagement activities will be provided for households with person in need of nursing. • Refugees will be visited with translator and civil society representative.	Included in construction cost	Contractor KOSKI /PIU Supervision Consultant
Community Health and Safety	Project traffic and construction activities related risks	Adverse	Low	• A Community Health, Safety, and Security Management Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor 30 days prior to commencement of the works and the employees will be trained; • A Traffic Management Plan (TMP) that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be developed to minimize potential traffic related impacts on the residential areas located in close vicinity of the project area. The TMP will be prepared by the Contractor 30 days prior to commencement of the works and the employees will be trained. The TMP should include details about the following; - construction plan by phases, - beginning and duration of works, - overview of the existing conditions near the construction sites, - identification of affected areas, - mitigation measures, - traffic diversion plans, including zones of entry and exit, routes for towing of material, turnaround points, parking areas, zones of interlocking with other traffic roads etc., - routes/temporary passages for pedestrians and vehicles, - traffic controls for each expected intervention, including illustrations of barriers, paths, signalization plan, warning signs etc., - requirements for special vehicles, for example, those of large dimensions, - construction works paths (access, ramps, loading, unloading), - connection roads for supply vehicles and storage of material, - expected interaction of pedestrians and vehicles, - roles and responsibilities of persons on construction site regarding traffic management, and - instructions on the procedures regarding traffic control, including urgent situations. • The appropriate signage will be determined based on the Regulation on Traffic Signs. Prior to construction activities, the Contractor will install all signs, barriers and control devices needed to ensure the safe use of the roads by traffic and pedestrians; • Traffic has to be regulated in a way that will guarantee traffic safety and minimum traffic flow disruptions. When road closures, traffic diversions, are necessary, official permits will be obtained from the Konya Provincial Police Department Traffic Control Branch Office and the route & duration of disruption will be determined. Advance notification will be provided to local people to be affected from blockages and diversions; • Alternative routes will be determined and transportation will be programmed according to intensity of traffic; • Sufficient and appropriate road crossing points and facilities will be ensured for pedestrians; • All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic; • Project personnel will be trained for safe driving by OHS Expert before the construction starts; • Buses will be organized for worker transportation where possible to avoid additional traffic pressure; • Storage of construction materials, equipment and machineries on traffic lanes will be prevented; and • Traffic activities of the Project will be scheduled to avoid peak hours on local roads if feasible.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Community encroachment	Adverse	Low	• A Community Health, Safety, and Security Management Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor 30 days prior to commencement of the works and the employees will be trained; • Security Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be developed by KOSKI or security services provider before the construction phase. KOSKI and contractor will ensure that the plan is actively implemented; • Persons and/or organizations with the necessary permits will be assigned to ensure the security of the project area (e.g. private security companies/officials). These persons and/or organizations shall regularly monitor the work areas and surroundings. The special security applications and officials' authorities within the scope of the project shall comply with the provisions of the Regulation on the Implementation of the Law on Private Security Services and the Law on Private Security Services; and • Entry of staff and third parties into the working site will be carried out in a controlled manner.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Adverse	Medium	• Contractor Code of Conduct developed, incorporated into workers' contracts, and training and socialization on it provided to workers • Mandatory and regular training for workers on required lawful conduct in local community and legal consequences for failure to comply with laws; • Commitment / policy to cooperate with law enforcement agencies investigating perpetrators of gender-based violence; • Creation of partnership with local civil society organization to report workers' misconduct and complaints/reports on gender-based violence or harassment through the GM; • Provision of opportunities for workers to regularly return to their families; • Provision of opportunities for workers to take advantage of entertainment opportunities away from rural local communities	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	General construction related impacts	Adverse	Low	• A Community Health, Safety, and Security Management Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor prior to the construction and the employees will be trained on this management plan;	Included in construction costs	Contractor

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
	on community			• Plans from the Municipality showing the location of underground service utilities (power, telecom, other) will be obtained and residents and/or landowners will be consulted on the relocation of utilities prior to commencing excavation activities; • The relevant permits, protocols will be granted for other 3rd party crossings such as underground electricity cables etc. during construction phase; and • The construction activities will be performed in a way not to give any damage to the utilities located in the working area.		
Landscape and Visual (Aesthetics)	Impairment of quality of life due to the overall presence of annoying construction works and activities and altered landscape	Adverse	Medium	• The construction works will be limited to day time only unless it is necessary; and • The construction plan will be disclosed to the public through the KOSKI's website.	No costs involved	Contractor KOSKI/PIU Supervision Consultant
Archaeological and Cultural Heritage	Chance Finds	Adverse	Low	• Chance Finds Procedure prepared by the E&S Consultant and provided in Annex-4 will be complied with and training of workers/employees will be performed on cultural heritage issues. • As required by Article 4 of Law on the Conservation of Cultural and Natural Properties (Law No. 2863), chance finds procedure will be implemented during land preparation and construction works. In this content: - Construction works will be stopped immediately in case of finding any movable or immovable cultural asset by chance. - The site will be secured. - Related Conservation Board or Museum Directorate will be informed latest in three days. - Works will not proceed until official information is received. - Trainings will be performed for project personnel regarding chance finds procedure that will be prepared prior to the construction activities.	No costs involved	Contractor
Labor and Working Conditions						
Labor Force	Working Conditions	Adverse	Low	• KOSKI will ensure that contractor will prepare and implement a Workforce Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific). The Plan will be prepared by the Contractor 30 days prior to commencement of the works and the employees will be trained; • Construction contractors of the Project will give induction training to employees covering the subjects; fair treatment; non-discrimination and equal opportunities of workers; establishing, maintaining and improving a sound worker-management relationship; compliance with national labor and employment laws; code of conduct; protecting and promoting the safety and health of workers, especially by promoting safe and healthy working conditions; preventing the use of forced labor and child labor (as defined by the WB and Turkish legislation); induction training for employees by PIU with support of the Technical Assistance team regarding to code of conduct, EHS and WB requirements etc., and Grievance Redress Mechanism (GRM) for workers. The training will be given after signing the works contracts; • Workers will be issued written contracts that is clear and understandable, detailing job description, working hours, wages, rights and duties, code of conduct, etc. and regarding their rights under national labor law; including collective agreements, their rights related to hours of work, wages, overtime, compensation, and benefits as of startup of working relationship and when any material changes occur • Workers will not be discouraged from electing worker representatives, forming or joining workers' organizations of their choosing, or from bargaining collectively, and will not discriminate or retaliate against workers who participate, or seek to participate, in such organizations and collective bargaining; • Particular concern will be paid on principles of non-discrimination and equal opportunity. In this respect, employment decisions (i.e. recruitment and hiring, compensation, wages and benefits, working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices) will not be made on the basis of personal characteristics unrelated to job requirements. Wages, work hours and other benefits will be per the Turkish Labor Law; • A grievance redress mechanism as defined in Section VII.3 and also in SEP of the Project will be implemented to raise workplace concerns. The workers will be informed about the grievance redress mechanism at the time of recruitment and make it easily accessible to them; and • If an employee faces Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) issue s/he can either apply to a higher level superior or directly go to police station, as stipulated in the national referral system of the country for dealing such cases. The content and procedures of the project's GRM will also have a reporting line on such cases in regard to SEA/SH issues and will be handled under full confidentiality. The GRM focal point receiving the SEA/SH related grievance should direct this to national referral systems immediately and record that this has been directed, as set out in the GRM Procedure of ILBANK. All details of the complainant of the sensitive case will be kept strictly confidential.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Protecting the Workforce	Adverse	Low	• Employment of child labor and forced labor will be prohibited; • Contractors will be required to have age verification system, ensuring no one under 18 years old are involved in works.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Occupational Health and Safety (OHS)	Adverse	High	• Project and site-specific OHS Management Plan based on construction site OHS risk assessment and that will also cover measures to address any other pandemic/communicable disease risk, which will be in line with the WBG EHS Guidelines (both general and sector specific) will be prepared by Contractor 30 days prior to commencement of the works and the employees will be trained; • An Emergency Preparedness and Response Plan based on construction site OHS risk assessment and covering also the issues about the contagious diseases will be prepared by Contractor 30 days prior to commencement of the works and the employees will be trained; • Guidance, directives and recommendations of Ministry of Health, Ministry of Family, Labor and Social Services, World Health Organization and the World Bank shall be followed and all relevant necessary measures shall be taken, both for occupational health and safety of	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
				employees and for workplaces, in case of an outbreak of any other pandemic/communicable disease; • Relevant procedures such as Confined Space Entry Procedure, Working at Height Procedure, etc. will be prepared in accordance with applicable national requirements and internationally accepted standards; • In order to minimize the risks and hazards that may arise (e.g. natural disasters, accidents, equipment malfunctions etc.) on human health and safety, safe working environments in the working sites will be established and physical hazards and risks will be prevented; • The Contractor will formally agree that all work will be carried out in a safe and disciplined manner and is designed to minimize risks on neighboring residents and environment; • The relevant plans and procedures required by Turkish legislation will be prepared and the Contractor will comply with these OHS measures and practices; • Employees will be informed about the hazards that may cause from their work and thus a safer work environment will be created; • OHS trainings will be given to employees by OHS Experts before the construction starts. In this context, a training program will be prepared, training records will be kept and evaluation activities will be carried out after the trainings; • Personal protective equipment (PPE) will be provided to all employees and necessary training will be given for their use; • Work areas will be equipped with warning signs in accordance with the quality and potential risks of the work to be performed in that area; • Smoking in areas where there is a risk of combustion/ explosion will be prohibited. All employees must have knowledge of what to do in the event of a fire; • Project staff will include first aid trained personnel. In case of emergency where an intervention is required, personnel will be sent to the nearest health center by appropriate means. • The Contractor will apply the sufficiency of the technical requirement of the machinery, equipment, and tools to be used in the activities; • Moving parts of machinery and equipment will be equipped with appropriate protective systems (e.g. metal shields etc.), minimizing the risk of injury or damage to the person using the machine or equipment; • Personal factors that may create and control risks during activities (e.g. long hair, jewelry and accessory use, clothing etc.) will be removed from the site by the rules brought by the Contractor. Project staff will be informed about the relevant regulations within the scope of the training program; • Drivers and operators will be trained to comply with traffic rules and to control the vehicles and equipment they use against risks and hazards originating from vehicle traffic by OHS Experts before the construction starts. Required traffic signs will be placed in the project site and its surroundings. Machine operators and other employees will be informed and alerted about the relevant signs; • Areas where excavation work is to be carried out will not be accessible other than the authorized personnel. The loading and unloading activities shall be carried out together with the persons to oversee the personnel to carry out the activity; • Access of the visitors, local people and animals to the area will be controlled; • If a trench needed to be left open for night, the sufficient illumination of the area shall be ensured by the Contractor and necessary signs shall be placed and the area shall be enclosed with barriers; • An adequate OHS organizational structure will be defined, as defined by the local legislation and for 100 workers necessary number of OHS officers should be assigned to be at the site during working hours. Project is classified as “lightly hazardous” workplaces according to Communiqué on Occupational Health and Safety Hazard Classes List. The contractor will assign at least one A-Class OHS Expert to the Project and the expert(s) will be supervised by KOSKI’s OHS Experts; • A risk assessment will be done before commencing the works and personnel will be trained regarding the risks; • OHS Personnel will daily inspect the site and if any additional risk is observed relevant plans and trainings will be renewed; and • In case of any significant environmental or social incident (e.g. lost time incidents, fatalities, environmental spills etc.), the Contractor will notify KOSKI about the occurrence of the incident in 24 hours and KOSKI will immediately inform ILBANK. A detailed incident investigation report, including the root-cause analysis, precautions and compensation measures taken will be submitted to KOSKI, ILBANK and the World Bank in 15days after the incident. •		
	Workers Engaged by Third Parties and the Supply Chain	Adverse	Low	• KOSKI will prepare a Contractor Management Plan before involvement of contractors and ensure its implementation; • Contractors will be reputable and legitimate enterprises and have an appropriate ESMS that will allow them to operate in a manner consistent with the labor conditions requirements; • KOSKI will monitor its primary supply chain for safety issues related to supply chain workers, and where necessary KOSKI will introduce procedures and mitigation measures to ensure that suppliers are taking steps to prevent or to correct life-threatening situations; • The performance of Contractors will be monitored such that human rights policy and labor rights of all workers are exercised properly and non-compliance measures will be included in their contracts; and • The workers of Contractors will have access to the overall grievance redress mechanism to be established for the Project.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

Table 6-2.Mitigation Plan for the Operation Phase Impacts of the Project

OPERATION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Physical Environment						
Air quality	Air emissions from pumping station	Adverse	Low	• Effective management and operation of pumping station will be ensured with effective maintenance and rapid response to emergencies; • A regular record of equipment maintenance and control form will be kept; • Air quality measurement will be carried out by an authorized environmental laboratory in case of any complaint.	Included in the operation costs	KOSKI/PIU
Soils and Contaminated Land	Soil contamination	Adverse	Low	• The staff will be trained in proper management of liquid waste to avoid soil contamination during maintenance and repair works; • 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; • Machinery and equipment will be checked regularly for leaking oil and fuel; • 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; • Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources will be complied with and • Wastes and wastewater (rainfall filled in trenches) to be generated during the maintenance and repair works will be stored and disposed of in a controlled manner in accordance with the relevant regulations and in line with the management practices described in this report. Thus, it will not be possible for the waste and wastewater to be generated in the project area to interact with the soil environment and cause any impacts.	Included in the operation costs	KOSKI/PIU
Water Resources	Changes in surface water and groundwater quality	Adverse	Low	• Machinery and equipment will be checked regularly for leaking oil and fuel; to prevent pollution of near surface water and groundwater resources during operation and maintenance activities; • Broken pipes and other repairs will be undertaken without delay; • Pumping station will be adequately maintained; • Overflows will be prevented by automation systems; • A leak detection and repair program will be implemented (including records of past leaks and unaccounted for water to identify potential problem areas); and • Leak rate of the pipelines will not exceed 20% as per Regulation on Drinking and Water Supply and Distribution Systems.	Included in the operation costs Included in the operation costs	KOSKI/PIU KOSKI/PIU
Noise	Increase in noise levels	Adverse	Low	• The noise impact resulting from vehicles, and maintenance equipment and machinery will be temporary and is not expected to be significant. The number of vehicles will be limited during operation and maintenance. The staff will use ear protection, as necessary. During the maintenance activities, necessary measures, such as installing acoustic screens will be taken to minimize noise near noise-sensitive areas, if needed; • Regular maintenance of all mechanical equipment that may cause noise will be carried out; • The oil levels of the equipment and their equipment such as silencers, etc. will be checked at least 4 times a year; and • Relevant provisions and limit values of Regulation on Environmental Noise Control and WBG General EHS Guidelines and Sectoral Guidelines will be complied with during the operation phase.	Included in the operation costs	KOSKI/PIU
Wastes	Generation of different types of waste during operation and maintenance works	Adverse	Low	• Strict waste disposal policy will be applied, and waste produced will be managed in accordance with the waste management hierarchy; • Generated domestic solid wastes will be stored in containers and collected daily by the related municipality; • Training to the employees regarding waste management practices will be provided; • All kinds of implementations that may threaten personnel or community health will be avoided in all activities involving collection, temporary storage, transport and disposal of wastes; • Excavation material during pipe replacement etc. will be piled next to the trench until they are reused as backfilling. The remaining waste excavation material will be stored in temporary storage containers. The containers filled with excavation waste will be disposed of in consultation with the related municipality. The transportation of such waste will be provided by licensed transport vehicles; • Waste batteries from construction sites and accumulators from vehicles will be disposed of in compliance with the consumer responsibilities specified in Article 13 of the "Regulation on Control of Used Batteries and Accumulators". Accordingly, used batteries will be collected separately (from municipal wastes) and transferred to the designated collection sites, if there is one in the region. If not, used batteries will be transferred to the nearest battery collection point of TAP; and • Hazardous waste (paint, waste oil etc.) will be stored temporarily in an area to be designated by the KOSKI. 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 must be labelled as “waste oil”. Disposal of waste oils will be controlled by the KOSKI.	Included in the operation costs	KOSKI/PIU
Climate Change	Greenhouse gas emissions	Adverse	Negligible	• Optimal utilization of the available equipment and materials during maintenance activities in such a way that reduces greenhouse gas emissions; • Regular maintenance of vehicles and equipment will be applied; • Energy uses associated with vehicles and equipment will be monitored; and • Trainings will be conducted for project personnel regarding energy efficiency.	Included in operation costs	KOSKI/PIU
Socio-Economic Environment						
Socio-economic Environment	Local procurement	Positive	-	To avoid negative impacts, KOSKI will take all necessary actions and measures for labor and employment to be in compliance with Turkish Labor Law and international standards. KOSKI will aim at employing local workers to the extent possible, in order to increase the Project’s local benefits. The recruitment processes will be transparent, public and non-discriminatory, providing equal opportunities with respect to ethnicity, religion, language, gender and sexuality.	Included in the operation costs	KOSKI/PIU
	Infrastructure damage	Adverse	Low	Any damage to infrastructure will be repaired or compensated promptly in accordance with the requirements of responsible authority, such as KGM and KMM. KOSKI will closely monitor such issues.	Included in the operation costs	KOSKI/PIU
Landscape and Visual (Aesthetics)	Existence of the pumping station	Adverse	Negligible	• The pumping station area will be fenced; and • KOSKI will plant trees around the pumping station.	Included in the operation costs	KOSKI/PIU
Labor and Working Conditions						

OPERATION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Labor Force	Working Conditions	Adverse	Medium	• Workers will be issued written contracts that is clear and understandable, detailing job description, working hours, wages, rights and duties, code of conduct, etc. and regarding their rights under national labor law; including collective agreements, their rights related to hours of work, wages, overtime, compensation, and benefits as of startup of working relationship and when any material changes occur; • Workers will not be discouraged from electing worker representatives, forming or joining workers' organizations of their choosing, or from bargaining collectively, and will not discriminate or retaliate against workers who participate, or seek to participate, in such organizations and collective bargaining; • Particular concern will be paid to principles of non-discrimination and equal opportunity. In this respect, employment decisions (i.e. recruitment and hiring, compensation, wages and benefits, working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices) will not be made on the basis of personal characteristics unrelated to job requirements. Wages, work hours and other benefits will be per the Turkish Labor Law; • A grievance redress mechanism for workers will be established to raise workplace concerns. The workers will be informed about the grievance redress mechanism at the time of recruitment and make it easily accessible to them; • A Code of Conduct will be prepared by KOSKI and implemented for all employees; and • If an employee faces Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) and/or Gender Based Violence (GBV) issue s/he can either apply to a higher level superior or directly go to police station, as stipulated in the national referral system of the country for dealing such cases. The content and procedures of the project's GRM will also have a reporting line on such cases in regard to SEA/SH and GBV issues and will be handled under full confidentiality. The GRM focal point receiving the SEA/SH related grievance should direct this to national referral systems immediately and record that this has been directed, as set out in the GRM Procedure of ILBANK. All details of the complainant of the sensitive case will be kept strictly confidential.	Included in the operation costs	KOSKI/PIU
	Protecting the Workforce	Adverse	Low	• Unregistered employment, child labor and forced labor will be prohibited. • KOSKI will be required to have an age verification system, ensuring no one under 18 years old is involved in work. • Legal labor standards will be met (anti-discrimination, working hours, minimum wages).	Included in the operation costs	KOSKI/PIU
	Occupational Health and Safety	Adverse	High	• PPE will be provided for the workers according to the nature of work to be performed. The necessary training will be carried out for their use; • Smoking will be prohibited where the risks of combustion/explosion is high. All the workers will be informed about the action plan in case of fire; • All equipment will be operated in proper working order; • OHS Procedures approved by the KOSKI in the maintenance and repair activities and the requirements of the technical specifications of the supplier companies will be complied with; • The necessary health and safety signs and traffic signs will be placed around the project site. Employees will be informed and alerted about the subject matter markings; • Trainings will be given to employees and operational and maintenance personnel within the scope of the Regulation on Procedures and Principles of Occupational Health and Safety Trainings and measurement and evaluation activities will be carried out after the trainings; • After the pumping station is completed, necessary electrical tests will be carried out to check that the electrical connections and other related equipment are made properly before the station is taken into operation; • Upon completion of the project, KOSKI will prepare a new emergency preparedness and response plan; • Implement fire and explosion prevention measures; • When installing or repairing mains adjacent to roadways, implement procedures and traffic controls, such as: o Establishment of work zones so as to separate workers from traffic and from equipment as much as possible; o Reduction of allowed vehicle speeds in work zones; o Use of high-visibility safety apparel for workers in the vicinity of traffic; and o For night work, provision of proper illumination for the work space, while controlling glare so as not to blind workers and passing motorists. • KOSKI will prepare a Confined Space Entry Procedure that is consistent with applicable national requirements and internationally accepted standards; • KOSKI 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 its proper use and maintenance; • KOSKI will ensure the compliance of all the activities within the project area with national standards and WBG EHS Guidelines regarding OHS issues; • In case of any significant environmental or social incident (e.g. lost time incidents, fatalities, environmental spills etc.) KOSKI will immediately inform ILBANK and the World Bank. A detailed incident investigation report, including the root-cause analysis, precautions and compensation measures taken will be submitted to ILBANK and the World Bank in 30 business days after the incident.	Included in the operation costs	KOSKI/PIU
	Workers Engaged by Third Parties and the Supply Chain	Adverse	Low	• If any, Contractors (food, security, maintenance, etc.) will be reputable and legitimate enterprises and have an appropriate ESMS that will allow them to operate in a manner consistent with the labor conditions requirements; • The performance of Contractors will be monitored such that human rights policy and labor rights of all workers are exercised properly, and non-compliance measures will be included in their contracts; and • The workers of Contractors will have access to the overall grievance redress mechanism to be established for the Project.	Included in the operation costs	KOSKI/PIU
	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Adverse	Medium	• Contractor Code of Conduct developed, incorporated into workers' contracts, and training and socialization on it provided to workers • Mandatory and regular training for workers on required lawful conduct in local community and legal consequences for failure to comply with laws; • Commitment / policy to cooperate with law enforcement agencies investigating perpetrators of gender-based violence; • Creation of partnership with local civil society organization to report workers' misconduct and complaints/reports on gender-based violence or harassment through the GRM; • Provision of opportunities for workers to regularly return to their families; • Provision of opportunities for workers to take advantage of entertainment opportunities away from rural local communities	Included in operation costs	KOSKI/PIU

Monitoring Plan

In order to ensure the continuity and effectiveness of the implementation of mitigation management strategies defined, monitoring plays a key role. The main objective of the Monitoring Plan is to provide a basis for tracking and assessing the implementation of the prescribed 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 ensure 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 implementation of impact mitigation measures and optimization of environmental protection by using best practices at the all stages of the Project.

