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2 LEGAL FRAMEWORK

The construction, operation and closure of the Amulsar Project will meet the requirements, spirit and intent of the following:

- Armenian legislation, regulation, permits, approvals and strategies;
- International requirements that comprise, amongst others, the IFC Performance Standards and EBRD Performance Requirements (as well as, potentially, the Equator Principles and Asian Development Bank (ADB) Environmental and Social Safeguards);
- Lydian corporate mandate, its eight corporate policies, Code of Conduct and best practice commitments; and
- Good International Industry Practice (GIIP) that defines leading industry best practices.

This regulatory and administrative framework is described in the following sections. The current status of Project environmental permitting, together with Project compliance targets and assessment criteria have also been identified. In addition, targets for environmental and social aspects that will be achieved by the Project have been defined.

2.1 Republic of Armenia (RA) Legislation and Regulations

2.1.1 Introduction

In the past, environmental permitting in RA was predominately based on the requirements of the Soviet Union legislation. Currently the RA is working towards the adoption of EU-based legislation and where relevant the ESIA has considered the relevant EU social and environmental legislation with respect to the Project.

RA environmental protection in the mining industry is permitted through the Civil, Administrative, Mining, Water, Land, Waste, and Criminal 'Codes of Armenia.' International treaties and conventions, and specific laws on the inspection, expertise and licensing of industrial projects also apply. Table 2.1 provides a summary of the RA legislation relevant to the Project and considered in the ESIA. Following national independence in 1991, the implementation of the 'Principles of the Legislation on Nature Protection' provided an over-arching environmental policy for Armenia. More than 500 subsidiary acts have been adopted as part of the implementation of environmental legislation.

The Constitution of the RA was adopted in 1995 and amended in 2005 and 2015. It outlines the role of the State with regard to environmental protection and the reasonable use of natural resources. By 2015, approximately 30 laws on environmental protection, that have

relevance to the Project, had been passed. These are listed in Table 2.1, including the most relevant supplemental laws, which have been passed to date.

Table 2.1: Principal RA Environmental, Social and H&S Laws and Codes Relevant to the Project	
Name of RA Law / Code	**Date Adopted**
Mining Code	2012
Law on amendments to the Mining Code	2014
Law on amendments to the Mining Code	2015
Law on Environmental Impact Assessment and Expert Examination	1995
New Law on Environmental Impact Assessment and Expert Examination	2014
Law on Budgets System	1997
Law on Inspection of Use and Protection of Land	2008
Law on Ozone Depleting Substances	2006
Law on Specially Protected (Natural) Areas	2006
Law on Rates of Environmental Charges	2006
Law on the Needs of Society & State of Property Resettlement	2006
Forest Code	2005
Law on Environmental Control	2005
Law on Compensation Payments for Damages to Flora and Fauna due to Environmental Offences	2005
Law on Wastes	2004
Labour Code	2004
Water Code	2002
Law on Seismic Protection	2002
The Code of Administrative Violations	1985
Land Code	2001
Law on Local Self Government	2002
Law on the Purposeful Use of Environmental Charges Paid by Companies	2001
Law on Hydro-meteorological Activity	2001
Law on Lake Sevan	2001
Law on Annual and Complex Program for the Lake Sevan Ecosystem Restoration, Conservation, Reproduction and Use	2001
Law on Environmental Education	2001
Law on Fauna	2000
Civil Code	1998
Law On Preservation and Utilization of Immovable Monuments of History and Culture and Maintenance of Historic Environment	1998
Law on Flora	1999
Law on Protection of Selection Achievements	1999
Law on Environmental Fees and Natural Resources Use Charges	1998
Law on Population Protection in Emergency Situations	1998
Law on Atmospheric Air Protection	1994
Note: This list is not intended to be exhaustive.	

2.1.2 Mining Code

Mining (Subsoil Use) Permit

The mining sector in the RA is regulated through the Mining Code, which was adopted in January 2012. The Mining Code outlines the rights and responsibilities of government entities, mining and exploration companies. On the 21st of July 2014, the National Assembly of RA amended the Mining Code and adopted a new EIA Law. The changes to the Mining Code came into effect on July 31st, 2014 and the new EIA law was enacted on August 9th, 2014. The Company submitted the Mining Right application on the 29th of July 2014, under the previous legislation.

On the 22nd of June 2015, the National Assembly of RA amended the Mining Code and the Law on "Wastes". The amendments to the Mining Code came into effect on 1st August, 2015. The main purpose of the amendments is to clarify that the additional materials such as industrial waste heaps, barren rocks, etc., generated as a result of mining activity are considered as wastes in the sense of the RA Law on "Wastes".

The Mining Code is administered by the Ministry of Energy and Natural Resources (MENR), which reviews mining and exploration applications. The general stages for the Project development, with reference to the Mining Code, are illustrated in **Figure 2.1** and the definitions of terms are explained in Table 2.2.

