



NON-TECHNICAL SUMMARY

Lapseki Gold and Silver Mine Processing Project

by TÜMAD Madencilik San. ve Tic. AŞ

Address: Buğday Sokak No:9
Kavaklıdere – Ankara - Türkiye

Tel: +90.312.455.1600
Fax: +90.312.455.1601

info@TUMAD.com.tr

1 INTRODUCTION

1.1 ABOUT LAPSEKİ PROJECT

The Lapseki Gold and Silver Mine and Project (the Lapseki Project, or “the Project”) is planned to be established and operated within the administrative boundaries of the Şahinli and Kocabaşlar Villages of the Lapseki District in the Province of Çanakkale by TÜMAD Madencilik San. ve Tic. A.Ş. (TÜMAD).

Within the scope of the Project, gold and silver minerals will be obtained from 4 pits (namely the Karakovan, Karatepe, K-Zone and SBX Pits) which will be extracted via explosive mining methods. The produced ore will be subjected to enrichment by tank leaching and dore will be obtained as a final product.

The Project is seeking financing from International Finance Institutes (IFIs), including the European Bank for Reconstruction and Development (EBRD), and as a part of this is required to carry out an Environment and Social Impact Assessment (ESIA). The documents disclosed including this Non-Technical Summary (NTS) constitute the ESIA and related management plans and frameworks.

1.2 ABOUT TÜMAD

Nurol Holding operates with more than 40 companies, associations and subsidiaries in many sectors ranging from commerce to defence, construction to machinery and manufacturing, mining, tourism to finance. TÜMAD is one of the most important companies of Nurol Holding in the mining sector.

The strategy of TÜMAD Mining is to make advanced exploration over potential mining sites and to launch economically large scale mining projects, which will be carried out to international standards.

1.3 THE GOAL OF THIS DOCUMENT

This document is a non-technical summary (NTS) of the Environmental and Social Impact Assessment (ESIA) conducted for Project to the standards of international Lenders (European Bank of Reconstruction and Development). The NTS outlines the findings of the ESIA in a non-technical language, together with the mitigation measures proposed by TÜMAD for the management of the Projects environmental and social issues.

1.4 THE LOCATION OF LAPSEKİ PROJECT

The Lapseki Project Site is located 35 kilometers (km) away from the city center of Çanakkale and 7 km from the Lapseki town center. The settlements surrounding the Project Site are the Villages of Şahinli, Kocabaşlar, Yenice, Subaşı and Çamyurt. The settlements located closest to the Project’s impact area are the Villages of Şahinli and Kocabaşlar. The Project Site is located approximately 0.63 km from the Village of Şahinli village and 1.3 km from the Village of Kocabaşlar.

The access road to the mining site branches out from the Bursa-Çanakkale Highway, otherwise known as E.90.

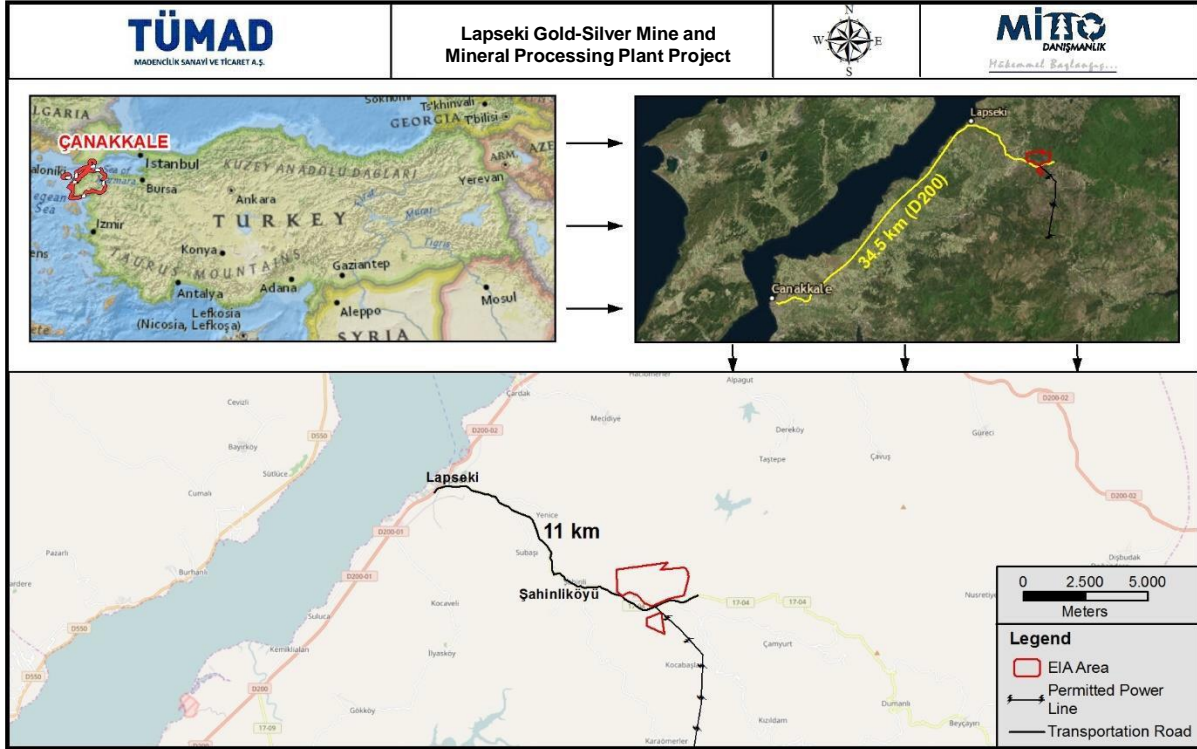


Figure 1 The Location of The Project Site

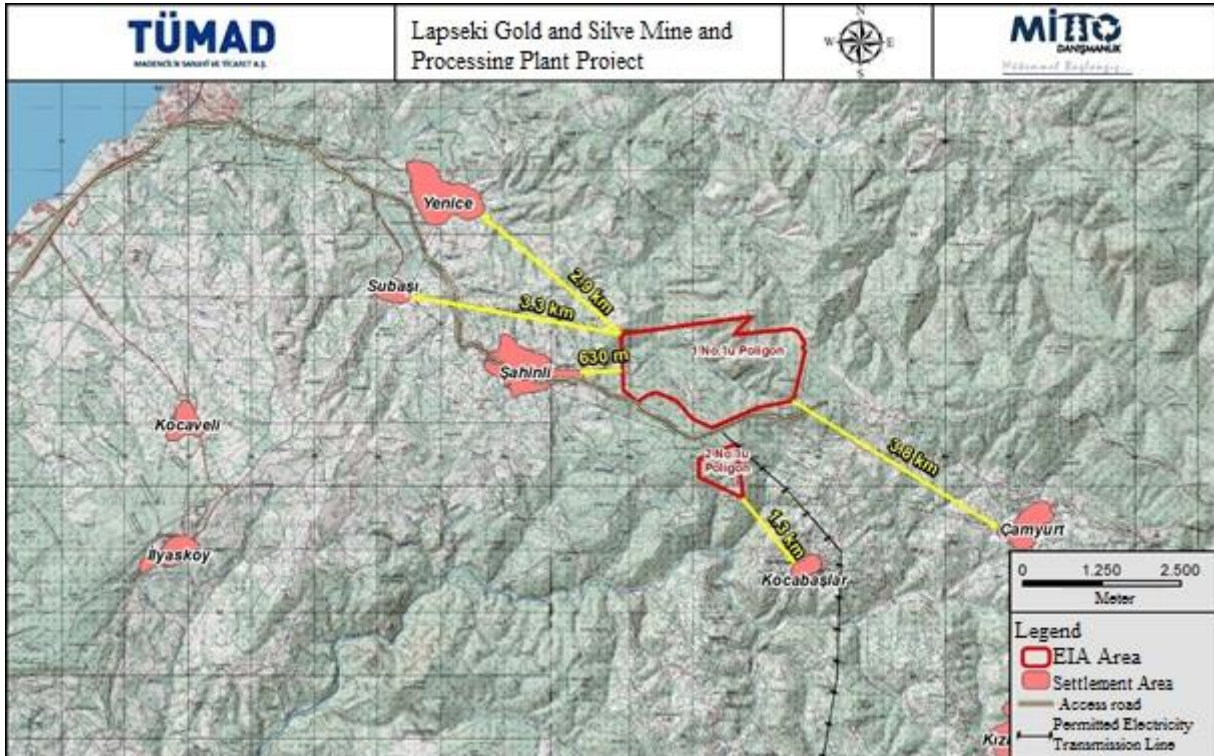


Figure 2 Settlements around Project Site

1.5 ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDIES ON THE PROJECT

Environmental Impact Assessment (EIA) Report has been prepared by MİTTO within the framework of Turkish Environmental Legislation in accordance with the Environmental Impact Assessment Regulation for the Lapseki Project, and in August 2015 EIA Positive Decision was received from the Ministry of Environment and Urbanization for construction and operation of the Lapseki Gold and Silver Mine and Processing Plant Project