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

Monitoring activities are submitted in tabular form in Table 6-3 and Table 6-4 for land preparation and construction, and operation phases, respectively.

Table 6-3. Monitoring Plan for the Land Preparation and Construction Phase of the Project

LAND PREPARATION AND CONTRUCTION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
Physical Environment									
Soils and contaminated land	Work sites and storage areas	Upon an incident	Soil quality, including, pH, heavy metals, phosphorus, nitrogen, Na, Ca, salts, PAHs Amount of contaminated soil	Sampling and analysis by an authorized environmental laboratory	No soil contamination resulting from project activities	Regulation on the Control Soil Pollution and Sites Contaminated by the Point Source WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Number of spill responses • Soil analysis results • Contaminated soil amount • Contaminated soil treatment/disposal methodology • Stripped/stored/reused topsoil amount • Environmental spill/leak incident records/report • Excavation amount • Reused excavation amount • Amount of excavated material that is sent to final disposal • ESMR findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
		Once in a week starting from the initialization of land preparation and construction phase	Number of oil/fuel and chemical leakages/spills	Environmental incident registry					
		Upon grievance	Contaminated soil amount and quality (parameters to be determined based on the grievance)	Sampling and analysis by an authorized environmental laboratory					
Storage and usage of chemicals	Entire project site and chemical storage locations	Once in a week starting from the initialization of construction phase	Conditions of the storage area Number of leaks, spills, etc.	Visual observation Site inspections Environmental incident registry	No chemical spill incident	Regulation on Safety Data Sheets Regarding Harmful Substances and Mixtures Regulation on the Preparing and Distributing Safety Data Sheets Regarding Dangerous Materials and Preparations WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Hazardous materials and chemicals inventory • Number of reported leakages and spills • Storage conditions of chemicals and hazardous material • Floors of the chemical and hazardous material storage areas • Material Safety Data Sheets (MSDSs) of all chemicals listed in the inventory • Written training records covering the chemicals and hazardous materials management issues • Labels of the hazardous materials	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Storage and use of excavation waste	Construction site and storage areas	Once in a week starting from the initialization of construction phase	Amount of refilled, stored, and disposed excavation materials Amount of stripped and reused topsoil by indicating reuse locations Storage conditions of topsoil (humidity and pile height)	Visual observation Records	Proper management of excavation wastes No loss of topsoil	Regulation of the Control of Excavation Soil and Construction and Demolition Waste WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Excavation amount • Reused excavation amount • Amount of excavated material that is sent to final disposal and disposal mechanism • ESMR findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Damage to existing underground public utility cables and pipes	Work sites (excavated areas)	Upon grievance At the time of excavation	Complaints to Utility Service Providers Number of damages	Grievance Registration Visual Observation Damage Records	No damage to existing underground utility cables and pipes	-	• Service and utility location plans • Relocation plans agreed with the utility service providers and public • Grievance Records • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Air quality	Nearest sensitive receptors Work sites	Upon grievance Once a week starting from the initialization of land preparation and construction phase	Settled dust, PM_{10} and $PM_{2.5}$ Records of maintenance for all machinery and equipment Number of complaints Exhaust decal records of all machinery and equipment	Sampling/ In-situ measurement by an authorized environmental laboratory Records of maintenance for all machinery and equipment Visually on the basis of irritation of breathing system, complaints of the population in the vicinity	No grievance is received regarding noise Regular maintenance activities are carried out	Regulation on the Assessment and Management of Air Quality Industrial Air Pollution Control Regulation WBG General EHS Guidelines WB OP 4.01	• ESMR Findings • Air quality grievance records • Air quality (Settled dust, PM_{10} and $PM_{2.5}$) measurement results • Exhaust emission decal follow-up	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU

LAND PREPARATION AND CONTRUCTION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
Water resources	At related water resources (river crossings, wells, fountains, etc.)	In case of a major spill In case of a leak/spill reaching water bodies	Surface water / groundwater quality analysis and measurements that include spill-related pollutants	Sampling and in situ / laboratory measurements Spill notices/correspondences to authorities in case of major spills	Prevention of water quality deterioration compared to current surface water and groundwater quality	Water Pollution Control Regulation Surface Water Quality Regulation Regulation on the Protection of Groundwater Against Pollution and Degradation WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Visual observations • Amount of wastewater generated • ESMR Findings • Laboratory analysis	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
	Construction site	Prior to the initialization of the construction activities	Groundwater level The discharge from hydro testing / pressure testing.	Visual observation if the groundwater is being evacuated from the working area Laboratory analysis to determine the qualities.					
Noise and vibration	Nearest sensitive receptors Work sites	Quarterly starting from the initialization of construction phase Upon grievance	Noise Levels Number of complaints	At least 24-hr noise measurements via an authorized environmental laboratory Grievance Registration	Not exceeding the limit values defined in Regulation on Environmental Noise Control No noise related grievance received	Regulation on Environmental Noise Control WBG General EHS Guidelines WB OP 4.01	• Noise level measurement results • Construction machinery and equipment maintenance log • Noise grievance records • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Resources and Wastes	Construction site, storage areas, and administration office	Once in a month starting from the initialization of construction phase	Amount of waste generated per type	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	Minimizing the amount of waste to be sent for disposal and implementing waste management hierarchy	Waste Management Regulation Zero Waste Regulation WBG General EHS Guidelines WB OP 4.01	• Waste segregation practices (amount of waste per type) • Temporary waste storage records • Waste Disposal Agreements and Records • Waste Grievance Records • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
	Administration office	Quarterly during the construction phase	Types and amounts of materials/resources used	Material/resource procurement / consumption records	Use of recycled materials whenever possible	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Types and amounts of materials used • Annual GHG emission contribution of the Project		
		Annually starting from the initialization of construction phase	Annual GHG emission contribution of the Project	GHG emission estimation calculations	Not exceeding 1,000 t CO_2 eq.				
Biological Environment									
Biological environment	Work sites	Monthly starting from the initialization of construction phase	Number of incidents with fauna mortality	Incident records	No incidents involving fauna species	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Site Inspections • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Socio-Economic Environment									
Job creation and local procurement	Administration office	Quarterly during construction phase	Number of persons employed from the local community	Employment records	Meeting 100% of the unskilled workforce need from the local population	Labor Law	• Information disclosure records • Stakeholder engagement records • Employee records • Local employment/ procurement ratio	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Infrastructure damage	Administration office	Monthly during construction phase	Number of cases and amount of compensation paid	Incident records	No infrastructure cases	Criminal Law	• Grievance Records • Official correspondences • ESMR Findings	Included in construction cost	Supervision Consultant Contractor

LAND PREPARATION AND CONTRUCTION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
				Receipts of compensation payments					KOSKI/PIU
External and Internal Grievances (to be recorded separately)	Administration office	Upon grievance starting from the initialization of the Project	Number of received grievances Number of open and closed grievances Average grievance response and closure time Identification of grievance channels Nature of grievances recorded, addressed and analyzed	Grievance records (grievance log, received grievance forms, etc.)	Reasonable level of grievances received and resolved within the current service standards to ensure the overall satisfaction of the complainant Number of repetitive grievances	WB Safeguard Policies	• Grievance Records • Presence of mukhtar as representative • ESMR Findings • Social security records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Traffic	Administration office	Monthly during construction phase In case of any incident/accident, complaints of the population in the vicinity	Number of grievances	Grievance records	Limited number of external complaints resolved quickly, adequately and fairly to the complainant's satisfaction	Highway Traffic Law	• Number of reported traffic accidents • Vehicle maintenance log • Condition of traffic signs • Training records • Grievance records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
			Number of road traffic accidents	Accident records	No accidents occurred				
			Number of drivers trained	Training records	100% of the drivers are trained				
Community encroachment /trespassing	Administration office	Weekly during the construction phase	Number of trespassing incidents cases	Security reports Visitor logs	No trespassing	Law on Private Security Services	• Security reports • Visitor logs	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Community health and safety	Project area	Daily basis Upon grievance	Health and safety signs and traffic signs placed in appropriate locations	Visual observation Site inspection	Avoid any cases that results in health and safety problems	Regulations on Traffic Signs	• Incident records • Condition of traffic signs • Grievance records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
General construction related impacts on community	Administration office	Upon grievances and events starting from the initialization of the Project	Number of grievances	Grievance records Conflicts with security personnel and workers of the Project	Limited number of grievances, resolved satisfactorily within the stipulated time	Law on Private Security Services	• Security reports • Grievance records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Chance finds	On and around the working location	Daily basis starting from the initialization of construction phase	Number of chance finds	Visual observation Official notification to authorities	No adverse impact on cultural heritage	Law on the Conservation of Cultural and Natural Properties Chance Finds Procedure	• Visual observation • Official notification to authorities • Number of chance finds • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Labor and Working Conditions									
Working conditions	Administration office	Weekly during construction phase	Workers' grievances	Grievance records	Managing provisions given in ESMP properly.	WB Safeguard Policies	• Workers' Grievance Records • Presence of union or workers' representative • ESMR Findings • Labor/social security records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Occupational health and safety	Construction sites	Daily basis starting from the initialization of land preparation and construction phase	Number of incidents, accidents/Injuries	Incident records	No OHS incidents occurred		• Incident Records • Number of nonconformities • Training records training materials (participant list, presentation etc.) • Work Permits • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
			Incident investigation	Incident investigation records					
			Period of disease occurrence	Disease follow-up register	No infectious disease recorded				

LAND PREPARATION AND CONTRUCTION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
		Monthly during the construction phase	Number of personnel who are infected with an infectious disease	Training records	No infectious disease occurred	Occupational Health and Safety Law WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• H&S reports • H&S meetings • Emergency drills • OHS Implementations (internal & external audits) • OHS Practices (Use of PPE etc.)		
		Annually during the construction phase	Training requirements	Annual Environmental, Social Health, and Safety (ESHS) training plan	Every training defined in the Annual ESHS is completed				
		Quarterly during the construction phase	Number and subject of emergency drills	Drill records	Drills are conducted quarterly				
Protecting the workforce	Administration office	Before each recruitment	Age of candidate employee	Age verification with National ID	Prohibit child labor	Labor Law	• No child and forced labor	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Workers Engaged by Third Parties and the Supply Chain	Administration office	Before each agreement made	Contractor and sub-contractor agreements	Contract reviews by ESHS expert(s)	No nonconformity is observed with the ESMP	WB Safeguard Policies	• Contractor / Sub-contractor Agreements • Grievance Records • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Administration office	Quarterly Upon relevant grievances	GBV and SEA/SH related incidents	Document review Review of grievance logs	No GBV related issues.	Labor Law WBG General EHS Guidelines WB Good Practice Note Addressing SEA/SH WB OP 4.01	Document review Review of grievance logs • GBV incidents	Included in construction cost	Contractor KOSKI/PIU

Table 6-4. Monitoring Plan for the Operation Phase of the Project

OPERATION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
Physical Environment									
Contamination of Soil	Storage areas Work sites (excavated areas for maintenance and repair)	Upon an accident Daily basis starting from the initialization of the operation phase of the Project	Number of spills/leaks Amount of contaminated soil	Sampling and in situ / Laboratory Measurement Visual observation Environmental incident registry	No soil contamination resulting from Project Activities	Regulation on the Control Soil Pollution and Sites Contaminated by the Point Source WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Number of spill response • Contaminated soil amount • Contaminated soil treatment/disposal methodology • Environmental spill/leak incident records/report • Excavation amount • Amount of excavated material that is sent to final disposal • ESMR findings	Included in operation cost	KOSKI/PIU
Water quality	At related water resources (river crossings, wells, fountains, etc.)	In case of a major spill In case of a leak/spill reaching water bodies	Surface water / groundwater quality analysis and measurements that include spill-related pollutants	Sampling and in situ / laboratory measurements Spill notices/correspondences to authorities in case of major spills	Prevention of water quality deterioration compared to current surface water and groundwater quality	Water Pollution Control Regulation Surface Water Quality Regulation Regulation on the Protection of Groundwater Against Pollution and Degradation WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Visual observations • ESMR Findings • Laboratory analysis	Included in operation cost	KOSKI/PIU
Noise	Nearest sensitive receptor	Upon grievance	Noise level	At least 24-hr noise measurements by an authorized environmental laboratory	No noise related grievance	Regulation on Environmental Noise Control	• Noise level measurement results • Noise grievance records • ESMR Findings	Included in operation cost	KOSKI/PIU
Air Quality	Pumping Station	Upon grievance	Settled dust, PM_{10} and $PM_{2.5}$	Sampling/analysis by an authorized environmental laboratory	Below the regulatory limit values defined in Industrial Air Pollution Control Regulation No air quality related grievance received	Regulation on the Assessment and Management of Air Quality Industrial Air Pollution Control Regulation WBG General EHS Guidelines WB OP 4.01	Visual observations ESMR Findings Air quality grievance records • Air quality (PM_{10}/$PM_{2.5}$) measurement results	Included in operation cost	KOSKI/PIU
Resources and Wastes	Storage areas and administration office	Weekly basis starting from the initialization of the operation phase of the Project	Type and amount of waste generated	Visual observation Waste Records Site inspections Disposal truck register	Minimizing the amount of wastes to be sent for disposal and implement waste management hierarchy	Waste Management Regulation Zero Waste Regulation	• Waste segregation practices (amount of waste per type) • Temporary waste storage records • Waste Disposal Agreements and Records • Waste Grievance Records • ESMR Findings	Included in operation cost	KOSKI/PIU
	Administration office	Annually starting from the initialization of operation phase	Energy efficiency	Energy efficiency assessment	Reducing energy consumption by 10% by the end of the first year of operation phase	WB Safeguard Policies	• Annual energy consumption • Annual GHG contribution of the area	Included in operation cost	KOSKI/PIU

OPERATION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
			GHG emission contribution	GHG emission estimation calculations	Achieving neutral carbon emission levels within the Project's lifetime	WBG General EHS Guidelines WB OP 4.01			
Socio-Economic Environment									
Local procurement	Administration office	Annually during operation phase	Number of persons employed from the local community	Employment records	50% of the employees are local people	Labor Law	• Information disclosure records • Stakeholder engagement records • Employee records • Local employment/ procurement ratio	Included in operation cost	KOSKI/PIU
Infrastructure Damage	Administration office	Monthly during operation phase	Number of cases and amount of compensation paid	Incident records Receipts of compensation payments	No infrastructure cases	Criminal Law	• Grievance Records • Official correspondence • ESMR Findings	Included in operation cost	KOSKI/PIU
External and Internal Grievances (to be recorded separately)	Administration office	Monthly during operation phase	Number of received grievances Number of open and closed grievances Average grievance response and closure time Identification of grievance channels	Grievance records (grievance log, received grievance forms, etc.)	Reasonable level of grievances received and resolved within the current service standards to ensure the overall satisfaction of the complainant	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Grievance Records • Presence of mukhtar as representative • ESMR Findings • Social security records	Included in operation cost	KOSKI/PIU
Labor and Working Conditions									
Working conditions	Administration office	Weekly during operation phase	Workers' grievances	Grievance records	Managing provisions given in ESMP properly.	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Workers' Grievance Records • Presence of union or workers' representative • ESMR Findings • Labor/social security records	Included in operation cost	KOSKI/PIU
Occupational health and safety	Administration office	Daily basis starting from the initialization of operation phase	Number of incidents	Incident records	No OHS incidents occurred	Occupational Health and Safety Law WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Incident Records • Number of nonconformities • Training records • Work Permits • ESMR Findings • H&S reports • H&S meetings • Emergency drills	Included in operation cost	KOSKI/PIU
			Incident investigation	Incident investigation records					
			Period of disease occurrence	Disease follow-up register	No infectious disease is recorded				
		Monthly during the operation phase	Number of personnel who are infected with an infectious disease	Training records	No infectious disease is occurred				
		Annually during the operation phase	Training requirements	Annual Environmental, Social Health, and Safety (ESHS) training plan	Every training defined in the Annual ESHS is completed				
		Quarterly during the operation phase	Number and subject of emergency drills	Drill records	Drills are conducted quarterly				
Protecting the workforce	Administration office	Before each recruitment	Age of candidate employee	Age verification with National ID	Prohibit child labor	Labor Law	• No child and forced labor	Included in operation cost	KOSKI/PIU
Workers Engaged by Third Parties and the Supply Chain	Administration office	Before each agreement made	Contractor and sub-contractor agreements	Contract reviews by ESHS expert(s)	No nonconformity is observed with the ESMP	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Sub-contractor Agreements • Grievance Records • ESMR Findings	Included in operation cost	KOSKI/PIU

7. INSTITUTIONAL ARRANGEMENTS AND CAPACITY BUILDING

The main responsible organization for the implementation of this ESMP is KOSKI. KOSKI has the adequate ability and capacity to manage the implementation of the project and in particular the management of E&S issues. Environmental and Social Management System (ESMS) of KOSKI covering all phases of the Project and consisting of management plans on different subjects has available staff and capacity to ensure ESMP implementation. A PIU will be established to carry out operational and administrative tasks. The PIU staff will be the KOSKI's own staff. in different phases of the Project, various parties (contractors, Construction Supervision Team, ILBANK, etc.) will take responsibility for various works in the scope of the ESMP. All mentioned works will be coordinated by the KOSKI. Tables regarding mitigation and monitoring plans, which are given in this ESMP, summarize 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.

7.1. Environmental and Social Management Structure

As the potential impacts and impact levels of the Project vary according to different phases of the Project (land preparation, construction and operation) environmental and social management of the Project are assessed separately. ESMP consists of three main components in that scope, which are as follows:

- Mitigation Plan,
- Monitoring Plan,
- Monitoring Report.

The graphical representation of the environmental and social management structure is given in Figure 7-1.



Figure 7-1. Environmental and Social Management Structure

7.2. Roles and Responsibilities

The Project will be financed by the World Bank. ILBANK is the Borrower of the loan, serving as a Financial Intermediary to KOSKI. KOSKI will be responsible for the implementation of the Project at the local level.

WB is the financing institution and its monitoring is part of WB's internal control system, not a part of the project implementation.

The final ESMP will be made available to public in both KOSKI's and ILBANK's web site prior to any activity on site. ILBANK Project Management Unit (PMU) will include an environmental specialist, OHS specialist, and a social specialist to supervise the implementation of the ESMP. The specialist will supervise the implementation of the ESMP by KOSKI and document performance, recommendations and any further actions required. He/she will provide guidance to KOSKI officials on World Bank procedures, consultation and disclosure requirements. In addition, KOSKI will inform ILBANK and WB about the project changes or unforeseen circumstances in the approved project documents.

For the tender process, KOSKI is responsible to tender all the project works and consultancy services. KOSKI will prepare the tender documents and process the bidding. The WB Procurement Regulations and Public Procurement Law will be applied during the tender process. Implementing of an appropriate application of the environmental and social safeguard policies during whole process is supervised and monitored by ILBANK. In addition, WB has a responsibility of reviewing of incoming reports to see the Bank standards are in progress.

KOSKI 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, KOSKI holds ultimate responsibility for the environmental and social performance of the overall Project, including the performance of its contractors and any other contractors. A Project Implementation Unit (PIU) will be established to carry out operational and administrative tasks. The PIU staff will be the KOSKI's own staff.

