
SANKO GEOTHERMAL POWER PLANT PROJECT

CULTURAL HERITAGE MANAGEMENT PLAN



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1 INTRODUCTION

This document is the Cultural Heritage Management Plan (CHMP) for ‘*Sanko Geothermal Power Plant Project*’ (herein after ‘the Project’). It is prepared by 2U1K Engineering and Consultancy Inc. on behalf of “Sanko Enerji Sanayi ve Ticaret A.Ş. (*Sanko Enerji*)” -the Project Company).

Sanko Enerji, an energy branch of Sanko Holding Group planned to develop Sanko Geothermal Power Project with capacity of 15 MW in Manisa, Salihli District, Yılmaz Neighborhood. The Project seeks for potential financing for the first phase of the Project with 15 MW capacity from Türkiye Kalkınma Bankası (TKB), the financial intermediary. This document is prepared for the Project with 15 MW capacity.

Sanko Enerji projects the potential expansion of the Project to achieve a total capacity of 50 MW. Therefore, additional wells are planned to be established within the license area of the Project. This CHMP has been prepared in line with the World Bank’s (WBs) OP/BP 4.11 Physical Cultural Resources in order to preserve the archaeological and cultural heritage within the scope of the Project and minimize the possible project impacts.

The impact mitigation on the potential and existing archaeological and cultural heritage sites within the project impact area is possible by developing a management plan. Therefore, the construction and drilling activities within the scope of the Project should be conducted in compliance with this management plan.

2 SCOPE

This CHMP applies to all Project activities that have potential to cause an impact on the cultural heritage. This includes especially the site preparation and drilling works of the Project. Noise from testing of wells and odor from the operation of the power plant may have nuisance for the people visiting the sites.

3 OBJECTIVES

The objectives of the CHMP are to:

- Define the Project Area and the cultural heritage which the Project may have impacts on;
- Define the Regulatory Requirements for the protection of the cultural heritage;
- Define roles and responsibilities;
- Define implementation and monitoring requirements of the CHMP;
- Define auditing and reporting requirements;
- Define chance find procedure.

4 PROJECT LOCATION

The Project area is located in Yılmaz Neighbourhood of Salihli District of Manisa Province. Project Company has secured Geothermal Resource Operation License for an area of 2,267.97 hectares with license no.143 and the Production area of the Project covers an area of 84,841 m². The Licenced Area intersects with the "Agricultural Field" according to the 1/100.000 scale Environment Plan. Yılmaz Neighbourhood at northeast is the closest settlement at a distance of 600 m to the Project area. The Project site is surrounded with agricultural lands at east, west and north and İzmir-Uşak highway (E-96) and Manisa-Salihli-Turgutlu Railway at the south. The Project area and the license are presented in Figure 4-1 and Figure 4-2.