In addition and as part of EIA, the following studies have been performed for the Project Study Area;

- Preliminary feasibility studies were prepared by AMDAD, Lycopodium and feasibility studies were completed by, BBA and Promer companies.
- Flora-fauna studies were followed by the flora expert Haşim ALTINÖZLÜ, fauna expert Prof. Dr. Aydın AKBULUT and fauna expert Prof. Dr. Şakir Önder ÖZKURT for 1 year (5 periods) in order to include the periods of fertilization, reproduction, migration and vegetation. Studies were approved by Hacettepe University and Ahi Evran University.
- In order to obtain better quality seeds of endemic species (4 species), seeds were collected by Expert Haşim ALTINÖZLÜ in the project site in August 2015 and submitted to the Directorate of Agricultural Research and Policy Directorate of Field Horticulture Central Research Institute (Seed and Gene Resources Research Centre). So that these species will not be affected from the planned activities
- Noise measurements were made by Frequency Environment Laboratories which is authorized by the Ministry of Environment and Urbanization at 4 points in total, 2 points at the nearest house in Şahinli village, and 2 points at the nearest house in Kocabaşlar village.
- Including agricultural land, plant sites and closest settlements, PM10 measurements at 3 points, and settled dust measurements at 6 points were performed in the Şahinli and Kocabaşlar villages, and background dust measurement was made by Disten firm, authorized by Ministry of Environment and Urbanization.
- Authorized by the Ministry of Environment and Urbanization within the scope of Soil Pollution and Contaminated Areas with Point Source, a total of 41 soil samples, 19 around the waste disposal area (Şahinli Village and Şahinli Agricultural Field), 7 around ore process facilities and quarries, 6 around the village of Kocabaşlar, and 9 from the agricultural fields in the vicinity of Kocabaşlar village, were taken by MİTTO. These samples were made into composites, and sampling studies were carried out.
- By MİTTO and David GLADWELL, studies on the determination of acid-rock characterization and management plans (Phreeqc, casing management plan) were conducted.
- In addition to the laboratory results, in order to approach the real conditions in the field, for the first time in Turkey, in-situ barrel test and kinetics tests were performed by taking samples and getting samples analysed for 4 periods.
- After hydrosensus studies by MİTTO; 19 underground, 5 overground, and 3 drinking water, a total of 27 water monitoring points have been determined and water monitoring studies have been continuing periodically for 15 periods. In the light of these studies, a Conceptual model, Groundwater Flow and Convection Modelling for hydrogeological system was created with the collaboration of MİTTO, Italy Camerino University and Yüzüncü Yıl University. The modelling results are evaluated, and periodic water monitoring studies performed by MİTTO continue.
- Design of the engineering works was performed by MİTTO (containment channel, derivation channel, aquifer, sedimentation, flood ponds) and were approved by DSİ 25th Regional Directorate.
- In scope of Visual Effect Assessment, Rehabilitation Plan was prepared by Msc. Architect Simten SÜTÜNÇ.
- Geotechnical studies (quarry fields, plant site, waste dumping and DWS areas) were jointly carried out by Ore Mineral and Dokuz Eylül University Assistant Professor Bayram KAHRAMAN. 69 geotechnical drilling operations was carried out by Ore Mineral and MİTTO together.
- Seismic Hazard Analysis was performed by MİTTO. During the activity, the OBE value indicating the earthquake

accelerations with a 144-year rotation period was used in the stability of the quarry and waste areas where the wastes will be stored. In the stability of the DWS areas, the OBE was used for the operating period whereas the earthquake ground acceleration MDE with 475 year rotation period was used for the post-operation period.

- Cumulative impact assessment studies have been carried out by MİTTO for the purpose of elaborating the environmental and social impacts in detail.

After the completion of the EIA process; an Environmental and Social Due Diligence (ESDD) Study on the Project against European Bank for Reconstruction and Development Performance Requirements (PR) was completed in February 2017 and identified the following actions to be completed for the Project to have undergone a comprehensive Environmental and Social Impact Assessment (ESIA).;

- Definition of the Study Area and the Associated Facilities according to EBRD PR1.
- A Critical Habitat Assessment according to EBRD PR6 including the Study Area and Associated Facilities.
- Social Impact Assessment according to EBRD PRs over the Project Study Area and Associated Facilities.
- Assessment of impacts on water resources, identified as one of the major potential impacts of the Project on physical environment, according to EBRD PR 1 and 3 over the Project Study Area and Associated Facilities.
- Summary of significant Project impacts on physical environmental components, other than water, over the Project Study Area and Associated Facilities., with reference to EIA findings where relevant and the additional studies conducted after completion of the EIA, in accordance with EBRD PR1.
- Summary of significant Project impacts on biological components of the environment over the Project Study Area and Associated Facilities., with reference to EIA findings where relevant and the additional studies conducted after completion of the EIA, in accordance with PR1.
- Environmental and Social Management and Monitoring Plan
- Commitment Register including the commitments given in EIA and the commitments defined after the completion of the EIA study.
- Non-Technical Summary
- Preparation of the documentation on Management of Environmental and Social Impacts

A number of additional environmental and social studies that were undertaken to fill the information gaps to meet international good practice. These studies included:

- a socio-economic survey of the local area carried out by Mitto and SRM;
- additional biodiversity studies have been carried out by Mitto
- studies on the groundwater and geochemical modelling were undertaken by Mitto
- social impacts assessment of the Project
- critical habitat assessment and biological impact assessment of the Project.

Based on the existing documents (including the Turkish EIA) and additional studies, Golder produced the following documents:

- Social Impact Assessment
- Critical Habitat Assessment and Biological Impact Assessment over the Project Study Area and associated facilities.
- Stakeholder Engagements Plan
- Environmental and Social Action Plan
- Non-Technical Summary
- Commitments Register

The environmental and social impact assessment is supported by the TÜMAD Environmental and Social Management System. As part of its Environmental and Social Management System, TÜMAD has developed the following Management Plans and Frameworks:

- Environmental and Social Management System Framework
- Air Quality Management Plan
- Biodiversity Management plan
- Community Health, Safety and Security Plan
- Livelihood Restoration Framework
- Community Development Framework
- Cultural Heritage Management Plan
- Contactor Management Plan
- Cyanide Management Plan
- Emergency Action Plan
- Explosives and Hazardous Materials Management Plan
- HR Training Plan
- Labour Management Plan
- Labour Force Management Plan
- Mine Closure and Reclamation Plan
- Noise and Vibration Management Plan
- OHS Training Plan
- Spill Clean Up Plan
- Stakeholder Engagement Plan
- Local Procurement Management Plan
- Traffic Management Plan
- Health and Safety Management Plan
- Waste Management Plan

1.6 STANDARDS TO BE APPLIED IN THE PROJECT

TÜMAD commits to adhere to the provisions of Turkish Legislation applicable to the Project. These requirements include (but are not limited to) the Environment Law, Mining Law, Occupational Health and Safety Law, Labour Law and the Environmental Impact Assessment Regulations during the life time of the Project.

The Project will also comply with the Environmental and Social Performance Requirements of the European Bank for Reconstruction and Development (EBRD). These requirements are more stringent than those of national and European Union environmental and social standards.

The SIP Disclosure Package (EIA and the additional studies performed by Golder and SRM), Management Plans and this non-technical summary were released by TÜMAD on the 29th September 2017 and are available for public review and comment for 60 days (until 27 November 2017):

- on the TÜMAD website: www.TUMAD.com.tr
- on EBRD's website: <http://www.ebrd.com/esia/html>

- at the Nurol Holdings office in İstanbul (Büyükdere Caddesi No:255 Kat: 19 Maslak /İSTANBUL)
- at the TÜMAD office in Ankara (TÜMAD Madencilik A.Ş. General Directorate, Buğday Sokak No:9 Kavaklıdere Çankaya ANKARA)
- at the TÜMAD office in Lapseki (TÜMAD Madencilik A.Ş. Lapseki Gold Mine Operation, Beyçayır Yolu 12.km No:210 Şahinli /Lapseki /ÇANAKKALE)
- at the office of the Lapseki Governorship (Cumhuriyet Mah. Zübeyde Hanım Caddesi No:13 Lapseki / ÇANAKKALE)
- at the office of the Lapseki Municipality (Gazi Süleymanpaşa Mah. Çanakkale Cad. No:32 Lapseki/ ÇANAKKALE)
- at the office of the Lapseki Çanakkale Governorship (Cevatpaşa Mahallesi,, Kayserili Ahmet Paşa Caddesi, No:26, Hükümet Konağı, Çanakkale)
- at the EBRD Resident Office (Eskişehir Yolu, Armada İş Merkezi, No:6 Kat:4, Söğütözü, 06520 Ankara)

Copies of this non-technical summary are also provided in the Şahinli and Kocabaşlar village tea houses and village mukhtar offices. They will also be made available in places like schools, clinics and other centres of community interaction so that all sections of the community including women and youth are also able to have access.

TÜMAD welcomes comments and observations on the ESIA, and will endeavour to provide responses to all queries and comments received during the 60-day ESIA Disclosure period.