The KOSKI's environmental engineer, who will act as the Environmental Manager of this Project, will oversee the implementation of the ESMP and monitoring progress. The responsible parties for the monitoring progress are contractor, supervision consultant and KOSKI/PIU during construction phase, while only KOSKI/PIU is responsible for monitoring progress during operation phase of Project. Potential impacts of Project will be assessed by analyzing relevant parameters in determined periods in the scope of Monitoring Plan. The analyses of parameters will be done by different ways such as sampling, visual observations, site inspections, maintenance records, grievance records etc. The parameters, analysis location, analysis method, analysis time and analysis cost were indicated in Table 6-3 and Table 6-4 in detail. Depending on the monitoring plan, Contractor will prepare monthly Environmental and Social Monitoring Reports (ESMRs) to be submitted to KOSKI; KOSKI will review and submit the ESMRs quarterly to ILBANK. The environmental engineer/expert, one Social Expert and an OHS Expert will be supported by environmental consultants, when necessary. Environmental engineer/expert will appoint a representative on the site to lead the development of this ESMP, and its onsite implementation.

In addition, KOSKI's social expert will act as the Social Affairs Manager of this Project and will manage the social issues outlined in this ESMP and its monitoring progress. The social expert will also manage the grievance redress mechanism and stakeholder engagement.

The roles and responsibilities of KOSKI are given in Table 7-1.

Table 7-1 Structure of KOSKI/PIU

Occupation	Number	Duty in PIU
Mechanical Engineer	1	Head of PIU
	2	Technical Unit
Civil Engineer	1	Branch Manager/Technical Unit
	1	Technical Unit
Electric and Electronic Engineer	1	Branch Manager/Technical Unit

	1	Technical Unit
Environmental Engineer	1	Technical Unit
Social Expert	1	Technical Unit
Officer	2	Procurement Specialist
	1	Financial Expert
Financial Manager	1	Branch Manager
Industrial Engineer/Class A OHS Expert	1	OHS Expert

Moreover, KOSKI will be responsible for the incident and accident reporting and informing the necessary institutions (WB, ILBANK etc.), as per the provisions explained below:See

- WB and ILBANK will be promptly notified 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 or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.
- Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit. Subsequently, as per the Bank's request, a report on the incident or accident and proposed measures to prevent its recurrence will be prepared.
- Therefore, KOSKI will report details of any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.) within 24 hoursand submit an incident report, including RCA, precautions and compensation measures taken within 30days. ILBANK will forward the incident report to the WB immediately upon receipt from KOSKI. The monitoring and supervision of mitigation measures implementations will also be Contractor's responsibility during construction phase of the project for mentioned parameters as given in detail in Section VI.2. Therefore, KOSKI and the Contractor will be in cooperation.
- Prompt notification of accidents and incidents will remain inclusive under the contractor's ESMP.

The Supervision Consultant, who will be selected by tender process to be opened by KOSKI and approved by ILBANK, will have at least one Environmental Expert, one Social Expert and one full time Occupational Health and Safety Expert in its team. If necessary the number of experts will be increased by the decision of ILBANK. The job description given to Supervision Consultant and the required number/qualification of personnel will be determined by the joint efforts of PIU and contractor. Supervision Consultant will oversee the supervision of construction and/or rehabilitation works and installation of equipment. The respective experts will be responsible for identification and management of environmental, social and occupational health and safety related risks and will ensure initiation corrective actions where necessary and report to ILBANK and KOSKI on a timely manner. The experts will also monitor and evaluate the performance of the services provided by the Contractor. In addition to these roles and responsibilities, Supervision Consultant is responsible for controlling whether the necessary training is given to the personnel, who will work during the construction phase. Also, managing the GRM and monitoring regularly the reporting of complaints to the Project Owner is another responsibility of Supervision Consultant. Monitoring and auditing the consultation process will be carried out by Supervision Consultant to ensure that it is managed through safe and effective channels, considering the relevant national and local regulations as well as the health-related recommendations and guidelines of national and international health authorities.

The Contractor will construct the project in line with the approved design documents and will be the responsible body to implement and apply the mitigation measures given in this ESMP during construction phase. The Contractor will comply with its responsibilities specified in this ESMP and ensure that it is aware of its duties and responsibilities within this ESMP for compliance with national regulation and WB Safeguard Policies. The Contractor will employ a full time OHS specialist and a full time environmental and social expert,

who will instruct and consult the workers on compliant working structure and implementation of ESMP (including grievance redress mechanism and the applicable stakeholder engagement activities detailed in project SEP). Furthermore, a competent Environmental, Social Health, and Safety (ESHS) manager of contractor will monitor implementation of measures given in the mitigation plan. The prompt notification of any accident or incident within the scope of construction works in line with the above-described provisions is the responsibility of the Contractor. The Contractor will keep an incident register at the construction site throughout the construction and defects liability period. In addition, the Contractor will be responsible for the preparation and submission of the regular monthly ESMRs on the environmental, social and OHS issues of the Project during the construction phase.

Repair and maintenance will be the responsibility of the Contractor throughout the one-year Defects Liability Period (DLP). After that, the maintenance, repair and operational activities will be performed by the KOSKI.

INsc

7.3. Grievance Redress Mechanism

In accordance with WB OP 4.01, a grievance redress mechanism (GRM) will be established by which people who deem that they have been adversely affected by the Project during planning, construction or operation can bring grievances to the Project for consideration and, if required, resolution. A specific project grievance redress mechanism is beneficial in addressing community and individual concerns and complaints before they escalate beyond control. The purpose of this mechanism is to establish a system for handling, evaluation and resolution of all kinds of grievances, concerns, queries and proposals of the project affected groups and other stakeholders, such as construction workers, regarding the project activities (mainly construction). During the project implementation process, grievances will be addressed at mainly three (3) levels; (i) to the Construction Contractor/Operator at local (site) level, and (ii) to the KOSKI/PIU (involving also Konya Metropolitan Municipality, ILBANK, CIMER and YIMER) at national level and (iii) to World Bank at international level. Moreover, there will two (2) different GRMs for laborers and general public.

Managing grievances, including avoiding and minimizing them as well as effective handling, is an integral part of a sound stakeholder engagement strategy. Experience shows that significant numbers of grievances arise from misunderstandings, and that such grievances can be avoided, or their numbers reduced, through proactive and consistent engagement with communities. Engagement also helps anticipate and review community concerns to prevent them from escalating into grievances. A project-specific GRM is beneficial in addressing community and individual concerns and complaints before they escalate beyond control.

Within the scope of the project, the principle of the GRM is being legitimate, accessible, predictable, equitable, rights-based, transparent, anonymity, non-retaliation.

A GRM has been established by KOSKI in case of failure to fulfill ESMS principles, standards and procedures in line with the international requirements. Grievance redress mechanism aims to assure people or communities who suffer or fear adverse effects of project that they will be heard and assisted with effective and timely resolution. The most important point in the grievance redress mechanism is to ensure that all complaints are effectively received, recorded, resolved and responded to by the KOSKI/PIU on a predetermined timetable and according to their content, and to ensure that the corrective / regulatory action to be taken is acceptable to both parties.

KOSKI will establish GRMs for the use of external and internal stakeholders, as detailed in the project-specific Stakeholder Engagement Plan (SEP) that is prepared and presented by TUMAS – POSEİDON Joint Venture, the E&S Consultant. It should be noted that the workers' grievances will be addressed through separate channels. GRM is accessible to all beneficiaries of ILBANK internationally funded projects, host communities or anyone who is affected by or is likely to affect the projects in question and who wishes to provide feedback or complaints and receive a response.

Under the PMU of the ILBANK Department of International Relations, the GRM Team was created with the assistance of expert/technical experts and technical group managers.

The responsibilities of the technical group manager are to ensure the implementation of the indicated procedures and to lead the grievance closure process when multi-dimensional work is needed.

The responsibilities of the ILBANK PMU's social expert is to ensure that the complaint management system is efficiently working, that investigation and resolution of reported complaints are conducted in a timely and acceptable manner in accordance with this Procedure, that the complaints register database is up-to-date, and to support the ethics committee in investigating grievances in case of sensitive complaints, and to implement corrective actions to close out the complaints.

For a Project that ILBANK will fund through international financial institutions, a Project Implementation Unit (PIU) will be set up at the level of municipalities or utilities. Each PIU shall have a unique GRM, as specified in the Project's Stakeholder Engagement Plan. Municipalities and utilities will designate a focal point to execute GRM.

KOSKI/PIU and the Contractors are responsible for implementing and maintaining the GRM during the construction activities, where KOSKI is responsible for both the construction and operation phases. The PIU of KOSKI, together with contractors and supervision consultant, has to ensure that grievance redress mechanism is implemented effectively. A Social Affairs Manager (the social expert of KOSKI) will be appointed by KOSKI. Additionally, to facilitate communication with women during the grievance process, one of the PIU members assigned responsible for the GRM will be a woman.

Monthly summaries regarding the grievances, queries, and related incidents together with the implementation status of corrective/preventive actions will be prepared by the Contractor throughout the construction phase and by KOSKI during the operation phase. These summaries will be incorporated into monthly ESMRs, which will be prepared by the Contractor in construction phase of the project, to be submitted to the Municipality. Also, the Contractor should convey the grievances immediately to the Project Owner besides summarizing them in Monthly ESMRs. The monthly summaries/reports will be a mean to assess both the number and nature of complaints (if any), along with KOSKI's and contractor/s' ability to address complaints in a timely and effective manner. As for the incidents, the Contractor is responsible for immediate notification of the contingencies such as environmental, social and labor issues or accidents, incidents or loss of time to the Project Owner and keeping an event log on site throughout the lifetime of the Project.

Monthly ESMRs will be prepared by the Contractor to be submitted to KOSKI. Quarterly ESMRs and semiannual Project Progress reports will be prepared by KOSKI, to be submitted to ILBANK together with the Grievance Register. Semiannual ESMRs and Project Progress reports will be prepared by ILBANK to be submitted to WB. These reports will include a summary of the Project's performance on management of health, safety, environment and social issues, grievance redress mechanism and stakeholder engagement activities conducted during the specified period. All the work done for the effective implementation of the GRM will be documented by use of the forms and logs in the project-specific SEP and will be evaluated and reported according to the determined KPI targets. It is also should be noted that the personal information of the complainant having used the GRM will remain confidential and will never be shared in these reports.

KOSKI will ensure that an internal GRM for the Project employees will be available to both direct and contracted workers to allow them to raise their workplace related concerns and grievances. KOSKI will also assess grievance(s) and suggest solutions for employees of contractors and subcontractors to establish an internal GRM, which is easily accessible for all workers. In addition, the logs of workers' GRM will be separate from GRM for general public.

The formal internal and external GRM procedures to be prepared by KOSKI will focus on both stakeholders and public. According to the SEP prepared for the Project, all complaints received are collected in the PIU (Project Implementation Unit) complaints mechanism section, which consists of the staff of KOSKI. Afterwards, received complaints are recorded in the database and stored by KOSKI. In the scope of GRM, workers' and stakeholders' grievance will be logged separately. Then, PIU GRM Officer communicates with the person who made the complaint, in order to confirm that the complaint is delivered in two (2) working days by telephone or e-mail. After that, he/she prepares the draft response and submits it to the Project Management approval. Following the response, the Grievance Form is updated according to the outcome of the process and the complainant gets the result within ten (10) working days. Complaints will be followed and recorded according to the grievance process which is determined in GRM described in the project-specific SEP. At the

end, KOSKI should inform the statistics of the complaints to ILBANK. Complaints / feedback received will be resolved within a certain time period as specified in the national law.

Graphic related to the grievance process are also presented in the Figure 7-2.

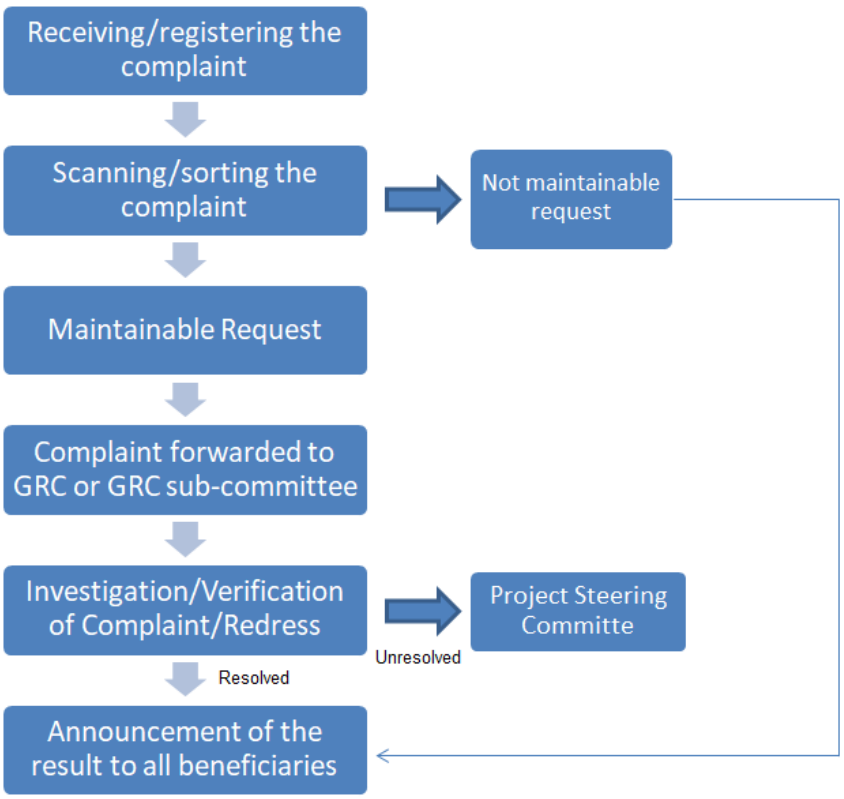


Figure 7-2 GRM Graph

The step-by-step grievance process to be adopted is summarized in the following bullets. Sample Grievance and Grievance Closeout Forms of KOSKI is presented in Annex-6. Also, the sample grievance register table is given in Table 7-2.

- **Submission of a complaint:** Receiving the grievance by any communication channel (KOSKI's website or e-mail, hotline) explained below.
- **Registration of complaint:** Registering/recording through making an entry in the register table and filling the Grievance Form.
- **Forwarding of complaint:** The complaint is forwarded to the relevant persons (site manager on construction sites and experts of the PIU) responsible for handling the complaint in not later than three working days upon receiving the complaint.
- **Evaluation of a complaint:** Evaluating the complaints within ten (10) working days and determining whether the complaint meets the admissibility criteria. If the complaint is not valid, providing relevant explanation to the complainant.
- **Response for a complaint**: If the complaint is valid, identifying and taking corrective measures for resolving the complaint by KOSKI in not later than fifteen (15) working days upon receiving. If resolving the complaint would take longer, a partial response could be provided to the complainant and fill the Grievance Closeout Form.
- **Recording the result of a complaint:** Recording the result of the complaint in register Table 7-2.
- **Right to appeal:** If the complaint cannot be resolved with the existing process, applicants can always apply to relevant legal institutions.

Table 7-2 Sample Grievance Register

Date of Grievance	Name of the Complainant	Subject of Grievance	Responsible Party	Corrective Action	State of Grievance Closure	Date of Closure	Remarks

Currently, KOSKI uses a hotline "185" which is accessible 24/7 for any emergencies, and communication link[8] through the official website of KOSKI, which also enables people to follow up their complaints. The project specific grievance redress mechanism will be adopted and used by KOSKI/PIU during both the construction and operation phases of the Project. All grievances related to the Project will be evaluated and responded to.

Apart from the means of GRM presented by KOSKI, all internal and external stakeholders will also have the opportunity to benefit from other grievance redress mechanisms if not satisfied with the solutions offered by the Project's GRM or have requests for a higher-level explanation through the following communication tools:

- Website : https://www.ilbank.gov.tr/form/bilgiedinmeuluslararasi
- E-mail: bilguidb@ilbank.gov.tr and etikuidb@ilbank.gov.tr
- Phone number: +90 312-508 79 79
- Address for Official Letter: ILBANK Department of International Relations, GRM Team (letters must be marked as personal or confidential) Emniyet Mahallesi Hipodrom Caddesi No:9/21 Yenimahalle /ANKARA

The Presidency's Communication Centre (CIMER) provides a centralized complaint system for Turkish citizens, legal persons and foreigners. All internal and external stakeholders will also have the opportunity to benefit from CIMER. Individual applications can be carried out at the community relations desks at governorates, ministries and district governorates through the following communication tools.

- www.cimer.gov.tr
- Call Centre:150
- Phone number: +90 312 525 55 55
- Fax number: +90 0312 473 64 94
- Address for Official Letter: Republic of Türkiye, Directorate of Communications Kizilirmak Mahallesi Mevlana Bulvari No:144 CANKAYA/ANKARA
- Individual applications: Community relations desks at governorates, ministries, and district governorates
- Mail addressed to Republic of Türkiye, Directorate of Communications: cumhurbaskanligi@tccb.gov.tr

The Foreigners Communication Center (YIMER) provides a centralized complaint system for foreigners. Foreign internal and external stakeholders will have the opportunity to benefit from YIMER. Individual applications can be carried out at the Republic of Türkiye General Directorate of Migration Management through the following communication tools.

- www.yimer.gov.tr
- Call Centre: 157
- Phone number: +90 312 5157 11 22

- Fax number: +90 0312 920 06 09
- Address for Official Letter: Republic of Türkiye General Directorate of Migration Management, Camlica Mahallesi 122. Sokak No: 4 Yenimahalle /ANKARA
- Individual applications: Republic of Türkiye General Directorate of Migration Management.
- Mail addressed to Republic of Türkiye, Directorate of Communications

Any grievance and feedback lodged/conveyed through CIMER and/or YIMER related to the Project are received by Department for Planning and Coordination under the General Directorate of ILBANK. If the grievance and/or feedback is related with Department of International Relations, Department for Planning and Coordination will forward the complaint to the GRM Team with ensuring its anonymity and confidentiality by observing the requirements stipulated by the Law on the Protection of Personal Data (Law No. 6698, 2016). The complaints will be recorded by the GRM Team in the GRM database and managed as per GRM Procedures to timely inform the project on taking corrective actions. Both CIMER and YIMER will complement GRM throughout the project life.

If the complaint cannot be resolved with the existing process, applicants can always apply to relevant legal institutions. Such institutions can be summarized as follows:

- Civil Courts of First Instance,
- Administrative Courts,
- Commercial Courts and First Instance,
- Labor Courts, and
- Ombudsman (https://ebasvuru.ombudsman.gov.tr/)

Furthermore, communities and individuals, who believe that they are adversely affected by a WB supported project, may submit complaints to the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. The details are provided in the project-specific SEP.

Certain complaints warrant urgent action, and the regular GRM procedure may be inappropriate or too slow to prevent an issue from escalating. A separate fast-tracked channel within the existing GRM, including guidance on the circumstances under which it should be employed, can help ensure that high-priority complaints are dealt with in a timely manner. In the case of complaints alleging serious harm or risk of harm, and/or serious rights violations, the GRM's standard operating procedures will call for a fast-track response, whether by the GRM or by immediate referral to another office or organization and immediate notification to the complainant of that referral.

Furthermore, the project GRM will include a channel to receive and address confidential complaints related with Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) and Gender Based Violence (GBV) with special measures in place. If an employee faces insults, ethnic discriminations or SEA/SH issue, s/he can either apply to a higher level superior or directly go to police station, as stipulated in the national referral system of the country for dealing such cases. The content and procedures of the project's GRM will also have a reporting line on such cases in regard to SEA/SH issues and will be handled under full confidentiality. The GRM focal point receiving the SEA/SH related grievance should direct this to national referral systems immediately and record that this has been directed, as set out in the GRM Procedure of ILBANK. All details of the complainant of the sensitive case will be kept strictly confidential.

Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns.

Project affected communities and individuals may submit their complaint to the Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of Bank non-compliance

with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond.[9]

7.4. Capacity Building and Training

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

Necessary training will be given to the personnel immediately upon the recruitment process, which will be also refreshed during the work period and will be performed at a number of levels. Training will cover workers' rights, contract requirements, Code of Conduct, grievance redress mechanism and contact channels. Compliance with the rules of code of conduct, including awareness of and rules relating to gender-based violence, sexual harassment, sexual exploitation and abuse, which are included in the trainings to be provided, will be in the contract articles of the personnel. 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 through the help of in-house expertise of the PIU and the consultants and help of ILBANK and WB. In the long-term training, special environmental and social issues will be examined, and likely solutions provided to the PIU.