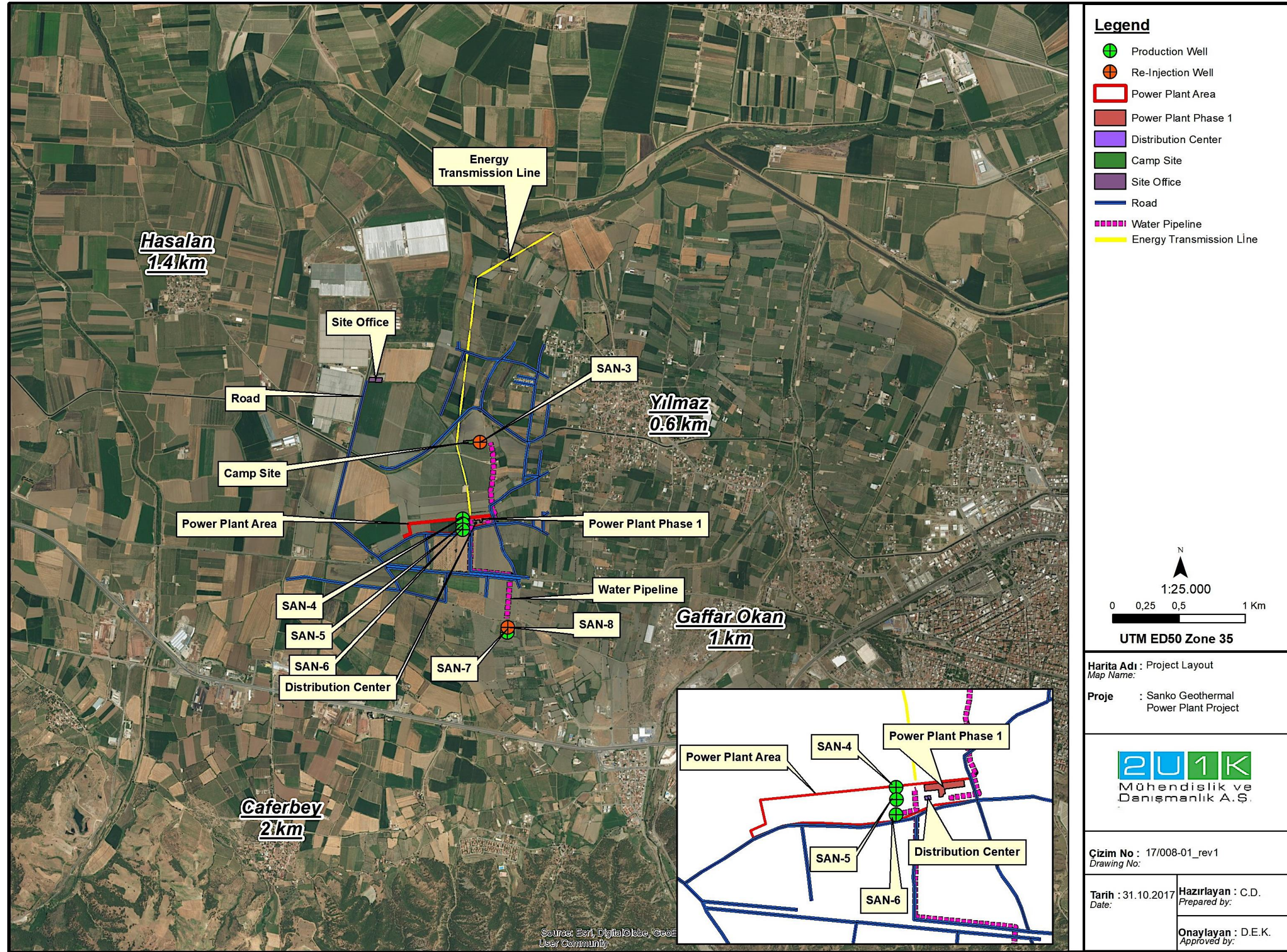


Figure 4-1 Geographical Location of the Project and Associated Facilities

The closest archaeological site to the Project area is the Ancient City of Sardis which was classified as 1st and 3rd Degree Archaeological Site according to the Ministry of Culture and Tourism, İzmir 2nd Regional Committee of Protection of Cultural Heritage. According to the official letter of Ministry of Culture and Tourism, İzmir 2nd Regional Committee of Protection of Cultural Heritage no 08.12.2016-7394 no physical or construction activity can be conducted without the Committee consent (Annex-1).

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Ancient City of Sardis was designated as 1st and 3rd Degree Archeological Site in 1978. The preservation of ancient remains at Sardis, in Bin Tepe varies widely depending largely on natural topography, later rebuilding, and earlier explorations, licit and illicit. Some areas of Sardis are eroded or were overbuilt in later eras, while other parts of the city are deeply buried and very well preserved; many of the tumuli in Bin Tepe were opened over a century ago and continue to be looted. Furthermore, agriculture, construction, and looting are ongoing problems at Sardis as they are in many ancient sites. The site is under the control of the Manisa Archaeological and Ethnographic Museum, and is controlled by the local gendarmerie and by site guards stationed at the Artemis Temple and the Bath-Gymnasium complex. There are privately owned lands where agricultural activities are taking place. Part of the modern town of Sart is located in the first and third degree protected area of the ancient site, where further building is prohibited (UNESCO, 2013).

The license area of the Project intersects the Ancient City of Sardis however, the archaeological site is at about a distance of 4 km to the Power Plant and the wells while the distance to the boundaries of the site is about 2.5 km from the Project units as can be seen in Figure 4-2 below.