TÜMAD will hold disclosure meetings, open to all attendees, at the office of the Lapseki Municipality and in settlements around the project site. Details will be announced in appropriate local media and networks so that as wide a group as possible can be made aware of the meetings

2 THE PROJECT

2.1 HISTORY OF THE PROJECT AREA

The Turkish Mining Exploration and Research Directorate started mineral exploration activities in the region in the early 90s. In 1998 TÜPRAG also commenced separate exploration activities. Later, Chesser Resources engaged in the area. Chesser Resources was renamed as Batı Anadolu Madencilik (Western Anatolia Mining Co) in 2012 and in the year of 2015 TÜMAD purchased Batı Anadolu Madencilik (Western Anatolia Mining Co).

2.2 GOLD AND SILVER RESERVE STATUS OF THE PROJECT AREA

During the feasibility phase of the Project, detailed studies were undertaken to determine the reserve volume of the Site. In the light of these studies; It is planned to open 4 pits within the scope of the Project. The proportions of gold and silver per tonne are 1.85 g and 1.86 g, respectively. It is planned to carry out production with a recovery rate of %94.91 for gold and %72.35 for silver. It is foreseen that over the entire operation period of the Lapseki Project that 7.15 Mt of ore, 60 Mt of waste rock and 8.2 Mt of filtered tailings (the residue of ore), will be produced in total.

2.3 DURATION OF THE PROJECT

The construction phase of the Lapseki Project has been at completion stage and the operation phase will start in October 2017. Economical life of the mine within this project is 10 years.

2.4 LICENSE INFORMATION

The Project Site is located within the mine license areas numbered 58380 and 58467, both of which have been assigned to TÜMAD by the General Directorate of Mining Affairs under the Ministry of Energy and Natural Resources.

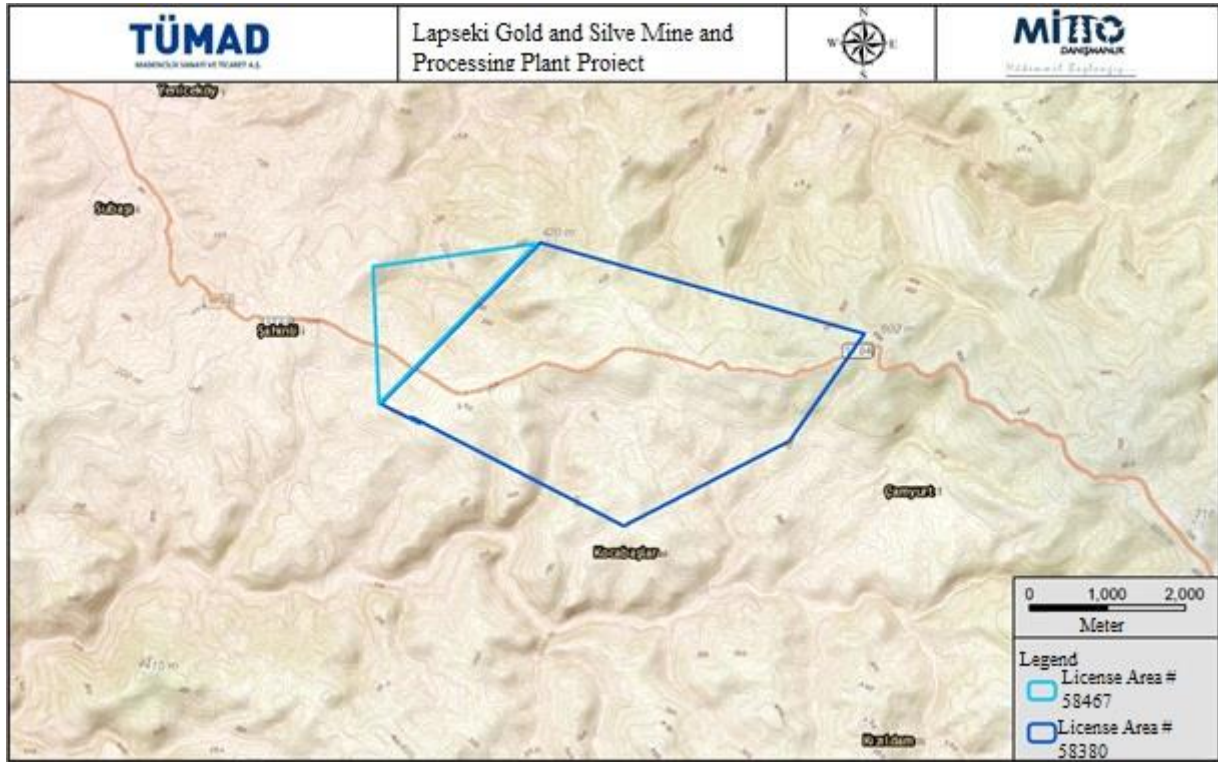


Figure 3 Map of License Areas

2.5 PROJECT AREA AND ASSOCIATED FACILITIES

The main project elements were located considering a set of objectives and constraints mainly including the location of the deposits, topography, terrain, slope and current land use. The project components are presented below in two groups

1) Project Facility Area (EIA Permitted Area) which includes:

- The Karakovan Pits,
- The Kestanelik Pit,
- The SBX Pit,
- The Tailings Dump Area,
- The Processing Plant Area,
- The Administrative Building,
- The Social Facilities Area,
- The Top Soil Storage Area, and
- The Dry Stack Tailings Storage Area.

2) The Supply and Logistics Corridor which includes:

- A power supply line,
- A water Supply line, and
- Roads.

2.6 LOCATION OF PROJECT UNITS

The project unit locations have been chosen considering the location of the ore, topography, areal requirements for waste storage, plant units and plant as well as soil storage areas, geological, hydrogeological characteristics of the region, predominant wind direction, location of settlements and local habitat condition in order to maintain a minimum influence on the environment. Locations of project units are shown in below figure.

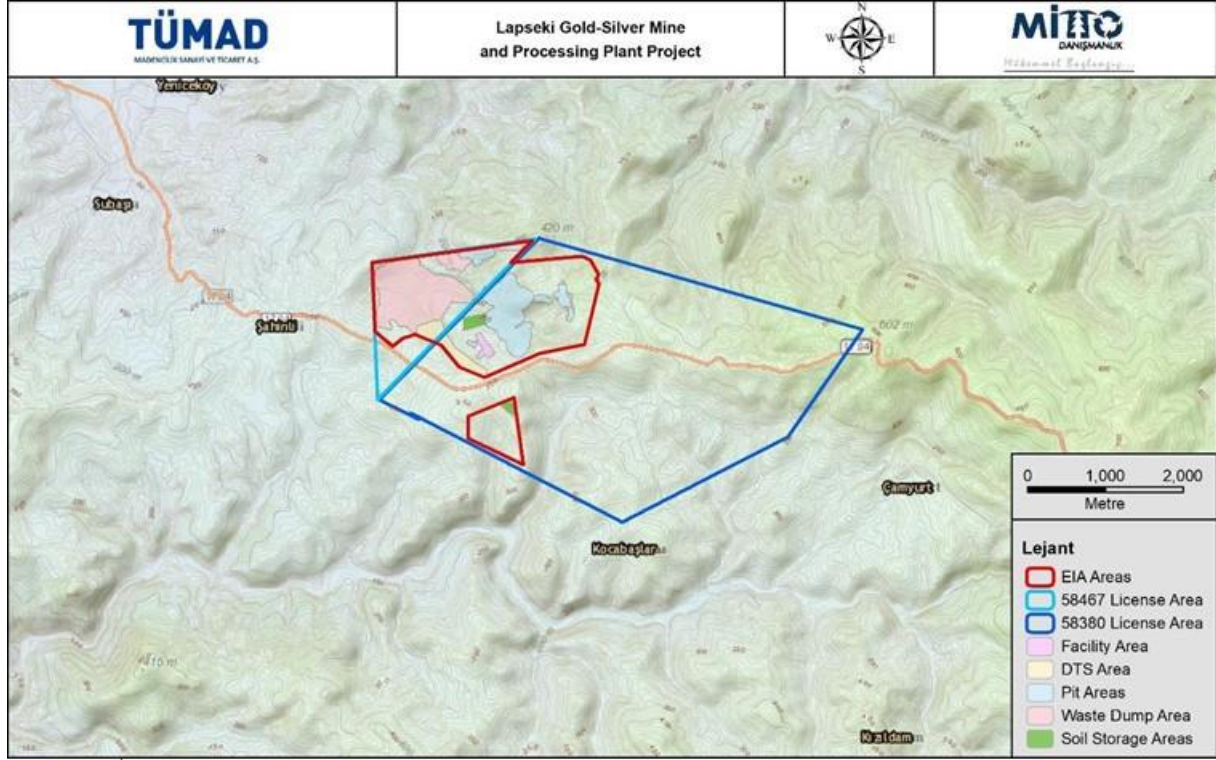


Figure 4 Project Unit Locations

2.7 ACCESS TO MINE SITE

Access to the mining area is obtained by reaching the centre of Lapseki district after following the route of E-90 Bursa-Çanakkale Highway for approximately 7.7 km, and following the route of Şahinli village about 3.8 km.