The mentioned training will take place in maximum two (2) days. This period will be determined by taking into account 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 should be performed at the end of the training given to the personnel. This is intended 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 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 regarding Code of Conduct, GBV & SEA/SH, Grievance Redress Mechanism, EHS and WB Requirements, and
- First-Aid and Emergency Preparedness Measures

Environmental and Social Trainings

Environmental and Social Trainings will cover the waste management, energy efficiency, waste that causes environmental pollution, hazardous waste management, traffic management, infectious diseases and grievance redress mechanism. Environmental and social trainings will be given to the appointed staff and workers of the Contractor by ILBANK before the construction starts. The planned training is expected to take four (4) hours. The training will be refreshed as the work site changes and/or workers change.

Chance Find Procedure Training

[9] For information on how to submit complaints to the Bank's corporate Grievance Redress Service (GRS), please visit: http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Chance Find Procedure training will cover the actions required if previously unknown heritage resources, particularly archaeological resources, during the project construction. The training will be given to the appointed staff and workers of the Contractor by ILBANK before the construction starts. The planned training is expected to take two (2) hours. The training will be refreshed as the work site changes and/or workers change.

Occupational Health and Safety Training

OHS Training will cover the work-site accidents and their causes in construction works, special working subjects according to the teams, technical subjects such as the correct use of hand tools and equipment. Also, the training will focus on information on labor legislation, legal rights and responsibilities of employees, workplace order, legal consequences arising from work accident and occupational disease. The training will be given to the workers of the Contractor by ILBANK before the construction starts. The planned training is expected to take two (2) hours. The training will be refreshed as the work site changes and/or workers change.

Induction Training

Induction Training will cover the current risks and potentially dangerous areas, emergency action and safety practices related to the site. The training will be given to the workers of the Contractor by ILBANK before the construction starts. The planned training is expected to take two (2) hours. The training will be refreshed as the work site changes. Also, when a new worker arrives, the training will be repeated for that worker.

First Aid and Emergency Preparedness Training

The subjects of the First Aid and Emergency Preparedness Training will be defined by the relevant educational institutions. The training will be given to the appointed staff and workers of the Contractor before the construction starts. The planned training is expected to take 16 hours. The training will be refreshed as the work site changes and/or workers change.

Table 7-3 provides examples of the basic training for the ESMP implementation. The training programs will be developed annually and delivered by the PIU.

Table 7-3 Proposed Training Program

Module 1	
Training course	Environmental and social supervision, monitoring and reporting
Participants	Environmental staff, technical staff and administrative staff of the PIU
Time	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.
Duration	Two (2) days of training twice a year to be repeated on a yearly basis until the end of the DLP.
Content of the Training	General environmental and social management relating to the Project Requirements on environmental and social monitoring Monitoring and implementation of mitigation measures Guide and supervise contractor in implementation of the ESMP Documentation and reporting Code of conduct SEA/SH and GBV training/ awareness Risk response and control

Module 1	
	Other areas to be determined
Trainer	Environmental and Social Consultant or ILBANK
Module 2	
Training course	Implementation of mitigation measures
Participants	Contractor, related authorities: On-site construction management staffs, environmental staffs of contractor, related authorities
Time	After signing the works contract
Duration	Two (2) days of training twice a year to be repeated on a yearly basis depending on needs.
Content of the Training	Overview of potential impacts and mitigation measures Requirements of environmental monitoring Occupational Health and Safety Training Role and responsibilities of the contractor Content and methods of implementation of environmental mitigation measures Response and risk control Preparation and submission of report Risk response and control Other areas to be determined
Trainer	PIU with support of the ILBANK

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.

7.5. Monitoring and Reporting Arrangements

Environmental and Social Monitoring Report (ESMR) is an important tool to record ESMP's monitoring activities.

The results of technical assessments of relevant issues given in Table 6-3 and Table 6-4 will be presented in ESMRs. The results will be compared with the national legislative requirements and WBG General and Sector-specific EHS Guidelines. The results of the visual observations together with the key issues observed will be submitted in written form. ESMRs will focus on the negative findings as well as the good practices. The negative findings will be supported with photographical evidence. For each negative observation, a corrective action will be suggested with a reasonable due date. Any analysis/sampling/measurement report will be given as an annex of the ESMR together with the relevant assessment and necessary remediation activities. The findings of the ESMRs will keep this ESMP as a living document; thus, the ESMP will be reviewed and revised by the environmental and social unit of the KOSKI according to these findings, if necessary, to do so.

In that scope, Contractor will prepare monthly ESMRs to be submitted to KOSKI and KOSKI's Project Implementation Unit will produce quarterly ESMRs for all sub-project sites and monitor quality of reporting throughout the duration of works and reporting requirements will be included in bidding documents of the contractors. KOSKI will be submitting these reports to ILBANK together with the Grievance Register. Also, ILBANK will prepare and submit regular ESMRs (semi-annually) on the environmental, social, health and safety performance of the Project, including but not limited to the implementation of the ESMP, status of preparation and implementation of E&S documents required under the ESMP, stakeholder engagement activities, performance of the grievance redress mechanism(s) to the WB together with Project Progress Reports.

The reports will be prepared in both Turkish and English, and annual ESMRs will be disclosed through KOSKI's website and at least Turkish versions will be made physically available at mukhtar offices at Sugla Group Districts.

8. CONSULTATIONS WITH AFFECTED GROUPS AND NON-GOVERNMENTAL ORGANIZATIONS

The E&S Consultant is preparing the Draft ESMP in compliance with the stipulated standards. The Draft ESMP will be subject to stakeholder consultation process aiming to inform the public and to receive comments, questions and concerns of the project-affected groups and local NGOs (see Table 8-1) in line with the procedure stipulated by the international requirements. In this regard the non-technical summary of the Draft ESMP will be disclosed before and during the consultation meeting.

In the meeting the E&S Consultant will make a presentation that provides information on the project description, its potential environmental and social impacts and risks and then comments and expectations of the stakeholders will be received through a questions and answers session. Also, a Sample Consultation Form provided in Annex-7 will be filled during the meeting. Meeting minutes and forms are filled by the E&S consultant by providing information from the participants. The inputs of the public hearing and discussions will be taken into account and the ESMP and the SEP will be revised accordingly. The consultation activities will be presented considering the content provided in “Annex 3: Table of Contents for the Public Consultation Documentation” of ESMF prepared by ILBANK for SCP-II AF.

8.1. Identification of Consultation Participants

In order to develop an effective consultation process, it is necessary to identify stakeholders and determine who is likely to be affected (both directly and indirectly) by the Project (“affected parties”); who may have an interest in the Project (“interested parties”); and have the potential to influence project outcomes or operations. In addition, it is also essential to identify individuals and groups that may be differentially affected by the Project because of their disadvantaged or vulnerable status in order to construct an effective consultation process. For this purpose, a Stakeholder Engagement Plan (SEP) has been prepared by E&S Consultant. In this Plan, individuals/groups and institutions that will be affected or can be affected by this project have been identified.

The persons and institutions that are affected or likely to be affected by the Project provided in Table 8-1 are expected to attend the stakeholder consultation meetings. In this framework, the points taken into account in the determination of the stakeholder consultation meeting participants, who will be affected or have the potential to be affected by the Project are as follows:

- The impact area of Project
  - Living in residential areas close to the project area,
  - Being affected by problems such as noise and dust that may arise during the construction phase of the Project,

- The nature of impact
  - According to the nature of the impact, local/national government types, NGOs, academic institutions, and research institutions that may be related to this impact issue.

It should be noted that the presented project-affected groups and local NGOs list provides the most prominent stakeholders and that organizations or groups which are not listed, and wish to be informed about the Project, can make contact ILBANK and/or KOSKI. The identified potential stakeholders are listed in Table 8-1.

Table 8-1 List of Potential Project-Affected Groups and Local NGOs

Level of involvement	Category	Organization / Entity
National	Ministries and Relevant Central Authorities	Ministry of Environment, Urbanization and Climate Change
		Ministry of Agriculture and Forestry
		Ministry of Health
		Ministry of Energy and Natural Resources
		Ministry of Family and Social Services
		Ministry of Foreign Affairs
		Ministry of Labor and Social Security
		General Directorate of Environmental Management
		General Directorate of State Hydraulic Works (DSI)
		General Directorate of Water Management
		Ministry of Interior Disaster and Emergency Management Presidency (AFAD)
	NGOs	Chamber of Urban Planners
		Chamber of Environmental Engineers
		Chamber of Agricultural Engineers
		Environment Foundation of Türkiye
		Environment Protection Foundation of Türkiye
		Nature Association
		Turkish Foundation for Combating Soil Erosion, Reforesting and the Protection of Natural Habitats (TEMA)
		Waste and Environmental Management Association (TAYCED)
		Foundation for the Protection and Promotion of the Environment and Cultural Heritage (CEKUL)
		WWF Türkiye
Local	Governmental / Local Authorities and Agencies	Governorship of Konya
		Konya Metropolitan Municipality
		Konya Regional Directorate of Cultural Heritage Preservation Board
		Konya Provincial Directorate of Environment, Urbanization and Climate Change
		Konya Provincial Directorate of Agriculture
		Konya Provincial Directorate of Health
		Ahirli Municipality
		Seydisehir Municipality
		Yalihuyuk Municipality
		District Governor of Ahirli
		District Governor of Seydisehir
		District Governor of Yalihuyuk
		Ahirli Social Assistance and Solidarity Foundation
		Seydisehir Social Assistance and Solidarity Foundation
		Yalihuyuk Social Assistance and Solidarity Foundation
		Provincial AFAD offices
	NGOs	Related local NGOs (if any)
	Residential Areas/Local Communities/Potentially Project Affected People	Akkise Neighborhood
		Alicerci Neighborhood
		Bademli Neighborhood
		Baliklava Neighborhood
		Buyukoz Neighborhood
		Ciftlik Neighborhood
		Erdogan Neighborhood
		Kucukoz Neighborhood
		Karacakuyu Neighborhood
		Kayacik Neighborhood
		Ahirli (Central) Neighborhood
		Asagikaraoren Neighborhood

Level of involvement	Category	Organization / Entity
		Baskaraoren Neighborhood
		Ortakaraoren Neighborhood
		Arasogut Neighborhood
		Sarakoy Neighborhood
		Yalihuyuk Neighborhood
		Owners/Users of agricultural fields
		Farmers
	Business Enterprises	Related business enterprises within the Project Impact Area (if any)
	Universities	Selcuk University
		Necmettin Erbakan University
		Konya Technical University
		Konya Chamber of Commerce (KTO) Karatay University
		Konya Food and Agriculture University

Information obtained from formal/informal interviews with representatives/key informants of neighborhoods within the project area are used to identify vulnerable/disadvantaged individuals/ groups. In addition, the guidance of the official authorities and public institutions in the region has helped identify possible vulnerable/disadvantaged individuals/groups. In the scope of this project, children, the elderly, and the disabled people, who live close to the project area and live in areas where noise and dust problems are likely to occur during the construction phase of the Project, are considered as vulnerable/disadvantaged individuals/groups. However, the details of vulnerable/disadvantaged individuals/ groups have been identified in the SEP as one of the key components of the plan.

8.2. Consultation Documentation

In the scope of project consultations with project affected groups and non-governmental organizations, it is required to hold one (1) stakeholder consultation meeting as per WB OP 4.01This process will be carried out by following the steps below.

Place and Date of Consultation Meetings

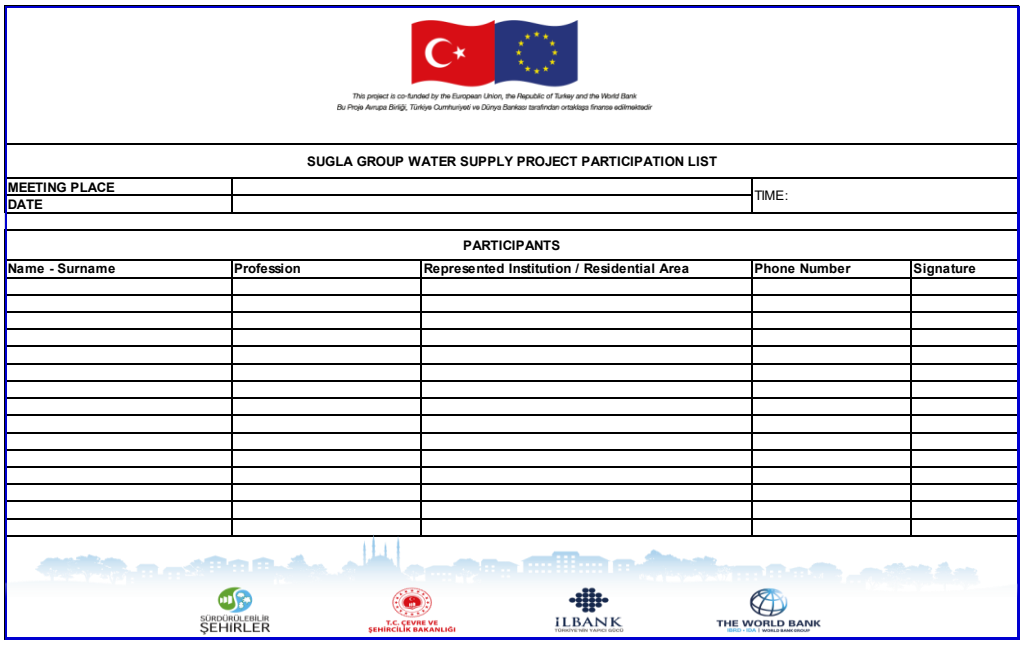
When the date and place of the consultation meeting are clarified, they will be announced through the local media, Notice Board of the KOSKI, in public places such as mosques, schools, mukhtars' offices, etc. and an information text sent to the neighborhood mukhtars. Information regarding the planned public/stakeholder consultation is provided in Table 8-2.

Table 8-2 Details of Planned Public/Stakeholder Consultation

No	Location	Date	Notes	Stakeholder Consultation
1	One of the districts on Project Area (Ahirli District, Yalihuyuk District)	To be updated	Announcement of public consultation will be published in media (local and/or national newspaper) Announcement will be placed at the Notice Board and website of KOSKI, mukhtar office, local mosques and schools. Non-technical Summary of the Draft ESMP Report will be disclosed	To be updated.

Details on Participants

Information on the participants of the stakeholder consultation meetings will be recorded via a "participant list" filled in by the attendees during the meeting. The participation list format is given in Figure 8-1.



This project is co-funded by the European Union, the Republic of Turkey and the World Bank
Bu Proje Avrupa Birliği, Türkiye Cumhuriyeti ve Dünya Bankası tarafından ortaklaşa finanse edilmektedir

SUGLA GROUP WATER SUPPLY PROJECT PARTICIPATION LIST

MEETING PLACE		TIME:	
DATE			

PARTICIPANTS

Name - Surname	Profession	Represented Institution / Residential Area	Phone Number	Signature

SÜRDÜRÜLEBİLİR ŞEHİRLER · T.C. ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI · İLBANK TÜRKİYE'NİN YAPICI GÜCÜ · THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

Figure 8-1 Participation List of Consultation Meeting

The list of participants and/or other forms that will include personal information such as duties, e-mail addresses, signature, contact numbers, etc. of the participants will be kept in the records and will be shared in the ESMP and SEP after the respective lines containing personal data are blurred considering “The Law on The Protection of Personal Data”. Moreover, the screenshots of the newspaper ads, full minutes of the meeting and all materials/documents/ forms related with the consultation activities will be provided as an appendix to this ESMP and SEP.

9. ANNEXES

ANNEX-A EIA EXEMPTION DECISION

144

000375

T.C.
KONYA VALİLİĞİ
Çevre ve Şehircilik İl Müdürlüğü

Sayı : E-47342952-220.03-336728
Konu : ÇED Muafiyeti (KOSKİ-İsale Hattı)

22.02.2021

KONYA SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜNE
(Yatırım ve İnşaat Dairesi Başkanlığı)

İlgi : a) 18/02/2021 tarihli ve 98067411-000-2616 sayılı yazınız.
b) 22/02/2021 tarihli ve 135965 Referans No'lu Başvuru.

Konya İli Karapınar İlçe merkezi ve Akçayazı, Hotamış, Sazlıpınar Mahalleleri, Çumra İlçesine bağlı B.Aşlama, Karkın, Abditolu Mahalleleri, Karatay İlçesine bağlı İsmil, Ovakavağı, Hayıroğlu, Bakırtolu, Sakyatan, Şatır Mahalleleri, Meram İlçesine bağlı Kaşınhanı, Boruktolu, Çarıklar Mahalleleri, Ahırlı İlçe merkezi ve Akkise, Aliçerçi, Bademli, Balıklava, Büyüköz, Çiftlik, Küçüköz, Erdoğan, Karacakuyu, Kayacık Mahalleleri, Seydişehir İlçesine bağlı Aşağıkaraören, Başkaraören, Ortakaraaören Mahalleleri, Yalıhüyük İlçe merkezi ve Arasöğüt, Saray Mahallelerinde Konya Su ve Kanalizasyon İdaresi Genel Müdürlüğü tarafından yapılması planlanan "Karapınar ve Suğla Grubu İçme Suyu Temini İsale Hattı" projesi, 25/11/2014 tarih ve 29186 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği Listelerinde yer almadığından kapsam dışı olarak değerlendirilmiştir.

Ancak, planlanan yatırım ile ilgili olarak, 5491 sayılı kanunla değişik 2872 sayılı Çevre Kanunu ile bu Kanuna istinaden çıkarılan Yönetmeliklerin ilgili hükümlerine uyulması ve diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması, ekolojik dengenin bozulmamasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi hususunda;

Gereğini rica ederim.

Özgür SOMUNCU
Vali a.
İl Müdür Yardımcısı

Dosyaya kaldırılacaktır.

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Belge Doğrulama Kodu : FMIGSFAW Belge Doğrulama Adresi: https://www.turkiye.gov.tr/cevre-ve-sehircilik-bakanligi

Horozluhan Mh. Abdulbasri Sk.No:2 Selçuklu/KONYA
Tel :(332)2245500 Faks:(332)2245899 e-Posta:konya@csb.gov.tr
https://konya.csb.gov.tr KEP: konyacevrevesehircilik@hs01.kep.tr

Bilgi için:Tuba KALKAN GÜRCAN
Mühendis
Telefon No:(332) 224 56 00-5758

ANNEX-B SWH 4th Regional Directorate Opinion Letter

T.C.
TARIM VE ORMAN BAKANLIĞI
Devlet Su İşleri Genel Müdürlüğü
4. Bölge Müdürlüğü

Sayı : E-57417367-116.01-1648011
Konu : Suğla Grubu İçme suyu Projesi Hk.

KONYA SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜNE

İlgi : 02.08.2021 tarihli ve 98067411-220.99-11265 sayılı yazınız.

İlgi yazınızda, Suğla Grubu olarak ifade edilen Ahırlı ilçe merkezi ve Ahırlı ilçesine bağlı bulunan mahalleler, Yalıhüyük ilçe merkezi ve Yalıhüyük ilçesine bağlı bulunan mahalleler ve Seydişehir ilçesine bağlı üç mahallenin içme suyu temini amacıyla kullanılmak üzere Suğla Depolaması ve Alagöz Kaynağı dışında başkaca su kaynaklarının gösterilmesi istenmektedir.

Yapılan incelemelerde, şu aşamada söz konusu proje için kullanılacak en uygun alternatifin içmesuyu amacıyla açılacak sondaj kuyuları olduğu mütalaa edilmektedir.

İlgili proje ihtiyacının yeraltı sularından karşılanması durumunda gerekli proje bilgilerinin Bölge Müdürlüğümüze sunulması hususunda;

Bilgilerinizi ve gereğini arz ederim.

Mustafa BALTA
Bölge Müdürü adına
Bölge Müdür Yardımcısı

Bu belge, güvenli elektronik imza ile imzalanmıştır.