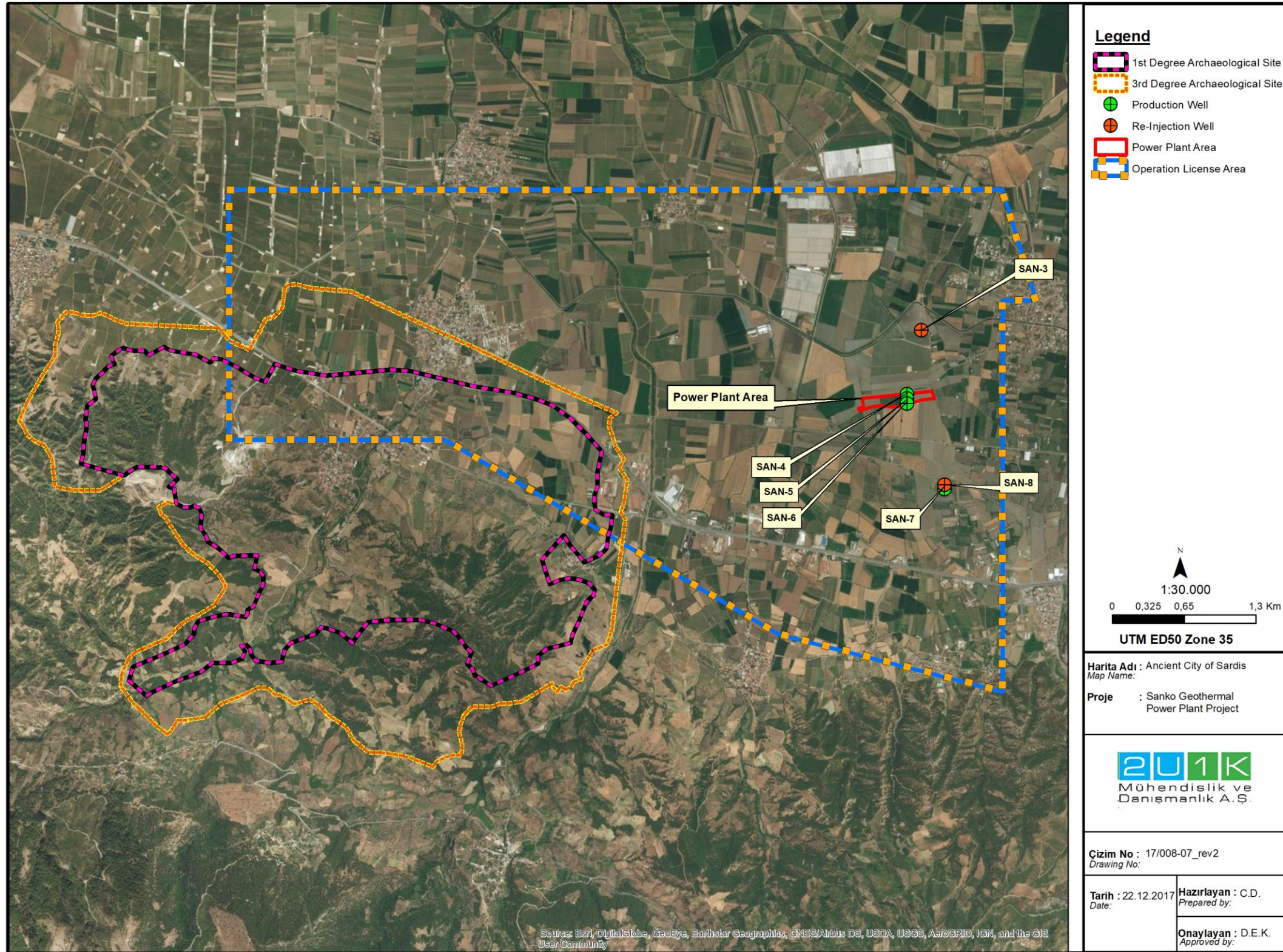


Figure 4-2 Ancient City of Sardis, the Project Area and Operation License Area

The Project has gone through Environmental Impact Assessment (EIA) process according to the EIA Regulation and secured “EIA positive” decision on February 14, 2017 from the Ministry of Environment. As required by EIA process an official opinion on archaeological sites and cultural heritage protection areas was obtained from İzmir Cultural Assets Regional Committee on the Project area during the national EIA process (Annex-2). According to the official letter there are no registered archaeological or protected sites or cultural heritage assets according to the requirements of Law on “Conservation of Cultural and Natural Assets” (Law No. 2863, amended with the Law No. 5226) within the Project area.

Sanko Enerji projects the potential expansion of the Project to achieve a total capacity of 50 MW. Therefore, additional wells are planned to be established within the license area of the Project. The locations of the potential wells for the future purposes of the Project are presented in Figure 4-3 .