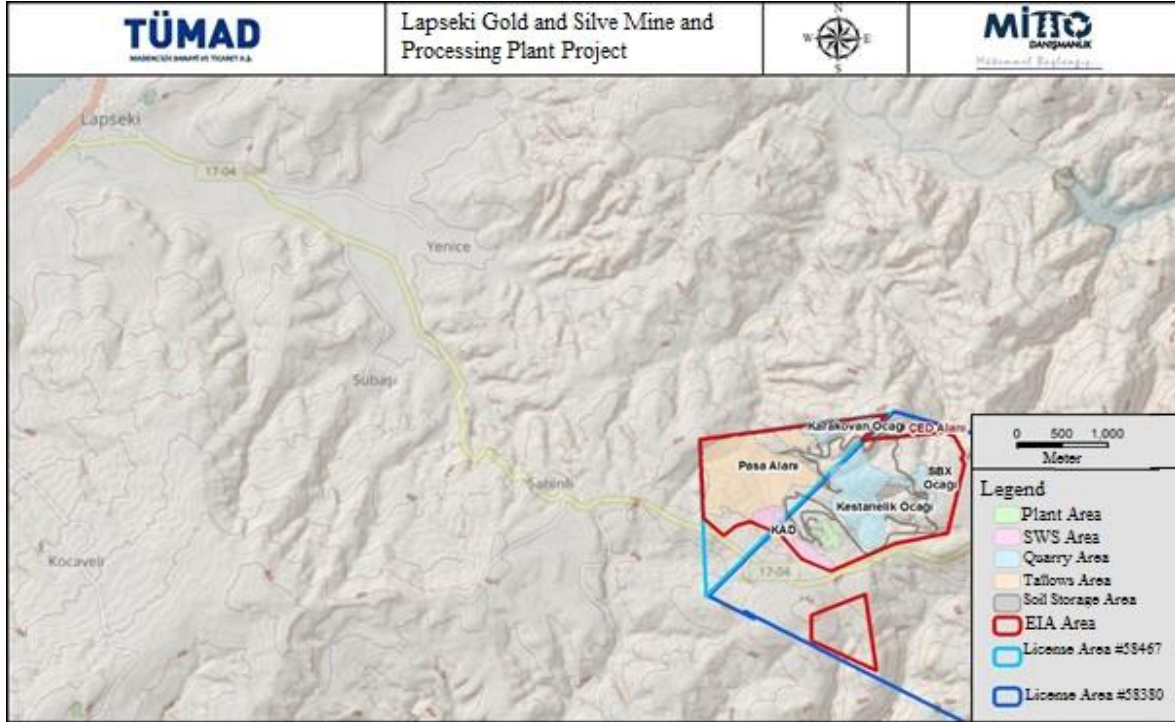


Figure 5 Project Access Road

2.8 ENERGY SUPPLY

The electricity demand of the Project Site is supplied from the 154 kV 1272 MCM Kuru WPP Transformer Station via a transmission lines to the TÜMAD Lapseki Transformer Station located at the Site. A connection agreement has been signed between TÜMAD and TEİAŞ in January 2016 to establish the overhead transmission lines (OTL) to transmit electricity between the 154 kV 1272 MCM Kuru WPP Transformer Station and the TÜMAD Lapseki Transformer Station as stated in the Environmental Impact Assessment for the transmission line, which was completed in August 2016. The construction of the line has been completed and been in service as of September, 2017. The length of the overhead lines is 9675 meters. 25 pylons have been installed along the line.

Concerning the 154 KV Kuru WPP TS-TÜMAD Lapseki TS Electricity Transmission Line, a Public Interest Decision was obtained with the decision dated 25.08.2016 and numbered 24-263. The land acquisition works are being managed by TEİAŞ.

Parcels upon which poles are erected and access were expropriated according to the land classification by TEİAŞ. The relevant parcels were determined and non-agricultural usage permits were obtained for these parcels.

For forestry area access areas, a protocol was signed between TEİAŞ and the Çanakkale Regional Directorate of Forestry and hence easement was established upon expropriation.

For agricultural lands, an application was filed with the Çanakkale Provincial Directorate of Food, Agriculture and Livestock. Upon on-site examinations carried out by Çanakkale Provincial Directorate of Food, Agriculture and Livestock, non-agricultural use of the lands in question has been permitted pursuant to the Law 5403 on Soil Protection and Land Use.

2.9 LAND USAGE AND REQUIRED PERMISSIONS FOR THE PROJECT

The EIA permit area for the mine site stretches over state-owned agricultural land and state-owned forestry lands and is 395 hectares. Actual land requirement for the mine operations area is 282.7 hectares.

The EIA report stipulates the details of the Land Use as in the below table.

Table 1 Land Use According to the EIA Report

Place	Land Use in the designated EIA Area			Land Acquisition Situation		Total	Ratio of the Land for Which Permit for Use has been Received to the EIA Land %
	Agricultural Land 2B (Decare)	Forest (Decare)	Total (Decare)	Forest Area Permit Received (Decare)	Agricultural Land (2B) Permit for Use (Decare)		
Şahinli	95	2,624	2,720	1,130	95	1,226	45%
Kocabaşlar	0	1,230	1,230	0	0	0	0%
Total	95	3,854	3,949	1,130	95	1,226	31%
%	2%	98%	100%	92%	8%	100%	

Within the scope of the “Soil Protection and Land Use Act no. 5403¹”, permit for non- agricultural use was received in May 2015 from the Çanakkale Provincial Directorate of Food, Agriculture and Livestock for 2B agricultural lands (95,2 decares).

Regarding the forest lands; forest permit was received from the General Directorate ² of Forestry in accordance with the “Forest Law No. 6831”, Article 16 for 1130 decares of forest area. These permits are obtained for a period of 10 years. Yet, forest areas where mining works will be completed will be rehabilitated and restored without waiting for expiry of permits. Forest permits will be received step by step with the advancement of production activities on site.

As of today, acquisition of 1,226 decares which corresponds to 31% of the land the EIA designated area has been completed which enables the Project to start operation. The land acquisition for another 840 decares will be performed after the completion of the first three years in operation.

In March 2016, Business and Operation Permits were obtained from the “Special Provincial Administration of Çanakkale” for the entire EIA area.

2.10 STATE FEES

State fees applicable to Lapseki Project are given in table below.

Table 2 State Fees

State Royalties (\$) USD	Price (\$) USD
Treasury Share	7.495.062,90
Special Provincial Administration Share	3.747.531,45
Providing Services to Villages Share	3.747.531,45
Forestry Share	455.203,38
General Total	15.445.329,17

¹<http://www.mevzuat.gov.tr/MevzuatMetin/1.5.5403-20080326.pdf> relevant law text

²<http://www.mevzuat.gov.tr/MevzuatMetin/1.3.6831.pdf> relevant law text

2.11 PROJECT SCHEDULE

The project basic design phase has been completed and mobilisation and site preparation activities have started. The key milestone for the implementation of the project and start of operation is presented in the table below.

Table 3 Project Schedule-Summary

TASK	START DATE	FINISH DATE
Basic Design	01.12.2016	30.01.2017
Detailed Engineering	01.12.2016	31.05.2017
Construction	01.12.2016	31.07.2017
Operation	15.10.2017	2027

2.12 PERSONNEL PLAN OF THE PROJECT

For the construction period, it was planned to employ 175 employees, and so far the project has employed 159 employees comprising both local and non-local workers.

During Operations Phase, the total requirement for the workforce including contractors will be **250**. According to the current plans, 57 white collar and 98 blue collar (60 unskilled/semi-skilled and 33 skilled) in total 155 will be employed by TÜMAD during operation phase. The figures can be changed based on the business needs of TÜMAD during operations. The number of staff that will be employed by Contractors will be 95.

Provision of trainings to the personnel is one of the priorities of TÜMAD for contributing to the local community. While the need of qualified staff is met as a result of these trainings, the workforce qualification level of the region will also be increased.

TÜMAD also aims to employ vulnerable and disadvantaged groups in its operations. TÜMAD aims to provide equal opportunities and gender equality in both mines. Currently there are 19 women workers employed at cleaning, accounting, catering, IMS and health and safety unit, community relations, reception, laboratory, administration.

3 EXECUTION OF THE PROJECT

3.1 WHAT IS THE AMOUNT OF WATER REQUIRED FOR THE PROJECT?

The water source of Şahinli and Kocabaşlar villages were located within the Kestanelik pit boundary and the area was defined as a protection area by the government. However, water quality of the springs is not suitable for drinking purposes mainly due to high arsenic concentrations. TÜMAD managed to locate new drinking water sources located at Laledağ and constructed the Şahinli water transmission pipeline to supply drinking water to the villagers. After TÜMAD provided the new drinking quality water source, drinking water protection area status was removed on February 2016 by the Governorship of Çanakkale, this way TÜMAD was able to enlarge the Kestanelik pit towards the south during the feasibility stage. In that respect the pit presented in the EIA report was located outside of the water protection area of the springs providing drinking water to the villages.