ANNEX-C Drilling Well Logs and Analysis Result

Suğla Group No-2 Well:

KOSKİ GENEL MÜDÜRLÜĞÜ
SU TESİSLERİ DAİRESİ BAŞKANLIĞI SONDAJ KUYUSU LOGU / TATBİK PROJESİ

A - GENEL DURUM

Kuyu adı	SUĞLA GRUBU 2	Kuyu Koordinatı	Y:417103 X:4136357
Kullanma Bel.Tar. ve No		Kuyu Rakımı	1094 m
İl	Konya	Sondaj Boyu	200 metre
İlçe	Seydişehir	Makine Markası	MAN
Mahalle	Aşağı/Karaören	Su İhtiyacı	
Sondaj Başlama Tarihi	04.09.2022	Kuyuyu Açan Firma	G ve M Müh. Sondaj
Sondaj Bitiş Tarihi	13.09.2022	Firma Adresi	Hilal Mahallesi Turan Güneş Bulvarı 86/3 Çankaya/Ankara
Açılış Gayesi	İçmesuyu		

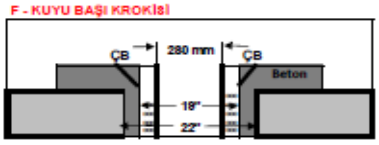
E - KUYU YERİ KROKİSİ



B - SU VERİM VE TECRÜBESİ

Kademe	Metreler Arası	Ne ile Yapıldığı	Tecrübe Süresi Saat	Statik Seviye	Dinamik Seviye	Verim	
						QP	QA
Müştrek		Dalgıç Pom	72	2	48	20	

F - KUYU BAŞI KROKİSİ



C - SU ANALİZİ

Analiz No ve Tarih	2022/6549	Sülfat (mg/lt)	15.8276	Bor (µg/lt)	<48,00
pH	8.1	Amonyak (mg/lt)	<0,42	Bakır (µg/lt)	<3,0
Sertlik (FS)	16.2130	Nitrit (mg/lt)	<0,04	Demir (µg/lt)	<7,21
EC* (20 °C µS/cm)	391	Nitrat (mg/lt)	7.91	Kurşun (µg/lt)	<0,6
Klorür (mg/lt)	9.0216	Alüminyum (µg/lt)	<9,6	Arsenik (µg/lt)	3.5840
Kimyasal Analiz Neticesi					
Bakteriyolojik Analiz Neticesi					

G - POMPA ÖZELLİKLERİ

Kurulacak Pompanın Max. Debisi	15 lt/sn Dalgıç Pompa
Kurulacak Pompanın Derinliği	100 - 108 m

G - DÜZENLEME

Mesleği	Adı Soyadı	Belge No:	İmzası
Jeoloji Mühendisi	Erdeniz ÖZDEMİR	99/1239	
Sondör	Ali SARI	3069	

D - KUYU İNKİŞAFI

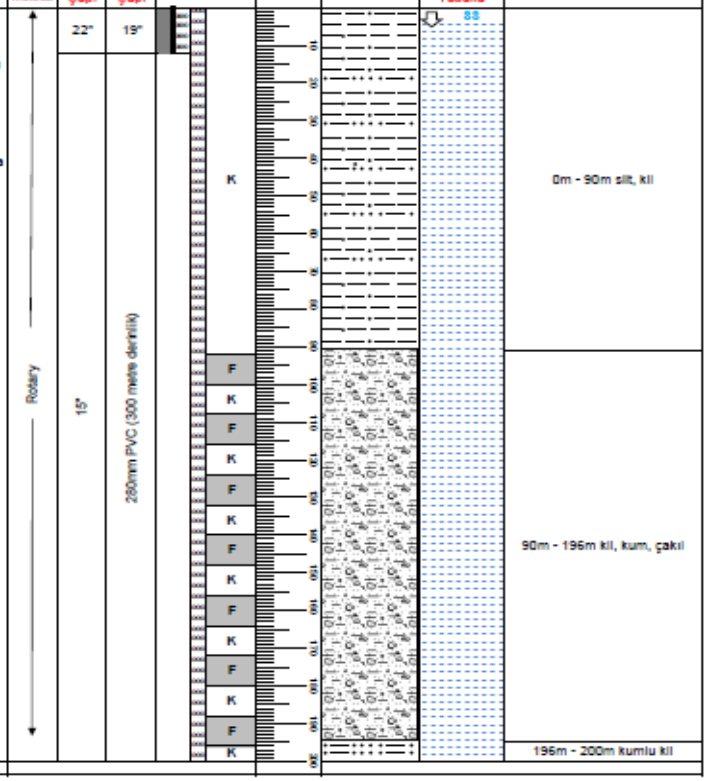
İnkişaf Süresi	İnkişaf Tipi	Kompresör Kapasitesi
10 saat	Kompresör	25 bar

I - KUYU DURUMU

Sondaja 22" lik matkap ile başlandı 12 m. kadar ilerlendi. 12 - 200 m.arası 15" matkap ile açıldı ve kuyu 200 m.de sonlandırıldı.
0 - 12 m. arası tecrit işlemi için 19" çelik muhafaza borusu indirildi ve etrafına tecrit betonu atıldı.
Formasyon diskripsiyonu ve sondaj esnasında alınan kırıntı numuneye göre değerlendirilerek kuyunun 200 m. si buna göre teçhiz edildi.
Çakıllama ile birlikte kuyuya su verilmek suretiyle lavaj yapıldı. Çakıllamanın ardından kompresör yardımıyla kuyuda inkişaf yapıldı.
Kuyu da su tecrübesinin tamamlanmasından sonra projeye uygun olarak kuyu ağzı betonu atıldı.
Kimyasal analiz için kuyudan 1 lt temiz su alındı

TEÇHİZ

0	- 92	m. 280 mm PVC	K
92	- 100	m. 280 mm PVC	F
100	- 108	m. 280 mm PVC	K
108	- 116	m. 280 mm PVC	F
116	- 124	m. 280 mm PVC	K
124	- 132	m. 280 mm PVC	F
132	- 140	m. 280 mm PVC	K
140	- 148	m. 280 mm PVC	F
148	- 156	m. 280 mm PVC	K
156	- 164	m. 280 mm PVC	F
164	- 172	m. 280 mm PVC	K
172	- 180	m. 280 mm PVC	F
180	- 188	m. 280 mm PVC	K
188	- 196	m. 280 mm PVC	F
196	- 200	m. 280 mm PVC	K



Suğla Group No-3 Well:

KOSKİ GENEL MÜDÜRLÜĞÜ
SU TESİSLERİ DAİRESİ BAŞKANLIĞI SONDAJ KUYUSU LOGU / TATBİK PROJESİ

A - GENEL DURUM

Kuyu adı	SUĞLA GRUBU 3	Kuyu Koordinatı	Y:417295 X:4136586
Kullanma Bel.Tar. ve No		Kuyu Rakımı	1092 m
İl	Konya	Sondaj Boyu	200 metre
İlçe	Seydişehir	Makine Markası	MAN
Mahalle	AşağiKaraören	Su İhtiyacı	
Sondaj Başlama Tarihi	02.08.2022	Kuyuyu Açan Firma	G ve M Müh. Sondaj
Sondaj Bitiş Tarihi	15.08.2022	FirmaAdresi	Hilal Mahallesi Turan Güneş Bulvarı 86/3 Çankaya/Ankara
Açılış Gayesi	İçmesuyu		

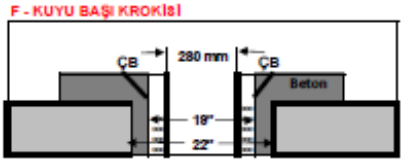
E - KUYU YERİ KROKİSİ



B - SU VERİM VE TECRÜBESİ

Kademe	Metreler Arası	Ne ile Yapıldığı	Tecrübe Süresi Saat	Statik Seviye	Dinamik Seviye	Verim	
						QP	QA
Müştrek		Dalgıç Pom	72	2	52	20	

F - KUYU BAŞI KROKİSİ



C - SU ANALİZİ

Analiz No ve Tarih	2022/5757	Sülfat (mg/lt)	14.8752	Bor (µg/lt)	<48,00
pH	7.75	Amonyak (mg/lt)	<0,42	Bakır (µg/lt)	<3,0
Sertlik (FS)	17.0480	Nitrit (mg/lt)	<0,04	Demir (µg/lt)	<7,21
EC* (20 °C µS/cm)	307	Nitrat (mg/lt)	9.7917	Kurşun (µg/lt)	<0,6
Klorür (mg/lt)	10.1773	Alüminyum (µg/lt)	<9,6	Arsenik (µg/lt)	3.4570
Kimyasal Analiz Neticesi					
Bakteriyolojik Analiz Neticesi					

G - POMPA ÖZELLİKLERİ

Kurulacak Pompanın Max. Debisi	15 lt/sn Dalgıç Pompa
Kurulacak Pompanın Derinliği	96 - 104 m

G - DÜZENLEME

Mesleği	Adı Soyadı	Belge No:	İmzası
Jeoloji Mühendisi	Erdeniz ÖZDEMİR	99/1239	
Sondör	Ali SARI	3069	

D - KUYU İNKİŞAFI

İnkişaf Süresi	İnkişaf Tipi	Kompresör Kapasitesi
10 saat	Kompresör	25 bar

I - KUYU DURUMU

Kuyu Raporu

Sondaja 22" lik matkap ile başlandı 8 m. kadar ilerlendi. 8 - 200 m.arası 15" matkap ile açıldı ve kuyu 200 m.de sonlandırıldı.

0 - 8 m. arası tecrit işlemi için 19" çelik muhafaza borusu indirildi ve etrafına tecrit betonu atıldı.

Formasyon diskripsiyonu ve sondaj esnasında alınan kırıntı numuneye göre değerlendirelerek kuyunun 200 m. si buna göre teçhiz edildi.

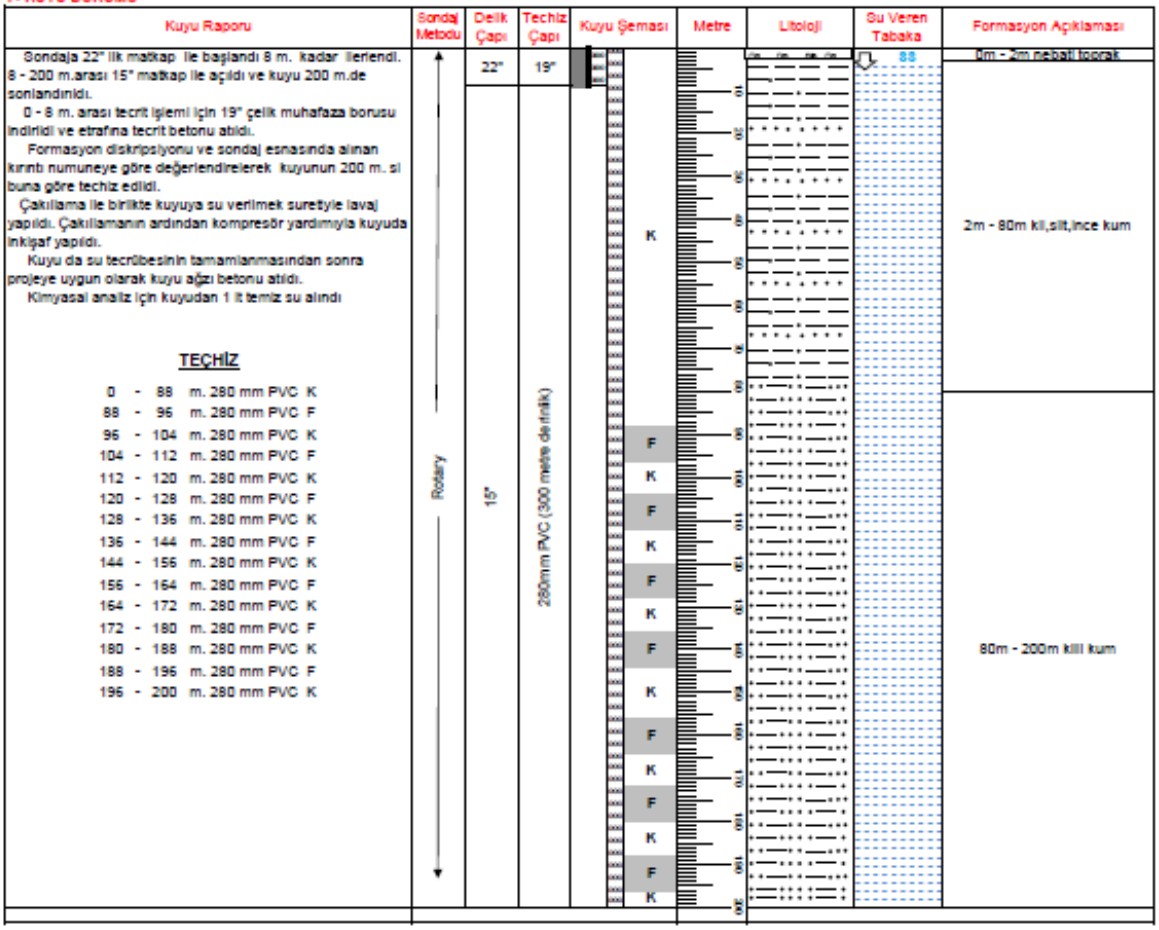
Çakıllama ile birlikte kuyuya su verilmek suretiyle lavaj yapıldı. Çakıllamanın ardından kompresör yardımıyla kuyuda inkişaf yapıldı.

Kuyu da su tecrübesinin tamamlanmasından sonra projeye uygun olarak kuyu ağzı betonu atıldı.

Kimyasal analiz için kuyudan 1 lt temiz su alındı

TEÇHİZ

0	- 88	m. 280 mm PVC	K
88	- 96	m. 280 mm PVC	F
96	- 104	m. 280 mm PVC	K
104	- 112	m. 280 mm PVC	F
112	- 120	m. 280 mm PVC	K
120	- 128	m. 280 mm PVC	F
128	- 136	m. 280 mm PVC	K
136	- 144	m. 280 mm PVC	F
144	- 156	m. 280 mm PVC	K
156	- 164	m. 280 mm PVC	F
164	- 172	m. 280 mm PVC	K
172	- 180	m. 280 mm PVC	F
180	- 188	m. 280 mm PVC	K
188	- 196	m. 280 mm PVC	F
196	- 200	m. 280 mm PVC	K



T.C.
Konya Büyükşehir Belediyesi
Konya Su Kanalizasyon İdaresi Genel Müdürlüğü
SU KALİTE KONTROL LABORATUVARI

Analiz Raporu

TÜRKAK Test TS EN ISO/IEC 17025 AB-0543-T

Rapor No: 2025/3412 Tarih:21/05/2025
Analiz Amacı: Rutin Analiz

Numuneyi Gönderen Kuruluş/Kişi		SU TESİSLERİ DAİRESİ BAŞKANLIĞI		
Numuneyi Alan Kuruluş/Kişi		MUHAMMET BUĞRA TÜRKMEN		
Numunenin Alındığı		Numunenin		
	Tarih	15/05/2025	Cinsi	Kuyu Suyu
	Ambalajı:		Miktarı:	500 ML LİK PLASTİK KAP
	Adres:	AKKİSE SONDAJ SEYDİŞEHİR		
Laboratuvara Geliş Tarihi:		16/05/2025	Kayıt Tarihi:	16/05/2025
Analiz Başlangıç Tarihi:		16/05/2025	Analiz Bitiş Tarihi:	16/05/2025

AB-0543-T
2025/3412
05-25

Analiz	Analiz Sonucu	Tayin Limiti (LOQ)	Mevzuat Limiti (1)	Analiz Metodu
Fiziksel Parametreler				
Bulanıklık* (NTU)	0.22		TKEDY	TS EN ISO 7027-1/Türbidimetrik
İletkenlik* (20 °C de µS/cm)	257		2500	SM 2510 B Elektrot İletkenlik Ölçüm
Koku	Normal		TKEDY	Organoleptik
PH*	8.25		6.5-9.5	SM 4500 H+ B. /Elektrokimyasal
Renk (Pt/Co)	0.18		TKEDY	SM 2120 B.
Tat	Normal		TKEDY	Organoleptik
Kimyasal Parametreler				
Alüminyum (Al)* (µg/L)	< 10.0000	10.0000	200	SM 3125 B./ICP MS
Amonyum (NH4+)* (mg/L)	< 0.0500	0.0500	0.5	TS EN ISO 14911/ICS
Antimon (Sb)* (µg/L)	< 1.0000	1.0000	5	SM 3125 B./ICP MS
Arsenik (As)* (µg/L)	< 2.0000	2.0000	10	SM 3125 B./ICP MS
Bakır (Cu)* (µg/L)	< 2.0000	2.0000	2000	SM 3125 B./ICP MS
Bor (B)* (µg/L)	18.2964	2.0000	1000	SM 3125 B./ICP MS
Civa (Hg)* (µg/L)	< 0.5000	0.5000	1	SM 3125 B./ICP MS
Çinko (Zn)* (µg/L)	< 2.0000	2.0000		SM 3125 B./ICP MS
Demir (Fe)* (µg/L)	11.6153	10.0000	200	SM 3125 B./ICP MS
Florür (F^-)* (mg/L)	< 0.1250	0.1250	1.5	SM 4110 B./ICS
Kadminyum (Cd)* (µg/L)	< 1.0000	1.0000	5	SM 3125 B./ICP MS
Kalsiyum (Ca)* (mg/L)	6.3624	2.5000		TS EN ISO 14911/ICS
Klorür (Cl^-)* (mg/L)	2.8239	2.5000	250	SM 4110 B./ICS
Kurşun (Pb)* (µg/L)	< 1.0000	1.0000	10	SM 3125 B./ICP MS
Magnezyum (Mg)* (mg/L)	37.1489	2.5000		TS EN ISO 14911/ICS

Açıklamalar:
Numune Müşteri Tarafından steril kapta Alınıp Getirilmiş ve Beyan Ettikleri Gibi Analize Alınmıştır.
Bu rapor KOSKİ Genel Müdürlüğü Su Kalite Kontrol Laboratuvarının yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.
Koyu renkte yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.
Bu rapordaki sonuçlar ve görüşler yukarıda belirtilen numune ve deneyi yapılan numune için geçerlidir.
Özel istek numune analiz raporları adli ve idari işlemlerde ve reklam amaçlı kullanılamaz.
Karar kuralının açık tanımı: Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, eğer mevzuatta geçerli bir karar kuralı var ise bu karar kuralı uygulanır, mevzuatta geçerli bir karar kuralı yok ise ölçüm belirsizliği değeri 'Basit Karar Kuralına' göre değerlendirilir ve sonuçlar güven düzeyi ve ölçüm belirsizliği eklenip çıkarılmadan olduğu gibi raporlanır.
Numune dış müşteri tarafından sağlandığı durumlarda, numune alındığı şekliyle deneye tabi tutulacaktır. Numunenin alınışından Laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenilen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir ve ölçüm belirsizliğinde numune almadan kaynaklı belirsizlik katkısı dahil edilmeyecektir. Genişletilmiş ölçüm belirsizlikleri(k:2 %95 güven aralığında) müşteri talebi, yasal mevzuat gereksinimi veya sınır değere uygunluğu etkilediği durumlarda belirtilir.
Doğrulama linki bulunmayan ve linkten doğrulanamayan veya ıslak imzalı olmayan analiz raporları geçersizdir.
(*) işaretli parametler TÜRKAK tarafından akredite edilmiştir.
TKEDY:Tüketicilerce Kabul Edilebilir ve Herhangi Bir Anormal Değişim Yok.
Deney laboratuvarı olarak faaliyet gösteren KOSKİ Su Kalite Kontrol Laboratuvarı TÜRKAK'tan AB0543T ile TS EN ISO/IEC 17025:2017 standardına göre akredite edilmiştir. (KOSKİ Water Quality Control Laboratory accredited by TÜRKAK under registration number AB0543T for as TS EN ISO/IEC 17025:2017 Testing 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 cooperation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of testing certificates.)

T.C.
Konya Büyükşehir Belediyesi
Konya Su Kanalizasyon İdaresi Genel Müdürlüğü
SU KALİTE KONTROL LABORATUVARI

AB-0543-T
2025/3412
05-25

Analiz Raporu

Rapor No: 2025/3412 Tarih:21/05/2025
Analiz Amacı: Rutin Analiz

Analiz	Analiz Sonucu	Tayin Limiti (LOQ)	Mevzuat Limiti (1)	Analiz Metodu
Kimyasal Parametreler				
Mangan (Mn)* (µg/L)	< 2.0000	2.0000	50	SM 3125 B./ICP MS
Nikel (Ni)* (µg/L)	< 2.0000	2.0000	20	SM 3125 B./ICP MS
Nitrat (NO_3^-)* (mg/L)	3.5153	2.5000	50	SM 4110 B./ICS
Nitrit (NO_2^-)* (mg/L)	< 0.1250	0.1250	0.5	SM 4110 B./ICS
Potasyum (K)* (mg/L)	< 1.0000	1.0000	12	TS EN ISO 14911/ICS
Selenyum (Se)* (µg/L)	< 2.0000	2.0000	10	SM 3125 B./ICP MS
Sodyum (Na)* (mg/L)	< 2.5000	2.5000	200	TS EN ISO 14911/ICS
Sülfat (SO_4^{2-})* (mg/L)	2.5297	2.5000	250	SM 4110 B./ICS
Toplam Krom (Cr)* (µg/L)	4.3991	2.0000	50	SM 3125 B./ICP MS
Toplam Sertlik* (FS°)	16.8699			SM 2340 C. /ICS

Değerlendirme: Sonuçlar yukarıda çalışılan parametreler yönünden "17 Şubat 2005 Tarih ve 25730 Sayılı Resmi Gazetede yayımlanan İnsani Tüketim Amaçlı Sular Hakkındaki Yönetmelik " göre Uygundur.

Açıklamalar:

Numune Müşteri Tarafından steril kapta Alınıp Getirilmiş ve Beyan Ettikleri Gibi Analize Alınmıştır.