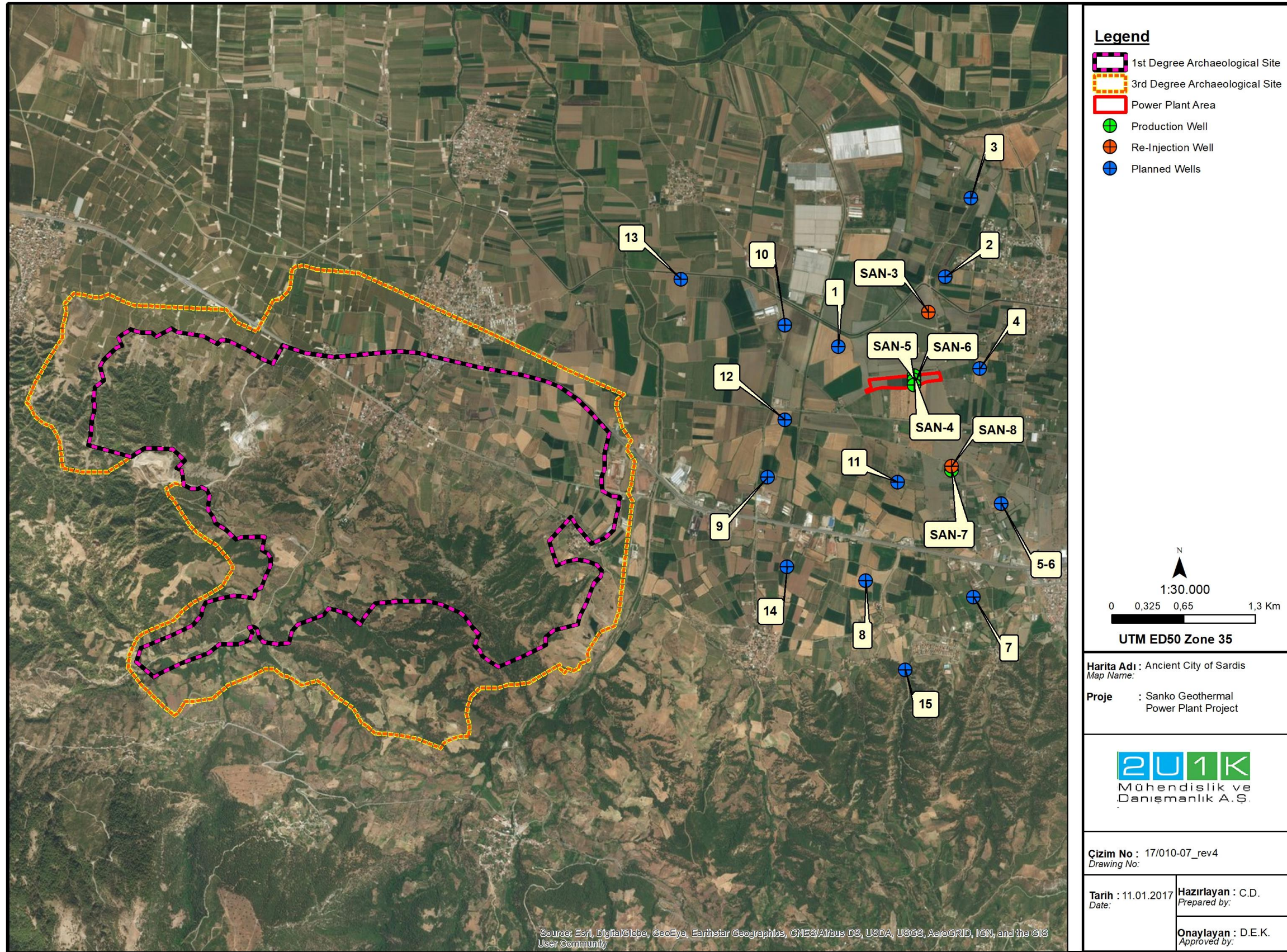


Figure 4-3 Projected Wells and the Ancient City of Sardis

As can be seen in Figure 4-3 above, the projected wells are not located in the boundaries of the Ancient City of Sardis. The distance of the closest well is around 900 to 1,000 meters to the borders of the 1.Degree Archaeological site. The location and type of wells have been described in the EIA Report of the Project but on the other hand, during the course of the Project development, both the location and type could be changed based on the outcomes of drilling activities. In case, new wells are required in the upcoming phases of the Project, all required permits will be obtained from pertinent official authorities such as General Directorate of State Hydraulic Works (DSİ), Directorate of Cultural Heritage Protection Committee and Provincial Directorate of Food, Agriculture and Livestock. In any case, no activity will be performed within the area of the Ancient City of Sardis.

Impacts of the Project on landscape have been evaluated in the scope of the ESIA studies and a visibility analysis of the Project components from the Ancient City of Sardis was conducted.

The area around the Project has flat topography with no specific visual features except for the Ancient City of Sardis whose boundary is at about 2.5 km distance from the Power Plant. Temporary drilling rigs will be visible to the nearby settlements and be contrasting in the landscape. The highest structure within the scope of the Project will be the drilling rigs of 45 meter followed by the plant however will be erected for a limited period of time.

Visibility analysis for the landscape impacts on the Ancient City of Sardis was conducted and a visibility map was prepared which is provided below in Figure 4-4. The structural features of the Ancient City are located within a limited area surrounded with orchards. There are also other structures such as dwellings, orchards and road between the existing and planned Project units (the power plant, wells and aboveground pipelines) and the Ancient City which will decrease the visibility of the units. The distance is also relatively long for creating a major negative landscape impact.