Following the construction of the Şahinli water transmission line and removal of the water protection area, TÜMAD signed a water supply agreement with the Lapseki Municipality in 2016. The process water requirements of the project will be supplied from the groundwater wells of the Lapseki Municipality through the aforementioned Lapseki water pipeline of 10.12 km from Lapseki to Şahinli, the construction of which has already been completed. The water supply agreement is for 40 l/s and the pipeline has the same capacity. Approximately 10 l/s will be used for the process water supply and 2 l/s will serve the Villages of Şahinli and Kocabaşlar. The remaining capacity will be used in case of increasing water demands in the future. Çanakkale Special Provincial Administration will be responsible for operation and maintenance of the water pipeline throughout the Project lifecycle and after mine is closed.

The Şahinli water pipeline will be maintained as an alternative water supply for Villages. In addition to provisions to obtain water requirements from this water pipeline, with the permit obtained from the Çanakkale 25th Regional

Directorate of State Hydraulic Affairs in October 2011, the use of groundwater wells was also provided in cases of emergency.

3.2 HOW WILL THE IMPACT ON WATER RESOURCES BE MANAGED

TÜMAD has conducted a detailed hydrogeological impact assessment including groundwater modelling and it has been determined that there will be no significant impact of drawdowns that will occur due to operation on the water resources of the region if the average climatic conditions will prevail.

TÜMAD has developed a comprehensive water monitoring programme over the construction, operation and 5 years after closure of the mine. The programme consists of the monitoring of;

- Surface Water Quality and Quantity
- Groundwater Quality
- Water Level Measurements in Observation Wells
- Depot, Spring and Fountain Water Quality and Quantity
- Discharge Water Quality
- ARD Leachate Quality
- Contact water/Sedimentation Pond Water Quality
- Sampling at the Biological Wastewater Treatment Plant

3.3 HOW ORE WILL BE EXTRACTED?

Exploded open pit mine operation method has been chosen within the scope of the project. Ore will be mined from the 4 open pits through a combination of blasting and excavation:

- The mining process requires the use of explosives to break apart the rock in the open pits.
- Following blasting, diesel hydraulic excavators will load normal highway haul trucks in the pits with ore for transport.
- The ore is taken to a stockpile area.
- Waste rock is loaded separately to the ore in the pits and taken to the waste rock dump

3.4 HOW WILL GOLD BE OBTAINED FROM ORE?

Ore will be processed by tank leach method after the crushing and screening to form dore. The process waste generated during this procedure will be dewatered and compacted by press filter and will be stored in the storage area after chemical treatment and detoxification.

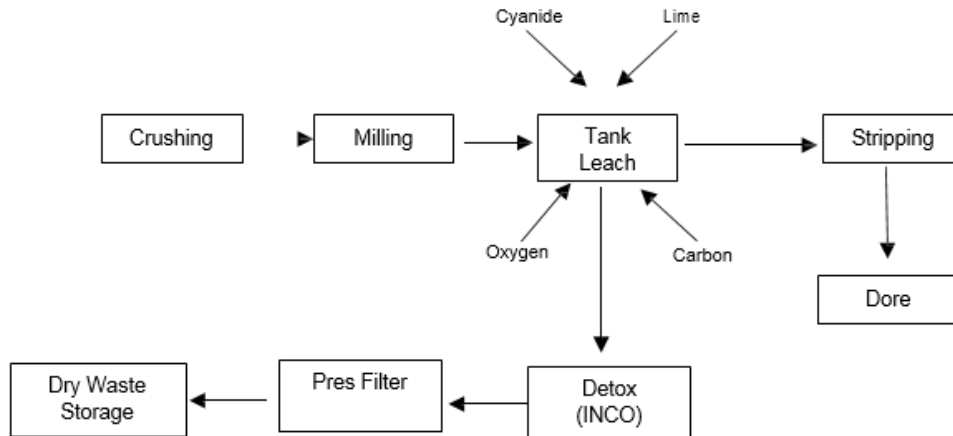


Figure 6 Summary Production Scheme**3.5 WHY AND HOW CYANIDE IS USED?**

Cyanide is a simple compound consistent of carbon (C) and nitrogen (N) which we continuously encounter during our daily lives. Cyanide compounds are compounds which are found naturally in some plants and living beings and are also produced by humans for the production of various products in the industry.

The gold within the ore is solved via cyanide in a process called leaching. Within the context of the project, the tank leaching procedure is to be carried out as follows; 1 ton of ground rock, about 0.45 kg/ton of cyanide will be dissolved to transform the gold into liquid form. The cyanide will be transported to the field in containers that are put into wooden boxes with special enclosures in leakproof packages.

The cyanide will be transported to the field in containers that are put into wooden boxes with special enclosures in leak-proof packaging.

**Figure 7 Transport and Storage of Cyanide (Source: Kışladağ Gold Mine, Uşak)**

TÜMAD has committed to take all necessary precautions to prevent any cyanide pollution entering water, soil and the air and will ensure that all national and international standards will be applied to cyanide management. During project execution, all cyanide associated activities will be performed in accordance with International Cyanide Management Code of the International Cyanide Management Institute - ICMI. TÜMAD will be a signatory of Cyanide Management Code within three years of operation.

The Cyanide Code is an initiative document voluntarily issued for the cyanide producers and the transporters and is used in the gold mining sector. This code defines safe working procedures with cyanide during production, transportation, loading and unloading, storage, handling, closure and emergency response. TÜMAD has prepared and will implement a detailed Cyanide Management Plan aligned with Cyanide Management Code.

3.6 HOW WILL MINE CLOSURE BE ACCOMPLISHED?

Construction phase of the Lapseki Project has been completed and the operation phase is planned to commence in mid-October 2017. The economic life of the mine's production activities is planned to be 10 years.

As mine operations draw to a close, the decommissioning activities of the Project will begin. TÜMAD has already prepared a Mine Closure Framework (which is available to public with other SIP Disclosure Package) outlining its commitment to all measures within the scope of relevant national legislation and international good practise

during closure period of the Project. TÜMAD will prepare a detailed Mine Closure Plan with rehabilitation activities for the mine site after closure and the post closure environmental monitoring programme.

4 MANAGEMENT OF ENVIRONMENTAL AND SOCIAL ISSUES

4.1 WILL THE PROJECT AFFECT AIR QUALITY?

Dust emissions will be generated during mining activities. The main activities that will generate dust emissions are;

- Excavation works,
- Blasting,
- Transportation of materials,
- Open yard storage,
- Exhaust emissions from vehicle and machine use,
- Accession and transportation works within the scope of the project.

Computer modelling of a worst case scenario performed during the EIA process has shown that the ambient air quality at the nearest settlements, namely Şahinli and Kocabaşlar villages and it has been revealed that the modelled dust concentrations will be below the project standards at nearest settlements; Şahinli and Kocabaşlar Villages. No further impacts on air quality in relation to gaseous emissions are expected on the environment and sensitive receptors are expected.

TÜMAD has established a programme for the monitoring of the air quality at the mine site and the closest settlements. In addition local community will have access to a grievance mechanism to submit any concerns related to dust or other air emissions to TÜMAD. Such concerns will be investigated and actions taken to minimise impact as much as possible.

TÜMAD has committed to carrying out its all operations in line with an international environmental management system standard ISO14001, which will be certified by an independent auditor.

4.2 WILL PROJECT BASED NOISE AND VIBRATION OCCUR?

Blasting, excavations, use of machinery and traffic will be a source of noise and vibration related to the project. The computer modelling performed for the noise emissions from the construction and operation of the mine has shown that the project will not create any significant changes in noise levels experienced in local villages.

The main sources of noise that will generate an impact on the sensitive receptors is increased traffic, especially as the Şahinli Village is by-passed by the Biga-Lapseki road.

Blasting will occur at regular times during the day time throughout the life of the mine. The type of blasting will be designed to reduce the transmission of noise and vibration impacts from blasting in local settlements. There will be a schedule of blasting and the local people will be informed of this schedule well in advance.

TÜMAD has established a programme for the monitoring of the noise and vibrations at the mine site and the closest settlements. TÜMAD will be informing the local communities about the schedule of blasting on regular basis. In addition local community will have access to a grievance mechanism to submit any concerns related to noise or vibrations to TÜMAD. Such concerns will be investigated and actions taken to minimise impact as much as possible.

4.3 WILL THE PROJECT AFFECT WATER RESOURCES?

The Lapseki Gold Mine Project is being designed to minimise the risk of contamination to water resources. The design includes a closed contact water system, which means that all the rain and snow falling in ore processing areas and active mining areas, is collected before it can soak into the ground. This collected water is kept inside the closed contact water system, and no polluting water is discharged into the environment. The water at the project site will

be classified into non-contact and contact water. Diversion channels will discharge non-contact water back into the natural drainage. Three staged diversion and drainage channels were designed according to the annual mine development plan. Between years 5-10 of the operation 49% of the surface water of the project area will be collected as contact water and 51% will be released to environment as non-contact water Kovanlıkdere stream will be the main discharge point for contact and non-contact water. Collected contact water will be pumped back to the Processing facility for re-use or will be discharged in accordance with the project discharge standards. The overall surface water quantity reduction in the project site micro-basins will be around 50%. Contact water will be released to the Kovanlık stream to minimize the surface flow reduction. The water quality and quantity will be regularly monitored and contact water discharge will not cause quality reduction in the Kovanlık stream.