Bu rapor KOSKİ Genel Müdürlüğü Su Kalite Kontrol Laboratuvarının yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.
Koyu renkte yazılmış olan analiz sonuçları ilgili mevzuat limitleri dışındadır.
Bu rapordaki sonuçlar ve görüşler yukarıda belirtilen numune ve deneyi yapılan numune için geçerlidir.
Özel istek numune analiz raporları adli ve idari işlemlerde ve reklam amaçlı kullanılamaz.
Karar kuralının açık tanımı: Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, eğer mevzuatta geçerli bir karar kuralı var ise bu karar kuralı uygulanır, mevzuatta geçerli bir karar kuralı yok ise ölçüm belirsizliği değeri 'Basit Karar Kuralına' göre değerlendirilir ve sonuçlar güven düzeyi ve ölçüm belirsizliği eklenip çıkarılmadan olduğu gibi raporlanır.
Numune dış müşteri tarafından sağlandığı durumlarda, numune alındığı şekliyle deneye tabi tutulacaktır. Numunenin alınışından Laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenilen grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi alana aittir ve ölçüm belirsizliğinde numune almadan kaynaklı belirsizlik katkısı dahil edilmeyecektir. Genişletilmiş ölçüm belirsizlikleri(k:2 %95 güven aralığında) müşteri talebi, yasal mevzuat gereksinimi veya sınır değere uygunluğu etkilediği durumlarda belirtilir.
Doğrulama linki bulunmayan ve linkten doğrulanamayan veya ıslak imzalı olmayan analiz raporları geçersizdir.
(*) işaretli parametreler TÜRKAK tarafından akredite edilmiştir.
TKEDY:Tüketicilerce Kabul Edilebilir ve Herhangi Bir Anormal Değişim Yok.
Deney laboratuvarı olarak faaliyet gösteren KOSKİ Su Kalite Kontrol Laboratuvarı TÜRKAK'tan AB0543T ile TS EN ISO/IEC 17025:2017 standardına göre akredite edilmiştir. (KOSKİ Water Quality Control Laboratory accredited by TÜRKAK under registration number AB0543T for as TS EN ISO/IEC 17025:2017 Testing 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 (TURKAK) is a signatory to the European cooperation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of testing certificates.)

Selma KOYUNCU AKAY
Laboratuvar Şefi
Kimyager

ONAY
21/05/2025

ANNEX-D ANALYSIS REPORT

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T | AB-0168-T | LR.23.1940 | 06-23

DENEY RAPORU / TEST REPORT

Müşteri Adı / Adresi Client Name / Address	ENCON Çevre Danışmanlık LTD.ŞTİ. / Reşit Galip Cad. No:120 G.O.P. / ANKARA
Teklif Numarası *Proposal Number*	LT23-0123_Rev01
Rapor Tarihi / Sayfa Sayısı Report Date / Number of Pages	06.06.2023 / 2
Numune Kayıt No Sample Record Number	NUM.23.1940
Numuneyi Alan Kurum / Kuruluş Sampler Institution / Company	ENCON Laboratuvarı A.Ş.
Numune Alınan Yer Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA (Koordinat No: 423414/4136080)
Numune Türü / Numune İşareti Sample Type / Sample Sign	Yeraltı Suyu / Akkise
Numunenin Alınış Şekli *ve Amacı* *Way and Aim the Sampling*	Anlık
Numuneyi Alan Person Conducted Sampling	Serhad İNCEDERE
Numune Alma Standardı *Sampling Standard*	TS ISO 5667-11
Numune Alma / Kabul Tarihi Sampling Date / Date of Samples Received	25.05.2023 / 26.05.2023
Numunenin Teslim Koşulları Delivery Conditions of the Sample	Mühürsüz. Plastik. Steril ve Cam Şişe
Numune Alımında Çevre Şartları Environmental Conditions During Sampling	Açık
Açıklamalar Remarks	Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
Deneyin Yapıldığı Tarih Date of Test	26.05.2023 / 05.06.2023

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TURKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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.

Yayımlandığı Tarih Date	Raporu Hazırlayan Person in charge of report	Onaylayan/ Approval Tarih/ Date
	Dildar SÜSLÜ Laboratuvar Sorumlusu	Hüseyin TEKİN Laboratuvar Müdürü
	e-imza ile imzalanmıştır	**e-imza ile imzalanmıştır**
06.06.2023		**06.06.2023**

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir / (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Ankara Halk Sağlığı Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at 'Ankara Halk Sagligi Laboratory' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz./** https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No	İlk Yayın Tarihi / First Release Date	Revizyon No / Tarihi Revision No / Date	Sayfa No Page No
ENC.P.14.F.67.A	04.05.2007	24 / 10.01.2023	1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK
Test
TS EN ISO/IEC 17025
AB-0168-T
AB-0168-T
LR.23.1940
06-23

DENEY RAPORU / TEST REPORT

Parametre Parameter	Birim Unit	Analiz Sonucu Test Result	Analiz Metodu Method of Analysis
Amonyum	mg/L	<0.026	SM 4500-NH_3 B.F
Amonyum Azotu	mg/L	<0.02	SM 4500-NH_3 B.F
Askıda Katı Madde	mg/L	<2.5	SM 2540 C
Biyolojik Oksijen İhtiyacı	mg/L	<3.0	SM 5210 B
Bulanıklık	NTU	<0.2	SM 2130 B
Çözünmüş Oksijen	mg/L	8.90	SM 4500 O G
Escherichia coli*	kob/100 mL	0	SM 9222 H
Fekal Koliform*	kob/100 mL	0	SM 9222 D
İletkenlik	µS/cm-1	479.00	SM 2510 B
Kimyasal Oksijen İhtiyacı	mg/L	<5.0	SM 5220 B
Nitrat Azotu	mg/L	1.05	SM 4110 B
Nitrit Azotu	mg/L	<0.005	SM 4500-NO_2^- B
pH	-	7.89	SM 4500-H^+ B
Sıcaklık	°C	17.40	SM 2550 B
Toplam Azot	mg/L	1.71	SM 4500-Norg B.SM 4500-NO_2^- B. SM 4500-Norg B
Toplam Çözünmüş Madde	mg/L	305.00	SM 2540 C
Toplam Fosfor	mg/L	<0.010	SM 4500-P B.E
Toplam Kjeldahl Azotu	mg/L	0.65	SM 4500-Norg B
Toplam Koliform*	kob/100 mL	0	SM 9221 B
Tuzluluk	‰	0.24	SM 2520 B
Yağ ve Gres	mg/L	<10.0	SM 5520 B

Su numunesi TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. atıksu numunesi TS ISO 5667-10. deniz suyu numunesi TS ISO 5667-9. çamur numunesi TS EN ISO 5667-13. katı atık numunesi TS 12090. toprak numunesi TS 9923 ve sediment numunesi TS ISO 5667-12 standartlarına gore alınmaktadır.
ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir. firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
Water Samples are sampled according to the standards of TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. whereas wastewater. sea water. sludge. solid. soil and sediment samples are sampled according to the standard of TS ISO 5667-10. TS ISO 5667-9. TS EN ISO 5667-13. TS 12090. TS 9923 and TS ISO 5667-12. respectively.
For the samples not taken by the ENCON laboratory Inc.. uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer. our company waives the consequences arising from this information.

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (') işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Ankara Halk Sağlığı Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at 'Ankara Halk Sagligi Laboratory' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No	İlk Yayın Tarihi / First Release Date	Revizyon No / Tarihi Revision No / Date	Sayfa No Page No
ENC.P.14.F.67.A	04.05.2007	24 / 10.01.2023	2/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T

LR.23.1937

06-23

DENEY RAPORU / TEST REPORT

Müşteri Adı / Adresi Client Name / Address	ENCON Çevre Danışmanlık LTD.ŞTİ. / Reşit Galip Cad. No:120 G.O.P. / ANKARA
Teklif Numarası *Proposal Number*	LT23-0123_Rev01
Rapor Tarihi / Sayfa Sayısı Report Date / Number of Pages	06.06.2023 / 2
Numune Kayıt No Sample Record Number	NUM.23.1937
Numuneyi Alan Kurum / Kuruluş Sampler Institution / Company	ENCON Laboratuvarı A.Ş.
Numune Alınan Yer Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA (Koordinat No: 424169/4123576)
Numune Türü / Numune İşareti Sample Type / Sample Sign	Yeraltı Suyu / Ahırlı
Numunenin Alınış Şekli *ve Amacı* *Way and Aim the Sampling*	Anlık
Numuneyi Alan Person Conducted Sampling	Serhad İNCEDERE
Numune Alma Standardı *Sampling Standard*	TS ISO 5667-11
Numune Alma / Kabul Tarihi Sampling Date / Date of Samples Received	25.05.2023 / 26.05.2023
Numunenin Teslim Koşulları Delivery Conditions of the Sample	Mühürsüz. Plastik. Steril ve Cam Şişe
Numune Alımında Çevre Şartları Environmental Conditions During Sampling	Açık
Açıklamalar Remarks	Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
Deneyin Yapıldığı Tarih Date of Test	26.05.2023 / 05.06.2023

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TURKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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.

Yayımlandığı Tarih **Date**	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval** **Tarih**/ Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır** **06.06.2023**

Açıklamalar/Remarks:

-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……. tarafından yapılmıştır. / (**) Parameters with "**" are conducted at '……..' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz./** https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No	İlk Yayın Tarihi / First Release Date	Revizyon No / Tarihi Revision No / Date	Sayfa No Page No
ENC.P.14.F.67.A	04.05.2007	24 / 10.01.2023	1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T

LR.23.1937

06-23

DENEY RAPORU / TEST REPORT

Parametre Parameter	Birim Unit	Analiz Sonucu Test Result	Analiz Metodu Method of Analysis
Amonyum	mg/L	<0.026	SM 4500-NH_3 B.F
Amonyum Azotu	mg/L	<0.02	SM 4500-NH_3 B.F
Askıda Katı Madde	mg/L	5.00	SM 2540 C
Biyolojik Oksijen İhtiyacı	mg/L	<3.0	SM 5210 B
Bulanıklık	NTU	2.07	SM 2130 B
Çözünmüş Oksijen	mg/L	8.40	SM 4500 O G
Escherichia coli*	kob/100 mL	0	SM 9222 H
Fekal Koliform*	kob/100 mL	0	SM 9222 D
İletkenlik	µS/cm-1	620.00	SM 2510 B
Kimyasal Oksijen İhtiyacı	mg/L	<5.0	SM 5220 B
Nitrat Azotu	mg/L	0.68	SM 4110 B
Nitrit Azotu	mg/L	<0.005	SM 4500-NO_2^- B
pH	-	7.56	SM 4500-H^+ B
Sıcaklık	°C	15.70	SM 2550 B
Toplam Azot	mg/L	1.05	SM 4500-Norg B.SM 4500-NO_2^- B. SM 4500-Norg B
Toplam Çözünmüş Madde	mg/L	405.00	SM 2540 C
Toplam Fosfor	mg/L	<0.010	SM 4500-P B.E
Toplam Kjeldahl Azotu	mg/L	<0.5	SM 4500-Norg B
Toplam Koliform*	kob/100 mL	13	SM 9221 B
Tuzluluk	‰	0.32	SM 2520 B
Yağ ve Gres	mg/L	<10.0	SM 5520 B

Su numunesi TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. atıksu numunesi TS ISO 5667-10. deniz suyu numunesi TS ISO 5667-9. çamur numunesi TS EN ISO 5667-13. katı atık numunesi TS 12090. toprak numunesi TS 9923 ve sediment numunesi TS ISO 5667-12 standartlarına gore alınmaktadır.
ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir. firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
Water Samples are sampled according to the standards of TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. whereas wastewater. sea water. sludge. solid. soil and sediment samples are sampled according to the standard of TS ISO 5667-10. TS ISO 5667-9. TS EN ISO 5667-13. TS 12090. TS 9923 and TS ISO 5667-12. respectively.
For the samples not taken by the ENCON laboratory Inc.. uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer. our company waives the consequences arising from this information.

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (') işaretli parametreler akredite olmayan parametrelerdir./ (') Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……. tarafından yapılmıştır. / (**) Parameters with "**" are conducted at '…… ..' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz./** https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No	İlk Yayın Tarihi / First Release Date	Revizyon No / Tarihi Revision No / Date	Sayfa No Page No
ENC.P.14.F.67.A	04.05.2007	24 / 10.01.2023	2/2

encon

TÜRKAK
Test
TS EN ISO/IEC 17025
AB-0168-T

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

AB-0168-T
LR.23.1938
06-23

DENEY RAPORU / TEST REPORT

Müşteri Adı / Adresi Client Name / Address	ENCON Çevre Danışmanlık LTD.ŞTİ. / Reşit Galip Cad. No:120 G.O.P. / ANKARA
Teklif Numarası *Proposal Number*	LT23-0123_Rev01
Rapor Tarihi / Sayfa Sayısı Report Date / Number of Pages	06.06.2023 / 2
Numune Kayıt No Sample Record Number	NUM.23.1938
Numuneyi Alan Kurum / Kuruluş Sampler Institution / Company	ENCON Laboratuvarı A.Ş.
Numune Alınan Yer Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA (Koordinat No: 424169/4123576)
Numune Türü / Numune İşareti Sample Type / Sample Sign	Yeraltı Suyu / Aliçerçi
Numunenin Alınış Şekli *ve Amacı* *Way and Aim the Sampling*	Anlık
Numuneyi Alan Person Conducted Sampling	Serhad İNCEDERE
Numune Alma Standardı *Sampling Standard*	TS ISO 5667-11
Numune Alma / Kabul Tarihi Sampling Date / Date of Samples Received	25.05.2023 / 26.05.2023
Numunenin Teslim Koşulları Delivery Conditions of the Sample	Mühürsüz. Plastik. Steril ve Cam Şişe
Numune Alımında Çevre Şartları Environmental Conditions During Sampling	Açık
Açıklamalar Remarks	Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
Deneyin Yapıldığı Tarih Date of Test	26.05.2023 / 05.06.2023

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TURKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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.

Yayımlandığı Tarih **Date**	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval** **Tarih**/ Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır** **06.06.2023**

Açıklamalar/Remarks:

-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (') işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ..... tarafından yapılmıştır. / (**) Parameters with "**" are conducted at '.. .....' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No	**İlk Yayın Tarihi / First Release Date**	**Revizyon No / Tarihi Revision No / Date**	**Sayfa No Page No**
ENC.P.14.F.67.A	04.05.2007	24 / 10.01.2023	1/2

SÜRDÜRÜLEBİLİR ŞEHİRLER
TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK TÜRKİYE'NİN YAPICI GÜCÜ
THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T | AB-0168-T | LR.23.1938 | 06-23

DENEY RAPORU / TEST REPORT

Parametre Parameter	Birim Unit	Analiz Sonucu Test Result	Analiz Metodu Method of Analysis
Amonyum	mg/L	<0.026	SM 4500-NH_3 B.F
Amonyum Azotu	mg/L	<0.02	SM 4500-NH_3 B.F
Askıda Katı Madde	mg/L	3.00	SM 2540 C
Biyolojik Oksijen İhtiyacı	mg/L	<3.0	SM 5210 B
Bulanıklık	NTU	0.60	SM 2130 B
Çözünmüş Oksijen	mg/L	9.40	SM 4500 O G
Escherichia coli*	kob/100 mL	0	SM 9222 H
Fekal Koliform*	kob/100 mL	0	SM 9222 D
İletkenlik	µS/cm-1	497.00	SM 2510 B
Kimyasal Oksijen İhtiyacı	mg/L	<5.0	SM 5220 B
Nitrat Azotu	mg/L	2.49	SM 4110 B
Nitrit Azotu	mg/L	<0.005	SM 4500-NO_2^- B
pH	-	7.77	SM 4500-H^+ B
Sıcaklık	°C	15.90	SM 2550 B
Toplam Azot	mg/L	3.31	SM 4500-Norg B.SM 4500-NO_2^- B. SM 4500-Norg B
Toplam Çözünmüş Madde	mg/L	281.00	SM 2540 C
Toplam Fosfor	mg/L	<0.010	SM 4500-P B.E
Toplam Kjeldahl Azotu	mg/L	0.82	SM 4500-Norg B
Toplam Koliform*	kob/100 mL	5	SM 9221 B
Tuzluluk	‰	0.25	SM 2520 B
Yağ ve Gres	mg/L	<10.0	SM 5520 B

Su numunesi TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. atıksu numunesi TS ISO 5667-10. deniz suyu numunesi TS ISO 5667-9. çamur numunesi TS EN ISO 5667-13. katı atık numunesi TS 12090. toprak numunesi TS 9923 ve sediment numunesi TS ISO 5667-12 standartlarına gore alınmaktadır.
ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir. firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
Water Samples are sampled according to the standards of TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. whereas wastewater. sea water. sludge. solid. soil and sediment samples are sampled according to the standard of TS ISO 5667-10. TS ISO 5667-9. TS EN ISO 5667-13. TS 12090. TS 9923 and TS ISO 5667-12. respectively.
For the samples not taken by the ENCON laboratory Inc.. uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer. our company waives the consequences arising from this information.

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (') işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip …… tarafından yapılmıştır. / (**) Parameters with "**" are conducted at '.. ……..' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No	İlk Yayın Tarihi / First Release Date	Revizyon No / Tarihi Revision No / Date	Sayfa No Page No
ENC.P.14.F.67.A	04.05.2007	24 / 10.01.2023	2/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK
Test
TS EN ISO/IEC 17025
AB-0168-T
AB-0168-T
LR.23.1939
06-23

DENEY RAPORU / TEST REPORT

Müşteri Adı / Adresi Client Name / Address	ENCON Çevre Danışmanlık LTD.ŞTİ. / Reşit Galip Cad. No:120 G.O.P. / ANKARA
Teklif Numarası *Proposal Number*	LT23-0123_Rev01
Rapor Tarihi / Sayfa Sayısı Report Date / Number of Pages	06.06.2023 / 2
Numune Kayıt No Sample Record Number	NUM.23.1939
Numuneyi Alan Kurum / Kuruluş Sampler Institution / Company	ENCON Laboratuvarı A.Ş.
Numune Alınan Yer Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA (Koordinat No: 424788/4125428)
Numune Türü / Numune İşareti Sample Type / Sample Sign	Yüzey Suyu / Büyüköz
Numunenin Alınış Şekli *ve Amacı* *Way and Aim the Sampling*	Anlık
Numuneyi Alan Person Conducted Sampling	Serhad İNCEDERE
Numune Alma Standardı *Sampling Standard*	TS ISO 5667-11
Numune Alma / Kabul Tarihi Sampling Date / Date of Samples Received	25.05.2023 / 26.05.2023
Numunenin Teslim Koşulları Delivery Conditions of the Sample	Mühürsüz. Plastik. Steril ve Cam Şişe
Numune Alımında Çevre Şartları Environmental Conditions During Sampling	Açık
Açıklamalar Remarks	Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
Deneyin Yapıldığı Tarih Date of Test	26.05.2023 / 05.06.2023

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TURKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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.

Yayımlandığı Tarih Date	Raporu Hazırlayan Person in charge of report	Onaylayan/ Approval
	Dildar SÜSLÜ	**Tarih**/ Date
	Laboratuvar Sorumlusu	Hüseyin TEKİN
		Laboratuvar Müdürü
	e-imza ile imzalanmıştır	**e-imza ile imzalanmıştır**
06.06.2023		**06.06.2023**

Açıklamalar/Remarks:

-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (') işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip …… tarafından yapılmıştır. / (**) Parameters with "**" are conducted at '…… …' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz./** https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No	İlk Yayın Tarihi / First Release Date	Revizyon No / Tarihi Revision No / Date	Sayfa No Page No
ENC.P.14.F.67.A	04.05.2007	24 / 10.01.2023	1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T | AB-0168-T | LR.23.1939 | 06-23

DENEY RAPORU / TEST REPORT

Parametre Parameter	Birim Unit	Analiz Sonucu Test Result	Analiz Metodu Method of Analysis
Amonyum	mg/L	<0.026	SM 4500-NH_3 B.F
Amonyum Azotu	mg/L	<0.02	SM 4500-NH_3 B.F
Askıda Katı Madde	mg/L	7.00	SM 2540 C
BOİ	mg/L	<3.0	SM 5210 B
Bulanıklık	NTU	4.96	SM 2130 B
Çözünmüş Oksijen	mg/L	10.70	SM 4500 O G
Escherichia coli*	kob/100 mL	0	SM 9222 H
Fekal Koliform*	kob/100 mL	0	SM 9222 D
İletkenlik	µS/cm-1	549.00	SM 2510 B
Kimyasal Oksijen İhtiyacı	mg/L	6.45	SM 5220 B
Nitrate Azotu	mg/L	0.30	SM 4110 B
Nitrit Azotu	mg/L	<0.005	SM 4500-NO_2^- B
pH	-	7.89	SM 4500-H^+ B
Sıcaklık	°C	15.20	SM 2550 B
Toplam Azot	mg/L	1.43	SM 4500-Norg B.SM 4500-NO_2^- B. SM 4500-Norg B
Toplam Çözünmüş Madde	mg/L	342.00	SM 2540 C
Toplam Fosfor	mg/L	0.01	SM 4500-P B.E
Toplam Kjeldahl Azotu	mg/L	1.13	SM 4500-Norg B
Toplam Koliform*	kob/100 mL	195	SM 9221 B
Tuzluluk	‰	0.28	SM 2520 B
Yağ ve Gres	mg/L	<10.0	SM 5520 B

Su numunesi TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. atıksu numunesi TS ISO 5667-10. deniz suyu numunesi TS ISO 5667-9. çamur numunesi TS EN ISO 5667-13. katı atık numunesi TS 12090. toprak numunesi TS 9923 ve sediment numunesi TS ISO 5667-12 standartlarına gore alınmaktadır.
ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir. firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
Water Samples are sampled according to the standards of TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. whereas wastewater. sea water. sludge. solid. soil and sediment samples are sampled according to the standard of TS ISO 5667-10. TS ISO 5667-9. TS EN ISO 5667-13. TS 12090. TS 9923 and TS ISO 5667-12. respectively.
For the samples not taken by the ENCON laboratory Inc.. uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer. our company waives the consequences arising from this information.