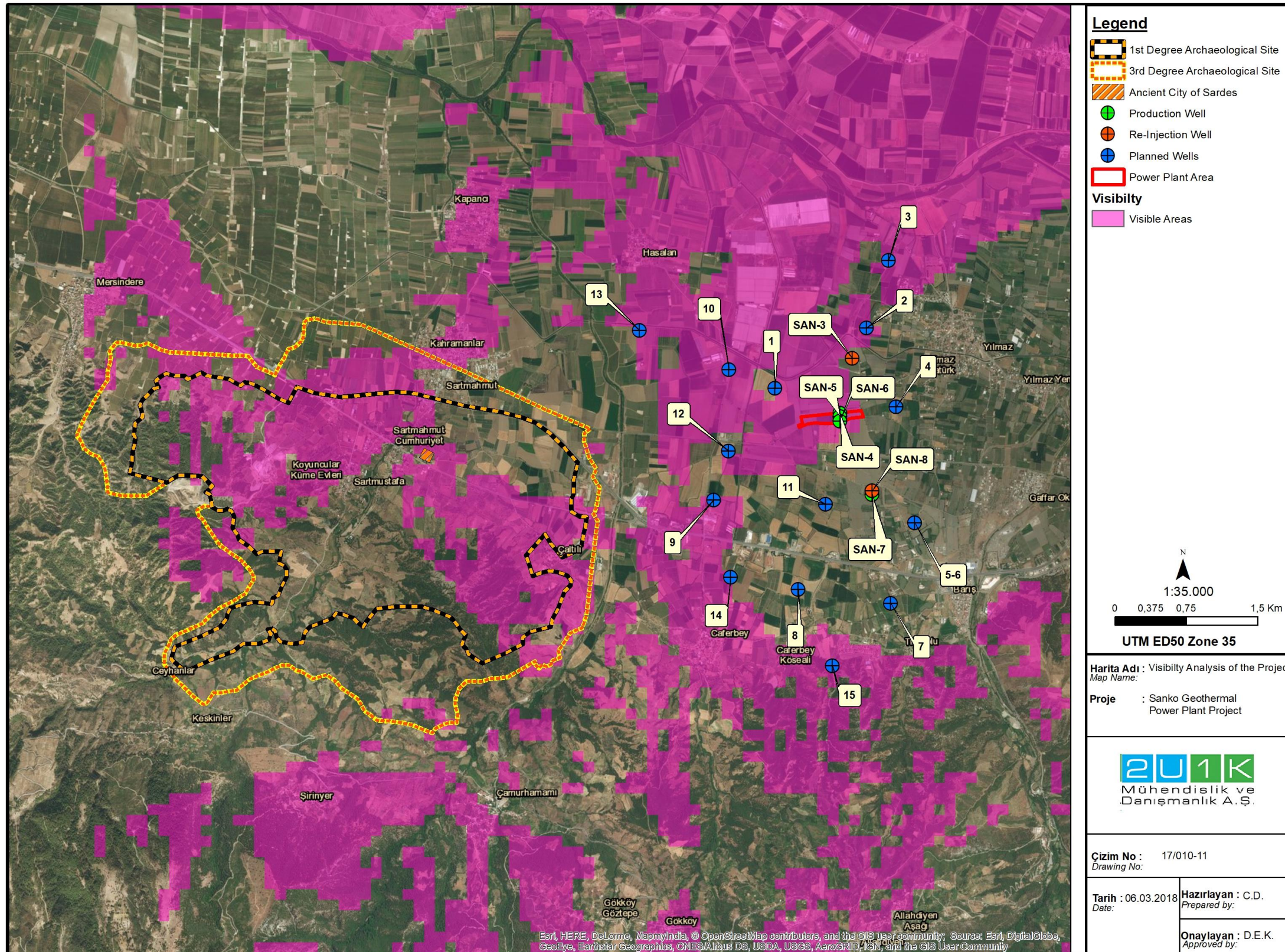


Figure 4-4 Visibility Map of the Project from the Ancient City of Sardis

5 REGULATORY REQUIREMENTS

The Project will comply with the national laws / regulations and applicable lender standards, with the more stringent standards representing the Project Standards.

Applicable Project Standards are summarized in Table 5-1 below.

Table 5-1. Applicable Project Standards

Standard	Scope
Law on Preservation of Cultural and Natural Assets	Identification, designation, mitigation and management of cultural heritage
World Bank OP4.11 Physical Cultural Resources	Risk assessment, mitigation and management related to cultural heritage
The Convention Concerning the Protection of the World Cultural and Natural Heritage (The World Heritage Convention)	Protection, conservation and presentation of cultural and natural heritage

5.1 Turkish Legislation

In Turkey, the movable and immovable cultural and natural assets are put under protection in compliance with the “Law on Preservation of Cultural and Natural Assets”, 2863, which was published in the Official Gazette numbered 18113 and dated 23 July 1983.

The objective of the Law is to set the definitions regarding the movable and immovable cultural and natural assets that shall be protected; to arrange the procedures and activities to be performed and to establish the formation and duties of the organization that will enforce the required principles and implement decisions on this subject.

Article 3 of the Law provides the following definitions:

- Cultural properties are all over-ground, underground or submarine movable and immovable properties related with science, culture, religion and fine arts belonging to prehistoric and historic periods.
- Natural properties are the over-ground, underground or submarine properties that belong to geological, prehistoric and historical periods and that shall be protected because of their rarity, features and values.