Groundwater will not be used for project water supply purposes. Project water will be supplied from Lapseki water transmission pipeline which is located around 10km's away from the Project area.

The groundwater users of the project area include Şahinli and Kocabaşlar villages. and the important groundwater resources include Şahinli and Kocabaşlar catchments providing drinking water to the villages. Şahinli catchment is located within the Kestanelik pit and will be lost during the mining operation. TÜMAD has already provided alternative water sources to Şahinli Village to replace the Şahinli catchment. Kocabaşlar Catchment will also be replaced by TÜMAD before or during the operation. Alanpınar, Baklacı, Yetimçeşme and Kızılcapınar Fountains are the other important groundwater sources located in the vicinity of the Project area. The fountains are used for livestock and daily requirements of the villagers. TÜMAD will provide water to the Şahinli and Kocabaşlar villages from the Lapseki water transmission line during the operation period of the project. During the closure phase of the Project, TÜMAD will make sure that sustainable water sources are allocated to the Villages in order to compensate the water sources that would be impacted from the mining operation. Fountains will be monitored during the operation and if potential flow reductions related with mining are observed at the fountains used by the villagers, a water distribution line will be established and the lack of water will be compensated depending on the community needs and the season.

The expected cone of depression and the location of important water resources are presented in Figure below.

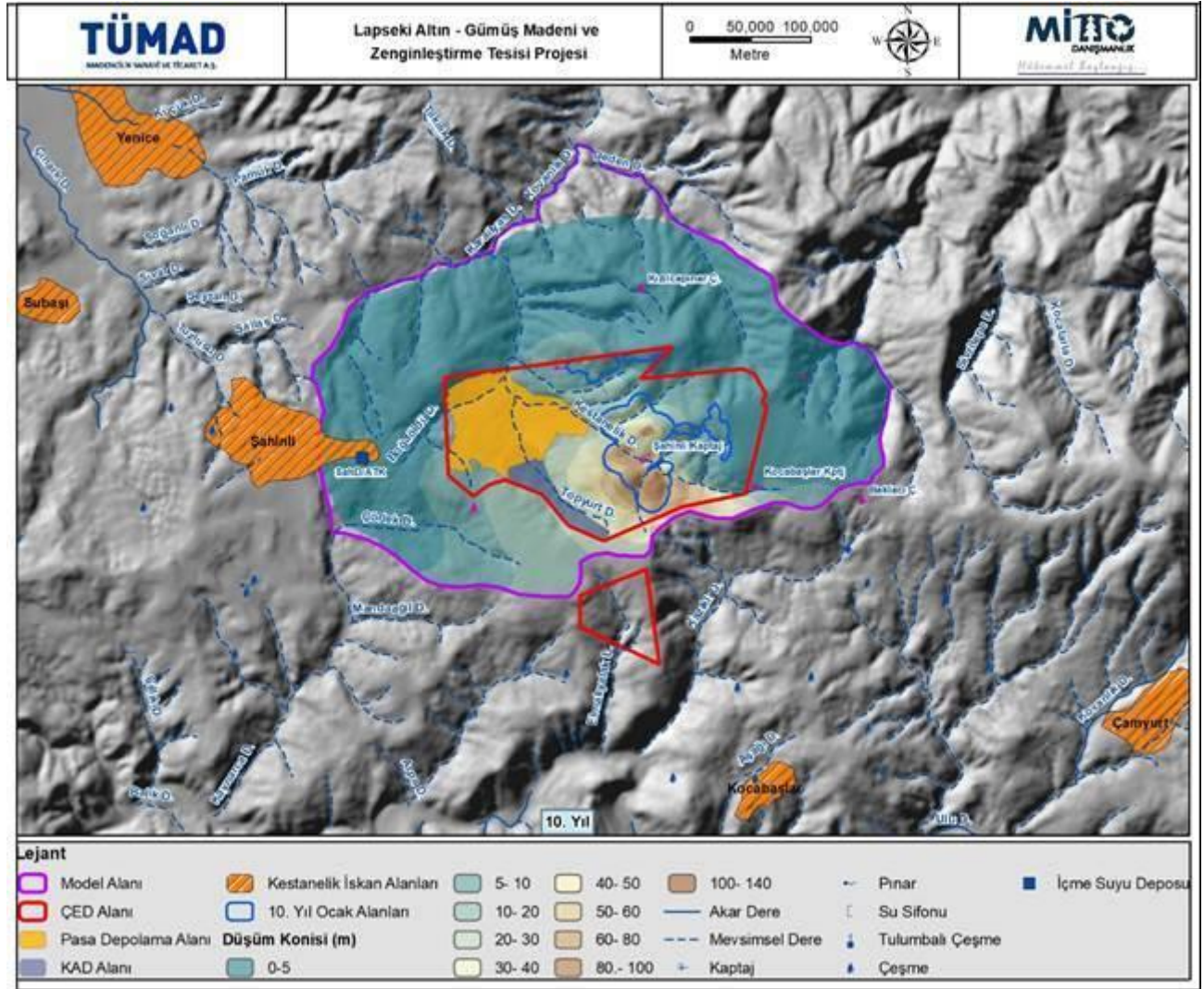


Figure 8 Cone of depression at the end of the Operation (year 10)

The dry stack tailings facility is lined with 2mm HDPE (High Density Polyethylene) geomembrane (an impermeable material known for its exceptional chemical and ultraviolet resistant properties) to mitigate the risk of any seepage into groundwater. Cyanide detection systems will be installed and all persons working in a cyanide area will wear a personal cyanide monitor that will emit a noise if atmospheric cyanide concentrations rise above safe threshold levels are detected.

The mine will generate some waste water from: domestic waste use by mine staff, excess water from quarries and waste waters from processing plant, which will be discharged to Kovanlık Stream. TÜMAD has set stringent discharge standards for the Project based on the national legislation, International Finance Corporation mine effluent discharge standards and relevant EU directives.

When rock that has previously been underground is brought to the surface and is exposed to air and water, it can react with the air and change the quality of water that runs over it (for example, from rainfall), making it more acidic and changing its properties. This water can potentially seep into the groundwater. This is called “acid rock drainage”, ARD in short.

The ARD testing program carried out for the Lapseki mine indicates that the ARD potential of the Project is low and the Potentially Acid Generating rock (PAG) rock will comprise 6% of the overall waste rock volume. However during the operation, a testing program will be used to classify waste rock and segregate PAG (potentially acid generating)

and NAG (non-acid generating) material by testing method very similar to that used for segregation of ore and waste. During mining, when benches in the pit are drilled, samples will be collected from each borehole for gold assays. The samples will also be measured for sulphur to identify PAG and NAG rock. PAG rock will be encapsulated with NAG rock within the waste rock dump and the PAG rock exposed on the pit walls at the end of the mining will be covered by NAG rock to minimize their contact with water and air. The project facilities will be capped by low permeable cover systems during the closure stage and long term chemical and physical stable conditions will be achieved for the permanent project facilities including the waste rock dump, dry stack tailings facility and the pits.

TÜMAD, has developed a comprehensive quality monitoring program to monitor the quality of surface water and groundwater resources in the Project Area. TÜMAD will evaluate the results of the measurements performed as part of this monitoring programme and take necessary actions if required.