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (') işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip …… tarafından yapılmıştır. / (**) Parameters with "**" are conducted at '…… …' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No	İlk Yayın Tarihi / First Release Date	Revizyon No / Tarihi Revision No / Date	Sayfa No Page No
ENC.P.14.F.67.A	04.05.2007	24 / 10.01.2023	2/2

encon

TÜRKAK
Test
TS EN ISO/IEC 17025
AB-0168-T

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

AB-0168-T
LR.23.1941
06-23

DENEY RAPORU / TEST REPORT

Müşteri Adı / Adresi Client Name / Address	ENCON Çevre Danışmanlık LTD.ŞTİ. / Reşit Galip Cad. No:120 G.O.P. / ANKARA
Teklif Numarası *Proposal Number*	LT23-0123_Rev01
Rapor Tarihi / Sayfa Sayısı Report Date / Number of Pages	06.06.2023 / 2
Numune Kayıt No Sample Record Number	NUM.23.1941
Numuneyi Alan Kurum / Kuruluş Sampler Institution / Company	ENCON Laboratuvarı A.Ş.
Numune Alınan Yer Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA (Koordinat No: 418291/4139869)
Numune Türü / Numune İşareti Sample Type / Sample Sign	Toprak / Başkaören
Numunenin Alınış Şekli *ve Amacı* *Way and Aim the Sampling*	Anlık
Numuneyi Alan Person Conducted Sampling	Serhad İNCEDERE
Numune Alma Standardı *Sampling Standard*	TS ISO 5667-11
Numune Alma / Kabul Tarihi Sampling Date / Date of Samples Received	24.05.2023 / 26.05.2023
Numunenin Teslim Koşulları Delivery Conditions of the Sample	Mühürsüz. Plastik. Steril ve Cam Şişe
Numune Alımında Çevre Şartları Environmental Conditions During Sampling	Yağışlı
Açıklamalar Remarks	Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
Deneyin Yapıldığı Tarih Date of Test	24.05.2023 / 05.06.2023

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TURKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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.

Yayımlandığı Tarih **Date**	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval** **Tarih**/ Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır** **06.06.2023**

Açıklamalar/Remarks:

-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (') işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Artek Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at 'Artek Laboratory' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No	**İlk Yayın Tarihi / First Release Date**	**Revizyon No / Tarihi Revision No / Date**	**Sayfa No Page No**
ENC.P.14.F.67.A	04.05.2007	24 / 10.01.2023	1/2

SÜRDÜRÜLEBİLİR ŞEHİRLER
TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK TÜRKİYE'NİN YAPICI GÜCÜ
THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK
Test
TS EN ISO/IEC 17025
AB-0168-T
AB-0168-T
LR.23.1941
06-23

DENEY RAPORU / TEST REPORT

Parametre Parameter	Birim Unit	Analiz Sonucu Test Result	Analiz Metodu Method of Analysis
Antimon (Sb)	mg/kg	<1.0	EPA 3051 A. EPA 6010 D
Arsenik (As)	mg/kg	<1.0	EPA 3051 A. EPA 6010 D
Bakır (Cu)	mg/kg	10.74	EPA 3051 A. EPA 6010 D
Bor (B)	mg/kg	18.27	EPA 3051 A. EPA 6010 D
Civa (Hg)	mg/kg	<0.1	EPA 3051 A. EPA 6010 D
Çinko (Zn)	mg/kg	39.96	EPA 3051 A. EPA 6010 D
Gümüş (Ag)	mg/kg	<0.5	EPA 3051 A. EPA 6010 D
Kadmiyum (Cd)	mg/kg	<0.5	EPA 3051 A. EPA 6010 D
Kalay (Sn)	mg/kg	<1.0	EPA 3051 A. EPA 6010 D
Krom (Cr)	mg/kg	19.75	EPA 3051 A. EPA 6010 D
Kurşun (Pb)	mg/kg	10.84	EPA 3051 A. EPA 6010 D
Nikel (Ni)	mg/kg	<0.5	EPA 3051 A. EPA 6010 D
TOX **	mg/kg	97.4	EN 16166
TPH	mg/kg	<25.0	TS ISO 14507. TS EN 14039

Su numunesi TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. atıksu numunesi TS ISO 5667-10. deniz suyu numunesi TS ISO 5667-9. çamur numunesi TS EN ISO 5667-13. katı atık numunesi TS 12090. toprak numunesi TS 9923 ve sediment numunesi TS ISO 5667-12 standartlarına gore alınmaktadır.
ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir. firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
Water Samples are sampled according to the standards of TS EN ISO 5667-6. TS ISO 5667-4. TS ISO 5667-11. whereas wastewater. sea water. sludge. solid. soil and sediment samples are sampled according to the standard of TS ISO 5667-10. TS ISO 5667-9. TS EN ISO 5667-13. TS 12090. TS 9923 and TS ISO 5667-12. respectively.
For the samples not taken by the ENCON laboratory Inc.. uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer. our company waives the consequences arising from this information.

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (') işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Artek Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at 'Artek Laboratory' which is holding ISO-17025 accreditation.
-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

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No / Document No ENC.P.14.F.67.A	İlk Yayın Tarihi / First Release Date 04.05.2007	Revizyon No / Tarihi Revision No / Date 24 / 10.01.2023	Sayfa No Page No 2/2

SÜRDÜRÜLEBİLİR ŞEHİRLER
TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK TÜRKİYE'NİN YAPICI GÜCÜ
THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

TÜRKAK
Test
TS EN ISO/IEC 17025
AB-0012-T

AB-0012-T
IST.TP.23.0530007
05-23

ARTEK MÜHENDİSLİK
Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.
ÇEVRE LABORATUVARI

Mehmet Akif Mah. Elalmış Cad. Tarık Buğra Sok. No:15 - Ümraniye/Türkiye
Tel: (Pbx) Faks: +90 216 499 28 68
www.artekcevre.com.tr

ANALİZ RAPORU

Rapor No / Tarihi	IST.TP.23.0530007 / 31/05/2023	**Rapor Onay Tarihi**	2023.05.31 16:27:41+03'00'
Müşterinin Adı	ENCON LABORATUVAR A.Ş.		
Müşterinin Adresi	Reşit Galip Caddesi No:120 GOP/ANKARA Ankara/Türkiye		
Numune No	IST.TP.23.0530007	**Numunenin Alındığı Yer**	BAŞKARAÖREN T2
Müşteri Numune No	NUM23-1941	**Numunenin Alınma Tarihi - Saati**	24/05/2023 00:00:00 24/05/2023 00:00:00
Numune Türü	TOPRAK		
Numuneyi Alan	ENCON	**Numuneye Uygulanan İşlemler**	Soğuk Zincir
Numunenin Alınma Şekli	Anlık	**Numunenin Kabul Tarihi-Saati**	30/05/2023 - 14:59:22
Numunenin Getirilişi	Kargo		
Numune Miktarı / Ambalajı	200 gr Plastik Kap	**Analiz Başlangıç / Bitiş**	30/05/2023 31/05/2023
		Sayfa Sayısı	2

Metot Numarası	Metot Adı - Tarih
TS EN ISO 16166	Determination of Adsorbable Organically Bound Halogens (AOX)- (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. 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. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır.

ARTEK MÜHENDİSLİK
Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.
ÇEVRE LABORATUVARI

AB-0012-T
IST.TP.23.0530007
05-23

ANALİZ RAPORU

Firma Adı	ENCON LABORATUVAR A.Ş.
Rapor No / Tarihi	IST.TP.23.0530007 / 31/05/2023

Analiz Parametreleri	Analiz Metodu	Birim	Analiz Sonucu
Toplam Organik Halojenler (TOX) (*)	TS EN ISO 16166	mg/Kg	97,4

* İşaretli parametreler Bakanlık kapsamı dışında, TÜRKAK kapsamında raporlanmıştır.

Açıklamalar : Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.

Sorumlu İmzalar :

Cansu TİTİZ
Numune Kabul ve Raporlama Birim Şefi
Elektronik olarak imzalanmıştır.

Burak ÇINARLI
Laboratuvar Müdürü
Elektronik olarak imzalanmıştır.

2023.05.31 16:24:56+03'00'

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. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz. Elektronik imzalı raporlar 5070 sayılı Elektronik İmza Kanunu' na göre elektronik imza ile imzalanmıştır.

Sayfa (2 / 2)

FORM NO:FR.510.01-02
YAYIN TARİHİ:14.02.2013

REV.NO: 5
REV.TAR.: 06.09.2022

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T
LR.23.1945
06-23

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi / Client Address	Reşit Galip Cad. No:120 G.O.P. / ANKARA		
Teklif Numarası / Proposal Number	LT23-0123_Rev01		
Rapor Tarihi / Numarası Report Date / No	06.06.2023 / LR.23.1945	**Numune Türü / Sample Type**	PM 2.5
Numune Kayıt Numarası / Sample Record No	NUM.23.1945	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Ahırlı	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Ölçümü Yapan Kişi / Person Conducted Sampling	Serhad İNCEDERE		
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	**Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat Date/Time the Final Filter Arrives at Laboratory**	26.05.2023 17:00
Boş Filtrenin Tartıldığı Tarih Date of Empty Filter Weighing	19.05.2023	**Dolu Filtrenin Tartıldığı Tarih Date of Final Filter Weighing**	29.05.2023 18:00

Açıklamalar/Remarks:
Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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 (TURKAK) 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.

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval Tarih/** Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır 06.06.2023**

Açıklamalar/Remarks: Heyelan sebebiyle alana ulaşılamadığı için 4 günlük ölçüm yapılmıştır.
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in thiş report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……..Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ……., which is holding ISO-17025 accreditation.
-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
https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	10/10.01.2023	1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T
LR.23.1945
06-23

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	Cihaz Adı / Device Name		Marka / Model Brand / Model		Seri No / Serial No	
	GC Model Tartım Cihazı		Sartorius/GC		18805603	
	PM10 Örnekleme Cihazı		Leckel		LVS3-2796105	
	Sıcaklık ve Nem Veri Toplayıcı Cihazı		CEM (DT-172 Model)		9115542	
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	**Filtrenin Boş Ağırlığı (g) Empty Weight of Filter**	**Filtrenin Dolu Ağırlığı (g) Final Weight of Filter**	**Filtrenin Takılma Tarihi Date of Filter Set**	**Filtrenin Çıkarılma Tarihi Date of Filter Take Off**	**Geçen Hava Miktarı (m^3) Amount of Air Passes (m^3)**	**PM2.5 Sonuç /Result ($\mu g/m^3$)**
422161/4121685	0.12855	0.12895	25.05.2023	26.05.2023	52.15	7.67

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Heyelan sebebiyle alana ulaşılamadığı için 4 günlük ölçüm yapılmıştır.
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in thiş report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……..Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ……., which is holding ISO-17025 accreditation.
-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
https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz./** https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	10/10.01.2023	2/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T
LR.23.1943
06-23

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi / Client Address	Reşit Galip Cad. No:120 G.O.P. / ANKARA		
Teklif Numarası / Proposal Number	LT23-0123_Rev01		
Rapor Tarihi / Numarası Report Date / No	06.06.2023 / LR.23.1943	**Numune Türü / Sample Type**	PM 10
Numune Kayıt Numarası / Sample Record No	NUM.23.1943	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Ahırlı	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Ölçümü Yapan Kişi / Person Conducted Sampling	Serhad İNCEDERE		
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	**Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat Date/Time the Final Filter Arrives at Laboratory**	26.05.2023 17:00
Boş Filtrenin Tartıldığı Tarih Date of Empty Filter Weighing	19.05.2023	**Dolu Filtrenin Tartıldığı Tarih Date of Final Filter Weighing**	29.05.2023 18:00

Açıklamalar/Remarks:
Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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 (TURKAK) 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.

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval Tarih/** Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır 06.06.2023**

Açıklamalar/Remarks: Heyelan sebebiyle alana ulaşılamadığı için 4 günlük ölçüm yapılmıştır.
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in thiş report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……..Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ……., which is holding ISO-17025 accreditation.
-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
https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	10/10.01.2023	1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T
LR.23.1943
06-23

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	Cihaz Adı / Device Name	Marka / Model Brand / Model	Seri No / Serial No
	GC Model Tartım Cihazı	Sartorius/GC	18805603
	PM10 Örnekleme Cihazı	BGI	02451
	Sıcaklık ve Nem Veri Toplayıcı Cihazı	CEM (DT-172 Model)	9115542

Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take Off	Geçen Hava Miktarı (m^3) Amount of Air Passes (m^3)	PM10 Sonuç /Result ($\mu g/m^3$)
422161/4121685	0.12768	0.12795	25.05.2023	26.05.2023	21.43	12.60

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Heyelan sebebiyle alana ulaşılamadığı için 4 günlük ölçüm yapılmıştır.
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in thiş report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……..Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ……., which is holding ISO-17025 accreditation.
-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
https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz./** https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	10/10.01.2023	2/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T
LR.23.1944
06-23

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi / Client Address	Reşit Galip Cad. No:120 G.O.P. / ANKARA		
Teklif Numarası / Proposal Number	LT23-0123_Rev01		
Rapor Tarihi / Numarası Report Date / No	06.06.2023 / LR.23.1944	**Numune Türü / Sample Type**	PM 2.5
Numune Kayıt Numarası / Sample Record No	NUM.23.1944	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Akkise	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Ölçümü Yapan Kişi / Person Conducted Sampling	Serhad İNCEDERE		
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	**Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat Date/Time the Final Filter Arrives at Laboratory**	26.05.2023 17:00
Boş Filtrenin Tartıldığı Tarih Date of Empty Filter Weighing	19.05.2023	**Dolu Filtrenin Tartıldığı Tarih Date of Final Filter Weighing**	29.05.2023 18:00

Açıklamalar/Remarks:
Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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 (TURKAK) 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.

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval Tarih/** Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır 06.06.2023**

Açıklamalar/Remarks: Heyelan sebebiyle alana ulaşılamadığı için 4 günlük ölçüm yapılmıştır.
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in thiş report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……..Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ……., which is holding ISO-17025 accreditation.
-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
https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	10/10.01.2023	1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T
LR.23.1944
06-23

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	Cihaz Adı / Device Name		Marka / Model Brand / Model		Seri No / Serial No	
	GC Model Tartım Cihazı		Sartorius/GC		18805603	
	PM10 Örnekleme Cihazı		Leckel		LVS3-2796105	
	Sıcaklık ve Nem Veri Toplayıcı Cihazı		CEM (DT-172 Model)		9115542	
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	**Filtrenin Boş Ağırlığı (g) Empty Weight of Filter**	**Filtrenin Dolu Ağırlığı (g) Final Weight of Filter**	**Filtrenin Takılma Tarihi Date of Filter Set**	**Filtrenin Çıkarılma Tarihi Date of Filter Take Off**	**Geçen Hava Miktarı (m^3) Amount of Air Passes (m^3)**	**PM2.5 Sonuç /Result ($\mu g/m^3$)**
423148/4135643	0.13008	0.13015	24.05.2023	24.05.2023	45.28	<6.00

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Heyelan sebebiyle alana ulaşılamadığı için 4 günlük ölçüm yapılmıştır.
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in thiş report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……..Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ……., which is holding ISO-17025 accreditation.
-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
https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz./** https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	10/10.01.2023	2/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T | LR.23.1942 | 06-23

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi / Client Address	Reşit Galip Cad. No:120 G.O.P. / ANKARA		
Teklif Numarası / Proposal Number	LT23-0123_Rev01		
Rapor Tarihi / Numarası Report Date / No	06.06.2023 / LR.23.1942	**Numune Türü / Sample Type**	PM 10
Numune Kayıt Numarası / Sample Record No	NUM.23.1942	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Akkise	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Ölçümü Yapan Kişi / Person Conducted Sampling	Serhad İNCEDERE		
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	**Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat Date/Time the Final Filter Arrives at Laboratory**	26.05.2023 17:00
Boş Filtrenin Tartıldığı Tarih Date of Empty Filter Weighing	19.05.2023	**Dolu Filtrenin Tartıldığı Tarih Date of Final Filter Weighing**	29.05.2023 18:00

Açıklamalar/Remarks:
Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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 (TURKAK) 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.

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report	**Onaylayan/ Approval Tarih/ Date**
	Dildar SÜSLÜ	Hüseyin TEKİN
	Laboratuvar Sorumlusu	Laboratuvar Müdürü
	e-imza ile imzalanmıştır	**e-imza ile imzalanmıştır**
06.06.2023		**06.06.2023**

Açıklamalar/Remarks: Heyelan sebebiyle alana ulaşılamadığı için 4 günlük ölçüm yapılmıştır.
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in thiş report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……..Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ……., which is holding ISO-17025 accreditation.
-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
https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	10/10.01.2023	1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T
LR.23.1942
06-23

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	Cihaz Adı / Device Name		Marka / Model Brand / Model		Seri No / Serial No	
	GC Model Tartım Cihazı		Sartorius/GC		18805603	
	PM10 Örnekleme Cihazı		BGI		02451	
	Sıcaklık ve Nem Veri Toplayıcı Cihazı		CEM (DT-172 Model)		9115542	
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	**Filtrenin Boş Ağırlığı (g) Empty Weight of Filter**	**Filtrenin Dolu Ağırlığı (g) Final Weight of Filter**	**Filtrenin Takılma Tarihi Date of Filter Set**	**Filtrenin Çıkarılma Tarihi Date of Filter Take Off**	**Geçen Hava Miktarı (m^3) Amount of Air Passes (m^3)**	**PM10 Sonuç /Result ($\mu g/m^3$)**
423148/4135643	0.12777	0.12795	24.05.2023	24.05.2023	18.29	9.84

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Heyelan sebebiyle alana ulaşılamadığı için 4 günlük ölçüm yapılmıştır.
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in thiş report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip ……..Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ……., which is holding ISO-17025 accreditation.
-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
https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz./** https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	10/10.01.2023	2/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi /Client Address	Reşit Galip Cad. No:120 G.O.P. / ANKARA		
Teklif Numarası / Proposal Number	LT23-0123_Rev01		
Rapor Tarihi / Numarası Report Date / No	06.06.2023 / LR.23.1947	**Numune Türü / Sample Type**	Gürültü
Numune Kayıt Numarası / Sample Record No	NUM.23.1947	**Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement**	TS ISO 1996-2
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	422161/4121685	**Ölçüm Tarihi / Sampling Date**	25-26/05/2023
Proje Adı / Cihaz Kurulum Noktasi Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Ahırlı	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Numune Kabul Tarihi Date of Samples Received	26.05.2023	**Örneklemeyi Yapan Personel Kurum /Kişi Person /Firm Conducted Sampling**	Serhad İNCEDERE

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval Tarih/** Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır 06.06.2023**

Açıklamalar/Remarks:			
			Sayfa No 1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	ÇEVRESEL GÜRÜLTÜNÜN DEĞERLENDİRİLMESİ VE YÖNETİMİ YÖNETMELİĞİ TABLO 5
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-19:00)	dBA	48.3	70.0
Eşdeğer Gürültü *L_{Eq} Akşam (19:00-23:00)	dBA	47.1	65.0
Eşdeğer Gürültü *L_{Eq} Gece (23:00-07:00)	dBA	47.1	60.0

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	IFC Tablo 1.7.1
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-22:00)	dBA	48.1	55.0
Eşdeğer Gürültü *L_{Eq} Gece (22:00-07:00)	dBA	47.1	45.0

Açıklamalar/Remarks:

Sayfa No 2/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi /Client Address	Reşit Galip Cad. No:120 G.O.P. / ANKARA		
Teklif Numarası / Proposal Number	LT23-0123_Rev01		
Rapor Tarihi / Numarası Report Date / No	06.06.2023 / LR.23.1947-1	**Numune Türü / Sample Type**	Gürültü
Numune Kayıt Numarası / Sample Record No	NUM.23.1947	**Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement**	TS ISO 1996-2
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	422161/4121685	**Ölçüm Tarihi / Sampling Date**	26-27/05/2023
Proje Adı / Cihaz Kurulum Noktasi Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Ahırlı	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Numune Kabul Tarihi Date of Samples Received	26.05.2023	**Örneklemeyi Yapan Personel Kurum /Kişi Person /Firm Conducted Sampling**	Serhad İNCEDERE