Article 4 of Law regulates the Obligation to inform. In case of chance find of movable and immovable cultural and natural properties there is an obligation to inform the nearest Museum Directorate, Mukhtar, or civil administrative bodies, not later than 3 days after the find. The Mukhtar should inform the nearest civil administrative body within 24 hours of the notification. The civil administrative office will inform the Ministry of Culture and Tourism and nearest Museum Directorate within 10 days of an official application. The General Directorate for Cultural Heritage and Museums of Ministry of Culture and Tourism and the relevant Regional Cultural Heritage Preservation Council is responsible for the registration of the find.

Article 5 states that cultural and natural properties shall be treated as state assets.

Article 6 defines immovable cultural and natural heritage properties and provides a detailed list of them.

Article 7 states that the relevant Regional Cultural Heritage Preservation Council Directorate is responsible for registration of cultural heritage properties.

Article 8 of the Law regulates the taking of decisions for protection areas of cultural heritage properties. This article states that RCHPCs have the power of taking decisions for the protection areas of cultural heritage properties and they decide about the possibility of construction and facilities inside their protection areas.

Article 9 of the Law states that construction and physical intervention to the immovable cultural heritage properties is forbidden without the permission and decisions of the Regional Cultural Heritage Preservation Council. Restoration, construction, drilling, partial or total destruction, and excavation are considered as physical interventions.

In addition to the Law no: 2863 on Preservation of Cultural and Natural Assets, there are some regulations and principle decisions governing the management of cultural and natural assets. According to the Principle Decision no: 658, taken on November 5th 1999, "Archaeological Sites, Conditions of Protection and Usage", the archaeological sites are classified into three main categories, which can be found in Box 3-1.

Box 5-1 Classification of Archaeological Sites in Turkey

FIRST DEGREE ARCHAEOLOGICAL SITE	<p>Areas requiring highest level of protection, with the exception of scientific excavations aiming protection. Neither construction nor development are allowed in these sites. All kinds of construction, excavation, and modification activities are prohibited within the boundaries of these sites. However, for exceptional cases such as the necessity for infrastructure construction, Regional Preservation Boards may permit such activities based on the approval of the relevant museum directorate and the head of the scientific excavation team</p>
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<p>SECOND DEGREE ARCHAEOLOGICAL SITES:</p>	<p>Sites which require medium level of protection. They should be preserved based on the conditions of protection and utilisation set by the Regional Preservation Boards. Additional construction is prohibited. Similar to the 1st Degree Sites, for exceptional cases such as necessity for infrastructure construction among others, Regional Preservation Boards may permit such activities based on the approval of the relevant museum directorate and the head of the scientific excavation team.</p>
<p>THIRD DEGREE ARCHAEOLOGICAL SITES</p>	<p>Lowest level of protection area. Construction is permitted based on the decisions of Regional Preservation Boards. Before applying for a construction permit, test pit excavations should be conducted and the outcomes of these excavations should be reviewed by the relevant museum and, if present, the head of the scientific excavation team. Reviews should be submitted to Regional Preservation Boards. The Boards may ask for extension of the scope of test pits before taking any decision.</p> <p>Furthermore, Implementation Guidelines for Field Surveys, Test Pits and Excavation Works on Cultural and Natural Assets (Ministry approval number 94949537-160.99-51264, dated 13.03.2013) define the procedures for salvage excavations, archaeological test pits and other studies.</p>

5.2 World Bank Standards (OP4.11 Physical Cultural Resources)

The World Bank's general policy regarding cultural properties is to assist in their preservation, and to seek to avoid their elimination. The specific aspects of the Policy are given below.

- The Bank will assist in the protection and enhancement of cultural properties encountered in Bank financed projects, rather than leaving that protection to chance. In some cases, the project is best relocated in order that sites and structures can be preserved, studied, and restored intact in situ. In other cases, structures can be relocated, preserved, studied, and restored on alternate sites. Often, scientific study, selective salvage, and museum preservation before destruction is all that is necessary. Most such projects should include the training and strengthening of institutions entrusted with safeguarding a nation's cultural patrimony. Such activities should be directly included in the scope of the project, rather than being postponed for some possible future action, and the costs are to be internalized in computing overall project costs.
- This policy pertains to any project in which the Bank is involved, irrespective of whether the Bank is itself financing the part of the project that may affect cultural property.

In addition, it states that the impacts on physical cultural resources resulting from project activities including mitigating measures may not contravene either the borrower's national legislation or its obligations under relevant international environmental treaties and agreements. According to Paragraph 9 of the Policy;

"The objective of this policy is to assist borrowing countries to avoid or mitigate adverse impacts on physical cultural resources from development project the Bank finances. In addition, it states that the impacts on physical cultural resources resulting from project activities including mitigating measures may not contravene either the borrower's national legislation or its obligations under relevant international environmental treaties and agreements."