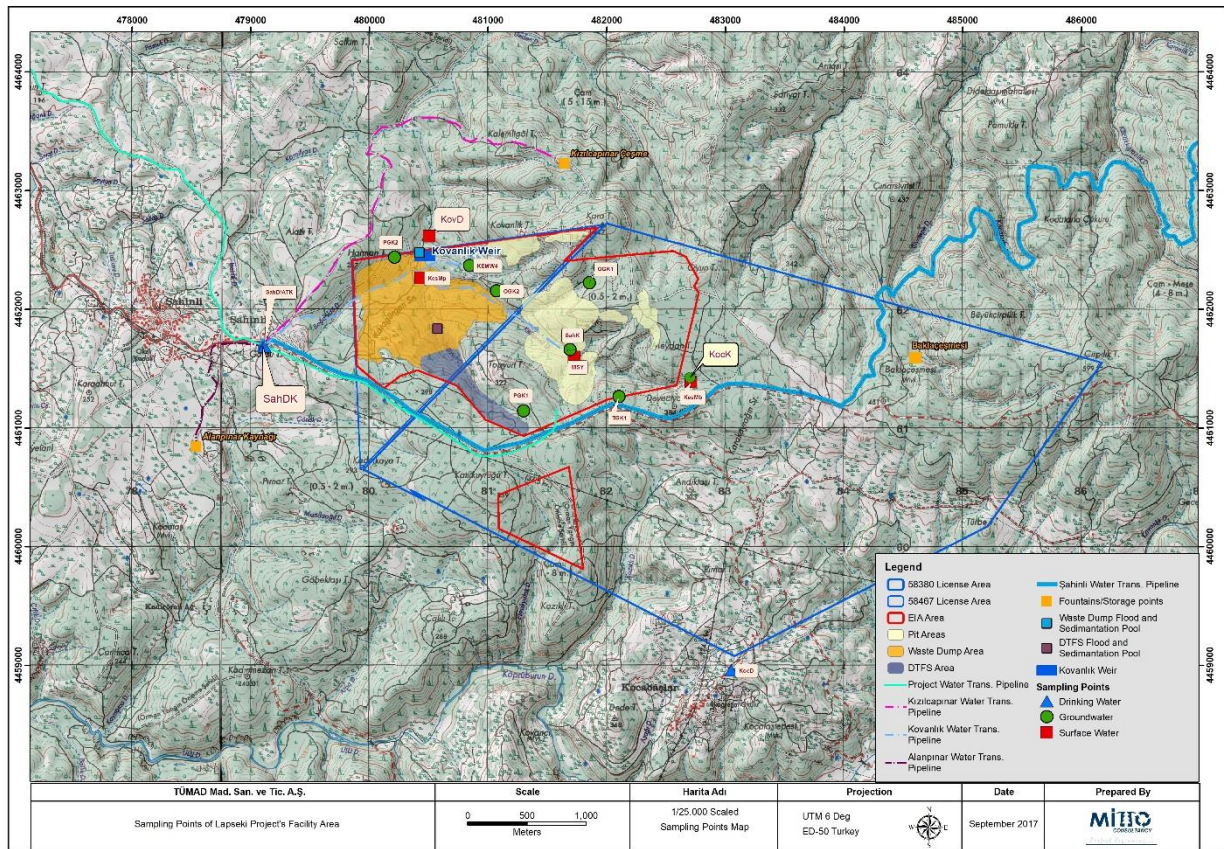


Figure 9 Map of the Water Monitoring Points

4.4 WILL BIODIVERSITY BE AFFECTED BY THE PROJECT?

TÜMAD has organized the field surveys and collection of desktop data between 2013 and 2016 in the Project Area

The baseline results identified the presence of two vulnerable fauna species within the study area: the Common Tortoise (*Testudo graeca*) and the Turtledove (*Streptopelia turtur*) that were observed within the study area. In addition, the Imperial Eagle (*Aquila heliaca*) is a vulnerable fauna species that potentially uses the project area but its presence was not confirmed during baseline studies. These species are identified as Priority Biodiversity Features (PBFs).

A vulnerable flora species, *Jasione idaea* (VU), also considered a restricted endemic species was observed within the study area. Due to the presence of this species, some area within the Project area has been classified as

Critical Habitat (CH).

One regional endemic flora species, *Ferulago humilis* (LC) and two widespread endemic species, *Dianthus lytus* (LC) and *Campanula lyrata* subsp. *lyrata* (LC), are also present in the local study area. However, these species are not considered threatened and have a wide distribution in Turkey, therefore they are not considered to trigger Critical Habitat.

The Project may impact the biodiversity through vegetation removal, top soil removal, disruption of natural hydrology, emission of gaseous pollutant and dust in the atmosphere, potential introduction of alien species, potential accidental contamination of soil and surface water.

TÜMAD will implement a number of management actions to minimise the impacts on biodiversity controls which include:

- Collecting the seeds and creating a seed bank which can be used to plant new areas and restore affected areas.
- Ensuring that construction activities are scheduled to leave enough time to allow for surveys and plant removal.
- If fauna species with limited mobility that cannot move ahead of construction (e.g. Common tortoise) are observed they will be collected by the ecologist and translocated to undisturbed but similar sites within the local study area.
- If nests are observed, TÜMAD will undertake their best efforts to preserve the vegetation in place;
- Individuals of vulnerable flora species directly impacted by the project will be identified and salvaged.
- Additional baseline data collection studies will be performed for the vulnerable species.

TÜMAD will restore and rehabilitate disturbed areas as soon as possible, for example, by planting trees in areas disturbed during exploration and construction that are not required for the operation of the Project. When the Project is being decommissioned, TÜMAD will identify and use local species to rehabilitate the mine site.

TÜMAD has already prepared a Framework Biodiversity Action Plan Framework including Offset Strategy which will be developed into a detailed Biodiversity Action Plan. This framework document describes the commitments to preserving biodiversity and presents the process that will be taken to achieve and implement these commitments.

4.5 WILL TRAFFIC LOAD ON THE ROADS INCREASED?

The aerial distance of the activity area of the Lapseki Project to the Çanakkale province center is 34.7 km and to the Lapseki district center is 7.3 km. Access to the project area is provided by following the Bursa-Çanakkale Highway no. E-90 to reach the Lapseki district center and then by following the Şahinli village road.

For the construction phase, no additional road construction was done and existing main road has been used and will be used during operation. TÜMAD conducted the expansion and improvement of the surface coating of the Lapseki-Beyçayır road. On-site roads construction was completed.

TÜMAD has prepared a Traffic Management Plan for the Project for the definition of mitigation measures to control these risks. The mitigation measures include (but not limited to);

- Defensive driving training for Project drivers;
- Strict adherence to set speed limits by the Project drivers,
- Road signs,
- Engagement meetings with the community members on the traffic routes and schedules,
- Implementation of a road safety awareness programme targeting the local community member's especially vulnerable groups, children, women and elderly people.

4.6 WILL THE CULTURAL HERITAGE BE IMPACTED?

There are no identified cultural heritage at the Project Study area as indicated in the EIA. TÜMAD has developed a cultural management plan and will prepare a detailed chance find procedure. TÜMAD will continue to support cultural and traditional events and festivals as part of its social investments.

4.7 HOW WILL THE PRODUCED WASTE BE MANAGED?

TUMAS is committed to following the waste management hierarchy (prevent, minimise, reuse, recycle) and will comply with Turkish Waste Management Regulations.

TÜMAD has already prepared a Waste Management Plan in order to determine, evaluate and document the amount, physical and chemical properties and hazards of the waste materials that will be generated due to mining activities to be carried out on each different section of the mineral deposit.

The Waste Management Plan addresses domestic non-hazardous waste, hazardous waste related to maintenance activities on site and mineral waste. All hazardous waste will be appropriately identified, segregated and stored temporarily in facilities designed to international standards and later handed for recycling or disposal to licenced companies.

4.8 HOW WILL THE HAZARDOUS MATERIALS BE MANAGED?

There will be hazardous materials used on site due to nature of the Project. TÜMAD has already prepared an Explosives and Hazardous Materials Management Plan. The mitigation measures include (but not limited to);

- Explosives and hazardous materials suppliers will comply with the legal requirements in line with the Local Procurement Management Plan and Contractor Management Plan.
- Transportation of explosive and hazardous materials will be fully compliant with the requirements set in the Regulation on Transportation of Hazardous Materials by Road.
- Hazardous materials will only be moved or transferred within the Site areas by the suppliers who are qualified, trained vehicle operators, using appropriate industrial forklifts or other vehicles.
- All hazardous materials will be checked upon receipt and that quantities and material descriptions match associated shipping manifests.
- Hazardous materials will be stored on site in line with the legal requirements providing health and safety conditions.
- Training will be delivered.
- Spill clean-up Plan is prepared.

4.9 HOW WILL THE HEALTH AND SAFETY OF EMPLOYEES BE MANAGED?

TÜMAD is committed to work in all its mining and mineral exploration sites with full adherence to following principles to ensure the occupational health and safety of its employees, respect the society and its employees, carry on its activities without causing harm to the environment, and perform perpetual and sustainable gold mining operations with high economic yield.

TÜMAD has prepared a Health and Safety Management Plan to set out the principles and monitoring requirements to provide safe environment for employees, visitors and surrounding communities and to protect environment. TÜMAD has already hired Health and Safety professionals and will carry all operations in line with an international H&S standard OHSAS 18001, which will be certified by an independent auditor.

TÜMAD has also prepared an Emergency Action Plan including a Spill Response Plan for different emergency scenarios considering both Project employees and neighbourhood communities.

4.10 HOW WILL HEALTH AND SAFETY OF COMMUNITIES BE ENSURED?

TÜMAD has prepared a Community Health and Safety Security Management Plan to control and monitor the potential risks on the affected communities including communicable and STD diseases, cyanide use, traffic, water resources, dust and air quality, noise and vibration and security personnel. Details of these can be found in the individual plans. In addition TÜMAD will implement an effective grievance mechanism throughout the Project so that if any problems do occur, the community can notify them and TÜMAD will attempt to find a solution

4.11 WILL LAND OWNERS AND LAND USERS BE IMPACTED?

There are 5 rightful users in the acquired 2B land.

Land acquisition within the scope of the Project has been carried out in three different ways, namely:

- Construction period land lease;
- Land acquisitions through expropriation for the electrical energy transmission line; and
- Land acquisitions (legislative) from public institutions for the plant, EIA area (Forest, 2B land).