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval Tarih/** Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır 06.06.2023**

Açıklamalar/Remarks:

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	ÇEVRESEL GÜRÜLTÜNÜN DEĞERLENDİRİLMESİ VE YÖNETİMİ YÖNETMELİĞİ TABLO 5
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-19:00)	dBA	48.3	70.0
Eşdeğer Gürültü *L_{Eq} Akşam (19:00-23:00)	dBA	47.2	65.0
Eşdeğer Gürültü *L_{Eq} Gece (23:00-07:00)	dBA	47.3	60.0

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	IFC Tablo 1.7.1
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-22:00)	dBA	48.1	55.0
Eşdeğer Gürültü *L_{Eq} Gece (22:00-07:00)	dBA	47.3	45.0

Açıklamalar/Remarks:

Sayfa No 2/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi /Client Address	Reşit Galip Cad. No:120 G.O.P. / ANKARA		
Teklif Numarası / Proposal Number	LT23-0123_Rev01		
Rapor Tarihi / Numarası Report Date / No	06.06.2023 / LR.23.1946-1	**Numune Türü / Sample Type**	Gürültü
Numune Kayıt Numarası / Sample Record No	NUM.23.1946	**Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement**	TS ISO 1996-2
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	423148/4135643	**Ölçüm Tarihi / Sampling Date**	25-26/05/2023
Proje Adı / Cihaz Kurulum Noktasi Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Akkise	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Numune Kabul Tarihi Date of Samples Received	26.05.2023	**Örneklemeyi Yapan Personel Kurum /Kişi Person /Firm Conducted Sampling**	Serhad İNCEDERE

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval Tarih/** Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır 06.06.2023**

Açıklamalar/Remarks:			
			Sayfa No 1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	ÇEVRESEL GÜRÜLTÜNÜN DEĞERLENDİRİLMESİ VE YÖNETİMİ YÖNETMELİĞİ TABLO 5
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-19:00)	dBA	48.2	70.0
Eşdeğer Gürültü *L_{Eq} Akşam (19:00-23:00)	dBA	45.3	65.0
Eşdeğer Gürültü *L_{Eq} Gece (23:00-07:00)	dBA	45.0	60.0

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	IFC Tablo 1.7.1
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-22:00)	dBA	47.7	55.0
Eşdeğer Gürültü *L_{Eq} Gece (22:00-07:00)	dBA	45.3	45.0

Açıklamalar/Remarks:

Sayfa No 2/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi /Client Address	Reşit Galip Cad. No:120 G.O.P. / ANKARA		
Teklif Numarası / Proposal Number	LT23-0123_Rev01		
Rapor Tarihi / Numarası Report Date / No	06.06.2023 / LR.23.1946	**Numune Türü / Sample Type**	Gürültü
Numune Kayıt Numarası / Sample Record No	NUM.23.1946	**Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement**	TS ISO 1996-2
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	423148/4135643	**Ölçüm Tarihi / Sampling Date**	24-25/05/2023
Proje Adı / Cihaz Kurulum Noktasi Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Akkise	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Numune Kabul Tarihi Date of Samples Received	26.05.2023	**Örneklemeyi Yapan Personel Kurum /Kişi Person /Firm Conducted Sampling**	Serhad İNCEDERE

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval Tarih/** Date Hüseyin TEKİN Laboratuvar Müdürü
06.06.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır 06.06.2023**

Açıklamalar/Remarks:			
			Sayfa No 1/2

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	ÇEVRESEL GÜRÜLTÜNÜN DEĞERLENDİRİLMESİ VE YÖNETİMİ YÖNETMELİĞİ TABLO 5
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-19:00)	dBA	56.4	70.0
Eşdeğer Gürültü *L_{Eq} Akşam (19:00-23:00)	dBA	43.3	65.0
Eşdeğer Gürültü *L_{Eq} Gece (23:00-07:00)	dBA	43.7	60.0

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	IFC Tablo 1.7.1
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-22:00)	dBA	55.5	55.0
Eşdeğer Gürültü *L_{Eq} Gece (22:00-07:00)	dBA	43.7	45.0

Açıklamalar/Remarks:

Sayfa No 2/2

ENCON LABORATUVARI A.Ş.
Mutlukent Mahallesi Uluırmak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T
LR.23.2297
08.23

ÇÖKEN TOZ RAPORU / SETTLED DUST REPORT

Müşteri Adı / Client Name	Encon Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi /Client Address	Prof. Dr. Ahmet Taner Kışlalı Mah. Bangabandhu Bulvarı Özçelik İmaj Merkezi No:94/39 Çankaya/ANKARA		
Teklif Numarası	LT22_0163_Rev03		
Rapor Tarihi / Numarası Report Date / No	03.08.2023 / LR.23.2297	**Numune Türü / Sample Type**	Çöken Toz
Numune Kayıt Numarası / Sample Record No	NUM.23.2297	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Ahırlı	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Numune Kabul Tarihi Date of Samples Received	22.06.2023	**Örneklemeyi Yapan Personel Kurum /Kişi Person /Firm Conducted Sampling**	Enes AKÇER

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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 (TURKAK) 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.

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval Tarih/** Date Hüseyin TEKİN Laboratuvar Müdürü
03.08.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır 03.08.2023**

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip .....Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ' ....., which is holding ISO-17025 accreditation.
-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.

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

LABORATUVAR SONUÇ RAPORU FORMU			
Doküman No	**İlk Yayın Tarihi**	**Revizyon No / Tarihi**	**Sayfa No**
ENC.P.14.F.67.C	29.07.2011	11/ 12.07.2023	1/2

SÜRDÜRÜLEBİLİR ŞEHİRLER
TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK TÜRKİYE'NİN YAPICI GÜCÜ
THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

ENCON LABORATUVARI A.Ş.
Mutlukent Mahallesi Uluırmak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T
LR.23.2297
08.23

ÇÖKEN TOZ RAPORU / SETTLED DUST REPORT

Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS 2342		
Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis.	**CİHAZ ADI / DEVICE NAME**	**MARKA / MODEL BRAND / MODEL**	**SERİ NO / SERIAL NO**
	Sıcaklık ve Nem Veri Toplayıcı Cihazı	CEM (DT-172 Model)	9115542
	Çöken Toz Cihazı		-

Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	Ölçüm Başlangıç Tarihi / Sampling Start Date	Ölçüm Bitiş Tarihi / Sampling End Date	Sonuç / Result
423148/4135643	24.05.2023	22.06.2023	70.04

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir. firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
For the samples not taken by the ENCON laboratory Inc.. uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer. our company waives the consequences arising from this information.

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip .....Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ' ....., which is holding ISO-17025 accreditation.
-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.

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

LABORATUVAR SONUÇ RAPORU FORMU			
Doküman No	**İlk Yayın Tarihi**	**Revizyon No / Tarihi**	**Sayfa No**
ENC.P.14.F.67.C	29.07.2011	11/ 12.07.2023	2/2

SÜRDÜRÜLEBİLİR ŞEHİRLER
TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK TÜRKİYE'NİN YAPICI GÜCÜ
THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

ENCON LABORATUVARI A.Ş.
Mutlukent Mahallesi Uluırmak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T
LR.23.2296
08.23

ÇÖKEN TOZ RAPORU / SETTLED DUST REPORT

Müşteri Adı / Client Name	Encon Çevre Danışmanlık LTD.ŞTİ.		
Müşteri Adresi /Client Address	Prof. Dr. Ahmet Taner Kışlalı Mah. Bangabandhu Bulvarı Özçelik İmaj Merkezi No:94/39 Çankaya/ANKARA		
Teklif Numarası	LT22_0163_Rev03		
Rapor Tarihi / Numarası Report Date / No	03.08.2023 / LR.23.2296	**Numune Türü / Sample Type**	Çöken Toz
Numune Kayıt Numarası / Sample Record No	NUM.23.2296	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	Konya Suğla Su Temini Projesi / Suğla/KONYA Ahırlı	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Açık
Numune Kabul Tarihi Date of Samples Received	22.06.2023	**Örneklemeyi Yapan Personel Kurum /Kişi Person /Firm Conducted Sampling**	Enes AKÇER

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a 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 (TURKAK) 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.

Yayımlandığı Tarih Date	**Raporu Hazırlayan** Person in charge of report Dildar SÜSLÜ Laboratuvar Sorumlusu	**Onaylayan/ Approval Tarih/** Date Hüseyin TEKİN Laboratuvar Müdürü
03.08.2023	**e-imza ile imzalanmıştır**	**e-imza ile imzalanmıştır 03.08.2023**

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip .....Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ' ....., which is holding ISO-17025 accreditation.
-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.

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

LABORATUVAR SONUÇ RAPORU FORMU			
Doküman No	**İlk Yayın Tarihi**	**Revizyon No / Tarihi**	**Sayfa No**
ENC.P.14.F.67.C	29.07.2011	11/ 12.07.2023	1/2

SÜRDÜRÜLEBİLİR ŞEHİRLER
TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK TÜRKİYE'NİN YAPICI GÜCÜ
THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

ENCON LABORATUVARI A.Ş.
Mutlukent Mahallesi Ulurmak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlaboratory.com

TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T
LR.23.2296
08.23

ÇÖKEN TOZ RAPORU / SETTLED DUST REPORT

Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS 2342		
Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis.	**CİHAZ ADI / DEVICE NAME**	**MARKA / MODEL BRAND / MODEL**	**SERİ NO / SERIAL NO**
	Sıcaklık ve Nem Veri Toplayıcı Cihazı	CEM (DT-172 Model)	9115542
	Çöken Toz Cihazı		-

Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	Ölçüm Başlangıç Tarihi / Sampling Start Date	Ölçüm Bitiş Tarihi / Sampling End Date	Sonuç / Result
422161/4121685	24.05.2023	22.06.2023	35.66

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir. firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
For the samples not taken by the ENCON laboratory Inc.. uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer. our company waives the consequences arising from this information.

Açıklamalar/Remarks:
-İmzasız Deney Raporları geçersizdir./ Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir./ (*) Parameters with "*" are those not accredited.
-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip .....Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at ' ....., which is holding ISO-17025 accreditation.
-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.

https://encon.enlab.io/rapor-dogrula **bağlantı adresinden raporlarınızı doğrulayabilirsiniz.**/ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.

LABORATUVAR SONUÇ RAPORU FORMU			
Doküman No	**İlk Yayın Tarihi**	**Revizyon No / Tarihi**	**Sayfa No**
ENC.P.14.F.67.C	29.07.2011	11/ 12.07.2023	2/2

SÜRDÜRÜLEBİLİR ŞEHİRLER
TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK TÜRKİYE'NİN YAPICI GÜCÜ
THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

ANNEX-E CHANCE FIND PROCEDURE

1. Introduction

The Municipality is responsible for avoiding or mitigating 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

The Municipality and all the contractors are responsible for complying with the procedure during the project construction activities. In this regard, the Municipality would be providing training to their and the 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:

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 established.
- The contractor contacts the Municipality and the relevant Governmental Archaeological Museum in the Province is informed immediately.
- The Chance Find location is secured through flagging or no-entry signs, etc.
- The Chance Find should not be moved, removed or further disturbed.

Step 2 – Recording

- The Chance Find Form Part A is filled in by the contractor and sent to the Municipality 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.
- The contractor informs the Municipality.
- The contractor records the decision on Part B of the Chance Find Form and sends a copy to the Municipality.
- A copy of the Chance Find Form Part B is kept for records.
- No further actions are required.
- This step closes out the Chance Find procedure.
- Construction activities may resume.

Step 4.B – Significance of the site

- The Museum declares that the site/finding is considered to be of significance.
- The Museum decides on further actions and informs the contractor and the contractor informs the Municipality.
- The contractor records the decision on Part B of the Chance Find form.
- Proceed to Step 5.

Step 5 – Site investigation

Step 5.A - After field investigation the Museum declares the site/finding has minor significance

- The contractor informs the Municipality.
- The contractor records the decision on Part C of the Chance Find Form and sends a copy to the Municipality
- A copy of the Chance Find Form Part B is kept for records.
- No further actions are required.
- This step closes out the Chance Find procedure.
- Construction activities may resume.

Step 5.B - After field investigation the Museum declares the site/finding has moderate significance

- Further studies such as test pit/salvage excavations or remote sensing investigation are to be completed.
- The Museum provides instructions, and/or supervision for the studies.
- The contractor informs the Municipality.
- The Municipality provides an archaeological work team of qualified archaeologist and workers to work under the supervision of the Museum.
- After the excavation is completed, the 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 Municipality.

- The contractor records the decision on Part C of the Chance Find Form and sends a copy to the Municipality.
- A copy of the Chance Find Form Part B is kept for records.
- No further actions are required.
- This step closes out the Chance Find procedure.
- Construction activities may resume.

Step 5.C - After field investigation the Museum declares the site/finding has major significance

- Salvage excavation is to be completed.
- The site is to be treated according to Law on the Protection of Cultural and Natural Assets Law (No. 2863 dated 21.07.1983).
- The Museum provides instructions, and/or supervision for test pit/salvage archaeological excavation.
- The contractor informs the Municipality.
- The Municipality 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 the Municipality.
- The site will be officially recorded and protected according to Turkish regulations.
- The contractor records the decision on Part C of the Chance Find Form and sends a copy to the Municipality.
- A copy of the Chance Find Form Part B is kept for records.
- No further actions are 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-4.1). 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-4.2).

Annex 4.1 Chance Find Report Form

PART A			
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? ☐ Yes ☐ No			
Was a buffer zone created to protect the Chance Find? ☐ Yes ☐ No			
NOTIFICATION			
Municipality contacted ☐ Yes ☐ No			
CHANCE FIND DETAILS			
GPS coordinates		Photo record ☐ Yes ☐ No If not, explain why: Other records ☐ Yes ☐ 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.):			

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-F CODE OF CONDUCT

A minimum requirement for the Code of Conduct has been established taking into account the problems, impacts and mitigation measures identified in the following:

-

- Project reports e.g. ESIA/ESMP
- Any particular GBV/SEA requirements
- Consent/permit conditions (regulatory authority conditions attached to any permits or approvals for the project)
- Required standards including World Bank Group EHS Guidelines
- Relevant international conventions, standards or treaties, etc., national, legal and/or regulatory requirements and standards (where these represent higher standards than the WBG EHS Guidelines)
- Relevant standards e.g. Workers' Accommodation: Process and Standards (IFC and EBRD)
- Relevant sector standards e.g. workers' accommodation
- Grievance redress mechanisms.

In accordance with the contract, the Contractor is obliged to implement the measures covering the environmental and social risks related to the Construction Works, including sexual exploitation, abuse and harassment.

This Code of Conduct is also included in the solution measures for environmental and social risks related to Construction Works. This set of rules applies to all employees on the Construction Site and other locations where work is carried out. The Code of Conduct is also binding on the personnel of each subcontractor and each employee who assists in the performance of the works. All of the above-mentioned employees will be referred to as "Contractor's Personnel", and compliance with the Code of Conduct will be mandatory for all of them.

This Code of Conduct defines the required behavior expected from all Contractor's Personnel. Dangerous, unpleasant, harassment/abuse or violent behavior will never be allowed in our work environment. Everyone is free to openly share their thoughts and concerns without fear of retaliation.

The behaviors expected from the Contractor's Personnel are as follows:

- Performing their duties with due competence and care,
- Complying with this Code of Conduct and all applicable laws, regulations and other requirements, including protecting the health, safety and well-being of the local community (including vulnerable and disadvantaged groups), the Consultant's Experts, the Client's personnel, and the Contractor's personnel, including sub-contractors and day workers,
- Ensuring that the machinery, equipment and processes used by each employee in the work area are safe and do not pose a risk to health, using of necessary personal protective equipment, taking necessary precautions in the use of chemical, physical and biological substances, and following appropriate emergency application procedures,
- Reporting workstations that are considered unhealthy and unsafe, and staying away from areas where human life is considered to be at serious danger,
- Respecting other people and not discriminating against certain groups such as women, people with disabilities, migrant workers and children,
- Avoiding Sexual Harassment[10]
- Avoiding Sexual Abuse[11]
- Avoiding Sexual Exploitation[12]
- Protecting of children, ensuring their safety in Project Areas and prohibiting sexual activity or abuse, or otherwise unacceptable behavior towards them,

[10] *Any unwelcome sexual advances, request for sexual favors, and other verbal or physical conduct of a sexual nature.*
[11] *Actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions.*
[12] *Any actual or attempted abuse of a position of vulnerability, differential power or trust for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another.*

- Participating in relevant trainings on issues such as health and safety, Sexual Exploitation, Abuse and Sexual harassment related to the environmental and social aspects of the Convention,
- Respecting reasonable work instructions and ensuring protection and proper use of property,
- Complying with sanitation requirements,
- Avoiding conflicts of interest such that benefits, contracts, or employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection,
- Reporting a violation of this Code of Conduct,
- Non-retaliation against personnel who report violations of the Code.

Examples of Sexual Harassment

- One Contractor's Personnel making positive or negative comments about the appearance and sexual attractiveness of another Contractor Personnel.
- A Contractor's or Employer's Personnel contacting physically another Contractor's Personnel.
- A Contractor Personnel telling another Contractor's Personnel that they can get a salary increase or promotion if they send him/her nude photos.

Examples of Sexual Exploitation and Abuse

- A Contractor's Personnel telling a community member that he or she can get a job on the work site in exchange for sexual intercourse (e.g. kitchen and cleaning jobs).
- A Contractor's Personnel rapes or otherwise sexually assaults a member of the community.
- A Contractor's Personnel preventing access to the Site if the sexual desire of a person is not met.
- A Contractor's Personnel telling a person applying for a job under the Contract that they will only be given employment in exchange for sexual intercourse.

Violation of this Code of Conduct by the Contractor's Personnel may have serious consequences and may result in the termination of the contract and the transfer of the matter to the legal authorities.

ANNEX-G SAMPLE GRIEVANCE AND GRIEVANCE CLOSE-OUT FORMS

	KONYA METROPOLITAN MUNICIPALITY / GENERAL DIRECTORATE OF WATER AND SEWERAGE ADMINISTRATION
	Sugla Group Water Supply Project
	GRIEVANCE FORM

Person Filling out the Form:	Date and time:
Meeting Agenda:	Reference No:
1. INFORMATION ABOUT THE COMPLAINANT	
Name Surname:	**Means of Complaint:**
TR Identification number:	Phone / Toll Free Hotline ☐
Phone:	Face to Face Meeting ☐
Address:	Website / E-Mail ☐
E-Mail:	Other (Explain) ☐

Stakeholder Type				
Public Institution ☐	PAP ☐	Private Enterprise ☐	Professional Chamber ☐	NGO ☐
Interest Groups ☐	Industry Associations ☐	Labor Unions ☐	Media ☐	University ☐

2. DETAILED INFORMATION ON THE COMPLAINT	
Explanation of the complaint:	
Action requested by the complainant:	

Registrant Name Surname/ Signature

Complainant Name Surname / Signature

	KONYA METROPOLITAN MUNICIPALITY / GENERAL DIRECTORATE OF WATER AND SEWERAGE ADMINISTRATION **Sugla Group Water Supply Project**
	GRIEVANCE CLOSEOUT FORM

Reference No:	
1. IDENTIFICATION OF CORRECTIVE ACTION	
1	
2	
3	
4	
5	
Responsible Departments	
2. TERMINATION OF COMPLAINT	
This section will be filled and signed by the complainant in the event that the complaint specified in the "Grievance Register Form" is resolved.	

Grievance Closeout Date:

Name-Surname/Signature of the Person Closing Complaint:

:

...../……/…….

Name-Surname/Signature of Complainant

ANNEX-H SAMPLE CONSULTATION FORM

	KONYA METROPOLITAN MUNICIPALITY / GENERAL DIRECTORATE OF WATER AND SEWERAGE ADMINISTRATION **Sugla Group Water Supply Project** **CONSULTATION FORM**

Person Filling out the Form:				Date and time:	
Meeting Agenda:				Consultation Registration:	
1. CONSULTATION INFORMATION					
Interviewed Institution:				Communication Type	
Name-Surname of the Interviewee:				Phone / Hotline	☐
Phone:				Face to Face Meeting	☐
Address:				Website / E-mail	☐
E-Mail:				Other (Explain)	☐
Stakeholder Type					
Public Institution ☐	PAP ☐	Private Enterprise ☐	Professional Chamber ☐	NGO ☐	
Interest Groups ☐	Industry Associations ☐	Labor Unions ☐	Media ☐	University ☐	
2. CONSULTATION DETAILS					
Questions about the project:					
Project concerns/feedback:					
Responses to the views expressed above:					

Recorded by
Name-Last Name/Signature

Complainant
Name-Last Name/Signature