5.3 International Conventions

Project relevant guidelines include those of the United Nations Educational, Scientific, and Cultural Organization (UNESCO). Turkey ratified "The Convention Concerning the Protection of the World Cultural and Natural Heritage" (The World Heritage Convention). The signatories to this Convention have agreed "to ensure that effective and active measures are taken for the protection, conservation and presentation of the cultural and natural heritage" on their territories.

6 ROLES AND RESPONSIBILITIES

This Plan identifies the requirements, and processes and procedures for CHMP compliance. The Project has the ultimate responsibility for CHMP compliance but responsibilities regarding the protection program are divided between The Project Company staff and Contractors.

The introduction of responsible parties to ensure the implementation of the commitments of this Plan is briefly described in the Table below.

Table 6-1. Responsible Parties of the CHMP

Ministry of Culture and Tourism	<ul style="list-style-type: none"> Responsible for culture and tourism affairs in Turkey.
Directorate of Manisa Archaeology Museum	<ul style="list-style-type: none"> Responsible to provide experts for the sites within 24 hours after being informed. Responsible for the excavation of chance find areas. Museum Directorate will follow the directions and decisions of Ankara Regional Preservation Board of Cultural Assets of Ankara.
Ankara Regional Preservation Board of Cultural Assets	<ul style="list-style-type: none"> The head of decision making any intervention, which would be made on the site after the chance find
Project Company	<ul style="list-style-type: none"> Responsible with the monitoring of the implementation of the Cultural Heritage Management Plan and the Chance Find Procedure In case of need to identify a Chance Find, mobilize an archaeology team and equipment. (stop or resume of the ground disturbing activities will be under the sole responsibility of the cultural heritage responsible staff) Supervise the cultural heritage responsible staff for the monitoring of cultural heritage and archaeological protection activities Record and monitor all chance finds through a formal system.

Furthermore, the responsibilities for the implementation of this plan are outlined in Table 4-2 below.

Table 6-2. Key Roles and Responsibilities

Roles	Responsibilities
General Manager	Ensures that this CHMP is implemented Provides necessary resources for effective implementation of this Plan
Project Manager	Ensures that this CHMP is implemented Provides necessary resources for effective implementation of this Plan Coordinates with parties for effective implementation of this Plan
Administrative Affairs Manager	Ensures that all employees are aware of, and appropriately trained on, Cultural Heritage Management Plans, and include cultural heritage into "Code of Conduct" induction training.
Construction Works Project Manager	Implements and improves this CHMP Ensures that all contractors and subcontractors are aware of, and appropriately trained on Cultural Heritage Management Plans. Records the spatial coordinates of all known cultural heritage sites, and chance

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Roles	Responsibilities
Operation and Site Manager OHS Department	finds, throughout the Projects lifecycle.
Community Relations Officer	Coordination with organisations and other stakeholders.
Contractors	Comply with cultural heritage management procedures. Comply with cultural heritage management requirements set out in contractor contracts.
Project Workers	Be familiar with cultural heritage management procedures through induction training and other training provided.

6.1 Requirements and Responsibilities Throughout the Project Phases

Construction / Drilling Activities	
Requirements	Responsibility
<ul style="list-style-type: none"> ➤ Training on the Ancient City of Sardis and its conservation requirements as well as Chance Find Procedure to all workers including contractors' and sub-contractors' should be provided by the Project Company in cooperation with the Ministry of Culture and Tourism and Provincial Museum Directorate. The trainings should be performed along with the start of implementation of ESIA requirements and by external experts if required. ➤ Monitor and audit contractor compliance with cultural heritage protocols ➤ A Chance Finds reporting approach must be implemented and maintained (for all possible Chance Finds, cultural heritage or not) ➤ Any archaeological or heritage site discoveries during works must be reported to the related authorities, and treated as an incident. Work at the area must cease immediately, the area demarcated and investigate and carry out salvage operations <ul style="list-style-type: none"> • If the Chance Find is an isolate or not cultural heritage, the community superintendents must approve the removal of site protection measures and activity can resume only with consultation and approval of the local authorities. • If the heritage specialist and/or archaeologist confirm the Chance Find is an cultural heritage site he/she will inform the Environmental Manager and Supervisor; and initiate discussions with the latter about treatment • If a Chance Find is a verified cultural heritage site, prepare a final Chance Finds report once required treatment has been completed • While required treatment is ongoing, coordinate with Contractor and relevant Project staff keeping them informed as to status and schedule of investigations, and informing both when the construction may resume ➤ Components of the Cultural Heritage Management Plan for the Project will be communicated in an accessible format to local communities, local and national governments and regulatory agencies 	<p style="text-align: center;">Project Company Project Subcontractor Local / National Authorities</p>
Operation Phase	
Requirements	Responsibility
<ul style="list-style-type: none"> ➤ Ongoing monitoring and evaluation, through monthly Cultural Heritage monitoring reports, will be prepared during the operation phase 	<p style="text-align: center;">Project Company</p>

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<ul style="list-style-type: none"> ➤ Ongoing implementation of Chance Find approach ➤ Ongoing monitoring and auditing of internal and consultant implementation of CHMP 	Local / National Authorities
Closure Phase	
Requirements	Responsibility
<ul style="list-style-type: none"> ➤ Review all Cultural Heritage monitoring reports and document any potential areas of concern ➤ Ensure that there are no outstanding grievances that could be of risk to Rio Tinto and subsidiaries at the Project site ➤ Determine if post-project monitoring is required 	Project Company Local / National Authorities

7 IMPLEMENTATION and MONITORING OF CHMP

This Plan will be reviewed on three months basis during the construction / drilling activities.