2B land is a category officially designated to deforested lands repurposed by individuals, companies, villages or towns. A total of 282.7 hectares of this designated EIA area of 395 is planned to be used as the Project Area. 33.5 % of this area (95) ha is 2B land and the rest is forest land.

A permit for non-agricultural use as per the Soil Protection and Land Use Act no. 5403³ was received in May 2015 from the Çanakkale Provincial Directorate of Food, Agriculture and Livestock for 2B agricultural lands (95.2 decares).

Forest permit was received from the General Directorate⁴ of Forestry in accordance with the "Forest Law No. 6831", Article 16 for 1130 decares of forest area. Additional forest permits will be received as needed in parallel with the production activities.

A social impact assessment study conducted for the project identified that there are households in Şahinli and Kocabaşlar that are using these lands for grazing, herb collection and so forth. Some of the villagers have cultivated trees at these lands. The acquisition of the land by TÜMAD will have an impact on the livelihood of these villagers.

TÜMAD has prepared a Livelihood Restoration Framework that would mitigate these adverse livelihood impacts from land acquisition or restrictions on affected persons' use of and access to assets and land by: (i) providing compensation for loss of assets at replacement cost; and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation and the informed participation of those affected. The Livelihood Restoration Framework will be further developed into a Livelihood Restoration Plan which will have detailed information on users impacted by the Project and the mitigation measures proposed to ensure that their livelihood are restored, or preferably improved.

The expropriation works for the overhead power lines have been managed by Turkish Electricity Affairs however TÜMAD will address the livelihood impacts of this power line through the Livelihood Restoration Framework that will subsequently be developed in to a Plan. If there is a gap between compensation provided by TÜMAD so far compared to that which is required by EBRD performance standards, then TÜMAD will ensure that this gap is bridged.

4.12 WHAT ARE THE EMPLOYMENT OPPORTUNITIES

With the completion of the construction phase, employment for the operation phase has been accelerated and employment for operation has started

Local employment will be given priority in the operational period. An average of 250 people will be employed during the operating period. 100% of the unskilled workforce needed during the operating period will be provided from the local and neighbouring settlements, primarily from the affected settlements. In addition TÜMAD is committed to developing the skills of the local workforce so that people from the local community can in time gain Access to

³<http://www.mevzuat.gov.tr/MevzuatMetin/1.5.5403-20080326.pdf> relevant law text

⁴<http://www.mevzuat.gov.tr/MevzuatMetin/1.3.6831.pdf> relevant law text

higher value added work. It has already had some success in this area, in that some local and regional employees who started as unskilled workers in drilling and construction works during the construction period were able to develop their skills became skilled workers.

TÜMAD will adopt a “tiered” approach to recruitment. Priority will be given to project affected settlements including Kocabaşlar, Şahinli, Dumanlı and Çamyurt villages and Lapseki district for Lapseki mine. If the required skill is not found here then workers in other adjacent districts and then within Çanakkale and Balıkesir Province will be targeted. If the required skills are not found in any of these then TÜMAD will search nationally for suitably qualified and experienced staff.

4.13 WHAT IS THE LABOUR MANAGEMENT POLICY OF THE PROJECT?

TÜMAD has developed a Labour Management Plan, which applies to TÜMAD and its contractors, which outlines procedures and requirements implemented by TÜMAD to ensure that TÜMAD and its Contractors respect and protect the fundamental principles and rights of workers through promoting personal respect and a safe work place. This includes:

- fair treatment;
- non-discrimination and equal opportunities for all workers;
- establishing, maintaining and improving a sound worker-management relationship;
- compliance with applicable national labour and employment laws;
- protecting and promoting the safety and health of workers, especially by promoting safe and healthy working conditions;
- preventing the use of forced labour and child labour (as defined by the ILO and Turkish legislation).

TÜMAD will monitor employee standards of its contractors throughout the lifetime of the mine through regular labour and OHS audits.

TÜMAD has developed an Emergency Action Plan, which provides the process and procedures that TÜMAD will follow, together with local emergency service organisations, in the event of an occupational safety or environment incident during the life of the mine.

5 STAKEHOLDER ENGAGEMENT

The stakeholder engagement process under the project started with Chesser Resources in 2009, then continued by TÜMAD when the licenses were taken over. During this period, TÜMAD has engaged with stakeholders in order to present the Project, collect opinions and views of stakeholder on the Project, respond to complaints and grievances and where possible to provide solutions to raised complaints and to understand expectations of stakeholders and to make contributions in the areas of education and social life to local communities. A public consultation meeting was organized during EIA Process on 24 December 2014 in Şahinli Village.

As part of this SIP Disclosure Package, TÜMAD has prepared a stakeholder engagement Plan through which;

- the Project stakeholders are identified
- the Engagement Programme is presented
- the monitoring tools and performance indicators for the management plan

are identified.

TÜMAD has the overarching goal of developing sustainable relations with stakeholder through the life time of the project and therefore will continue to engage with stakeholders through various activities as detailed in the following Stakeholder Engagement Programme.

The programme will be reviewed annually during operations, to ensure that it remains valid and meets the needs of TÜMAD, communities and other relevant stakeholders as identified in this SEP.

Community engagement activities were also held in relation to a number of social responsibility projects including amongst others the construction of water pipelines, Şahinli Village Wedding Saloon and a village transportation company.

TÜMAD has developed an Environmental and Social Framework to identify, assess and mitigate the environmental and social impacts of the Project. This Framework, aligned with international management standards (including ISO 14001, OHSAS 18001 and SA8000) is composed of:

- 1: Policy and Compliance
- 2: Risk Assessment and Management
- 3: Target and Objective Setting
- 4: Organization, Liabilities and Responsibilities
- 5: Competence and Training
- 6: Communication and Consultation
- 7: Change Management
- 8: Operational Control of ESMS Framework
- 9: Emergency Preparedness
- 10: Supplier and Contractor Management
- 11: Monitoring and Assessment
- 12: Non-conformity, Incident and Action Management
- 13: Management Review

As part of the Environmental and Social Management System following policies have been developed;

- Occupational Health and Safety , Environment and Social Management Policy
- Health and Safety Policy
- Environmental Policy
- Quality Policy
- Community Relations Policy
- Supply Chain Policy
- Human Resources Policy
- Field Commitment

6 HOW WILL THE PROJECT SUPPORT COMMUNITY DEVELOPMENT?

TÜMAD has developed a Community Development Plan to provide, an instrument to share the benefits and possibilities of and adopt an integrated approach for community development to which TÜMAD mining will make long-term sustainable contributions during mining activities. The identified community development opportunities would be for public service institutions, farmers, dairy producers, women, employable local community member over 18 years and young people as part of youth inclusion initiative. These opportunities and key elements will be detailed and planned considering the following (but not limited to):

- Work with local muhtars, communities, local Universities, NGOs and local Government representatives to identify local community development needs and priorities.
- Integrate local employment and local procurement plans with local community development needs to identify the likely dependencies or areas of over-reliance on TÜMAD by local communities.
- Cooperation between Vocational High Schools/ Vocational Colleges and the Industry for new graduates employment for development of skills in the local community.
- Cooperation between Universities and the Industry to provide opportunity for junior and senior students to perform practice and observation in the Project.
- Provision of support to young people through vocational trainings for skill development.
- Considering to enhance opportunities for women employment in the mining sector.
- Promoting local entrepreneurship and supporting them through local procurement activities.
- Support other income generating activities that can be undertaken by local communities and identify community-based organisations which could provide support in implementation by local communities.
- Develop an operations-phase Community Development Plan to coordinate Social Investment, Local Employment and Local Procurement based around common objectives and principles.
- Develop a monitoring programme related to community development to enable tracking of investment dependencies and outcome effectiveness.

7 HOW TO RAISE A COMPLAINT OR ASK A QUESTION?

TÜMAD has developed a grievance mechanism which would allow all interested people to raise any complaints and grievances, and request information. Through that mechanism TÜMAD will respond to and resolves the raised issues.

Any grievance, comments or concerns can be brought to TÜMAD's attention either verbally or in writing or by filling in a grievance form (an example is included in Appendix 1) and sending by post or e-mail at the following addresses:

CONTACTS OF TÜMAD Madencilik A.Ş.

TÜMAD Madencilik A.Ş. General Directorate

Buğday Sokak No:9 Kavaklıdere Çankaya ANKARA

Tel : 0 312 455 16 10

Fax: 0 312 455 16 01

TÜMAD Madencilik A.Ş. Lapseki Gold Mine Operation

Address: Beyçayır Yolu 12.km No:210 Şahinli /Lapseki /ÇANAKKALE

Tel: 0312 505 00 06

e-mail: info@tumad.com.tr

APPENDIX 1 - TUMAD GRIEVANCE FORM		
1.	Grievance Number	
2.	Date:	.../.../201
3.	First Name	
	Last Name	
	Occupation	
	Contact Information:	Telephone Number: E-mail address (if available) :
		Address:
4.	Description of Grievance including when it happened	
5.	Signature of Aggrieved	
6.	Received by	