During the operation phase, revisions (if any) will be made to reflect the changing circumstances or operational needs of the Project.

Any revisions to this Management Plan will be distributed accordingly in order to ensure that all Project staff has access to the latest version of this Plan.

7.1 Monitoring of CHMP

Monitoring procedures of this Plan are listed below, respectively as;

- The Project contractors shall report during drilling/construction works to the related department of the Project Company on the implementation of cultural heritage management requirements during the construction and operation phase of the project, including:
 - The protection of sites by careful siting of access routes or facilities;
 - Induction training including cultural heritage awareness given to staff and planned;
 - Cultural heritage-related complaints and actions taken;
 - Cases of damage to, or disruption of, cultural heritage properties and actions taken.
- The related department of the Project Company will conduct routine inspections of site activities in consultation with the Construction Manager and Operation Manager to assess the potential for chance finds at work sites and any other cultural heritage issues that may arise.
- The Project Company will conduct an inspection of any cultural heritage field activities and documentation that are implemented as a result of a chance find or other event that results in archaeological field work.

8 AUDIT AND REPORTING¹

Internal Auditing

Daily inspections will be carried out by operational area superintendents / supervisors covering a broad range of operational aspects, including cultural heritage. Any incidents identified during these inspections will be reported formally.

External Auditing

Conformance with this plan will be subject to periodic assessment by the Project Lenders.

¹ Records of internal and external audits, inspections and incidents will be managed by the Project Company.

9 CHANCE FIND PROCEDURE

9.1 Purpose

The purpose of this Procedure is to ensure that the impact of construction activities on archaeology and cultural heritage issues in Construction Site of the Project is controlled and minimized. Additionally, this procedure describes how chance archaeological finds should be managed.

9.2 Scope

This procedure is applicable within the Project Site and close environs at all stages of the associated facilities, throughout the Project activities.

9.3 Responsibilities

Operation and Site Manager will be responsible for conducting this procedure and to ensure the applicability of the methods outlined in this procedure.

An archaeological consultant will be responsible to conduct an audit in compliance with the World Bank OP 4.11 Physical Cultural Resources. The consultant will constitute the archaeological watching brief and will be responsible for communicating the chance finds as per the procedure outlined in this procedure.

Operation and Site Manager and Archeological Consultant will work together in planning and designing training programs to be delivered to the construction and operation personnel for identification of features suspected to be of cultural value in a quarterly basis.

9.4 Definitions

Archaeological discoveries of minor significance: This type of archaeological discovery would be of fairly small size, such as an isolated feature or find-spot.

Examples: Statues, Tablets, Seals, Coins, Mosaics, Metal Objects, Human Skeletons, Stone tools, etc.

Archaeological discoveries of medium significance: This type of archaeological discovery would be of small to medium size, such as a small group of features or a single burial.

Examples: Small size mound, Rock cut tombs, Rock carvings, Fossils.

Archaeological discoveries of major significance: This type of archaeological discovery would have fairly major significance such as a settlement site or group of burials.

Examples: Mounds, Tumuli, Cave paintings, Castle remains, Acropolis, Necropolis spheres, Open air settlements.

9.5 Procedure

In the event of a chance find discovery, the following actions will be executed:

- 1 All the work will cease at the location of the chance find.
- 2 Temporary buffer zone will be established around the chance find location.
- 3 Operation and Site Manager will inform the Archaeological Consultant to make detailed site assessment.
- 4 Operation and Site Manager will inform Museums Directorate and Museums Directorate representatives to mobilize to site within 24 hours of notification.
- 5 Museums Directorate will assess findings and determine the significance of the find and will inform Operation and Site Manager and Archaeological Consultant on the scope of the resulting investigation.
- 6 Operation and Site Manager and Archaeological Consultant be informed of actual time delay.
- 7 Construction machinery to be removed from the area of the archaeological find and the archaeological area to be cordoned off by warning tapes, fences and notice boards.
- 8 Operation and Site Manager will fill out a Chance Find form.

ARCHAEOLOGICAL CHANCE FIND FORM

Location	Chance Find No	Date
Condition		
Period		
Description		
Material		
Object geometry		
Photo		
Name of Encounter		
Signature		