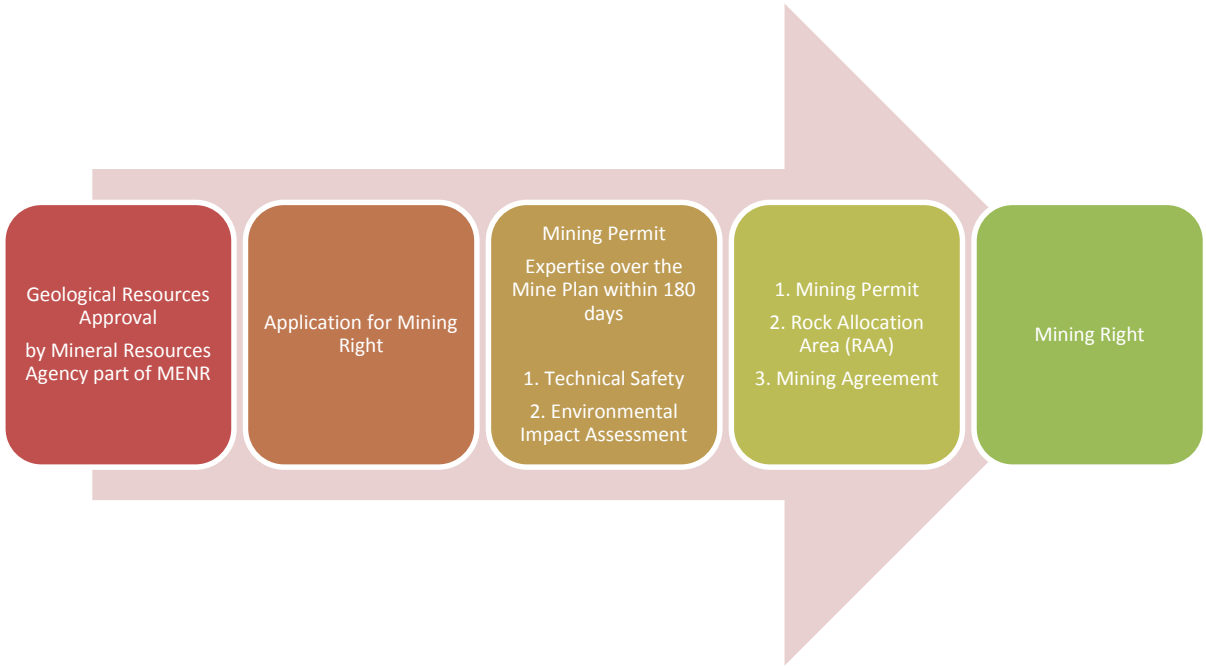

Figure 2.1: Stages of Project development with reference to the Mining Code

Table 2.2: Definition of Terms used in Figure 2.1	
Stages of Project Development applicable in the Mining Code	**Description**
Geological Resource Approval	The geological resource is approved by Mineral Resources Agency (MRA) experts
Application for Mining Right	Mining Rights consists of: Mining Permit Rock Allocation Area Mining Agreement
Mining Permit	Exclusive rights over the extraction of ore, barren rock disposal and treatment of ore. This assumes an approval of the Mine Plan by the ***Environmental Impact Assessment*** department of the Ministry of Nature Protection and the ***Technical Safety*** department of the Ministry of Territorial Administration and Emergency Situations.
Mining Right	Executive rights for geological exploration or extraction of minerals confirmed ***Mining Permit***, ***Mining Agreement*** and ***Rock Allocation Area (RAA).***

Project Requirements

The Project requirements for mining are established in various articles of the Mining Code, which provide the pre-conditions for:

- Granting geological exploration rights for the purpose of mining;
- Granting Mining Right;
- Enlargement of subsoil allotment provided for geological exploration for the purpose of mining; and
- Enlargement of allotment provided for the purpose of mining.

A Mining Right for exploitation of the Tigranes, Artavazdes and Erato pits is required. The Mining Right for Tigranes and Artavazdes was granted in 2012 and was resubmitted in July 2014 taking into account changes in the Project design that have been incorporated in the updated 2014 Feasibility Study. The 2014 Mining Right for the Erato pit and changes in Project designs (mining plan) for Tigranes and Artavazdes pits was granted to Geoteam on 26th November, 2014.

As a result of the Technical Report (TR)[1], completed in November 2015 based on the Value Engineering and Optimization, the Mine Plan had been changed and the changes will have to be reflected in the updated Mining Right (May 2016). The process of Environmental Impact Assessment under Armenian requirements was complete and the permit was granted on 28th April, 2016.

Environmental Requirements

Environmental requirements of the Mining Code are stipulated in Chapter 2 (Article 15), Chapter 3 (Article 26), Chapter 6 (Article 61), and Chapter 8 (Articles 64 to 71).

Article 15 sets out general terms of public administration of mining, subsoil protection and mining related nature and environmental protection. Specifically, Article 15 (2-10) stipulates the procedure for carrying out research work to protect the safety and health of the local population living in areas where mining activities, and disposal and storage of industrial waste generated from mining activities, takes place.

Article 26 of Chapter 3 on Mining Rights under the Mining Code stipulates a prohibition on mining as follows:

1) Mining in any defined RAA shall be prohibited in the manner prescribed by the RA legislation, from the perspective of ensuring national security, protection of human lives and health, cultural values or nature and environment, where a land plot on the claimed RAA:
   - o Was provided for use as a cemetery;
   - o Accommodates natural, historical and cultural monuments; and
   - o Accommodates plants or animal settlements registered in the Red Book of the RA, or migration routes of animals.

2) Mining activities in protected areas may be carried out only in a manner defined by the RA environmental legislation.

The analysis carried out in the ESIA includes due consideration on this article, in particular archaeology and cultural heritage (see Chapters 4.19 and 6.16). For fauna and flora, the biodiversity baseline has been established for Red Book species and migratory animals (see Chapter 4.10) and the assessment of impacts (Chapter 6.11) addresses both.

[1] NI 43-101 Technical Report -Amulsar Value Engineering and Optimization, Samuel Engineering, 2015

Article 64 establishes the general terms for the preservation of nature and the environment during mining operations. This includes:

- The protection and preservation of the environment, watersheds, soil, fauna and flora; and
- The implementation of reclamation, rehabilitation and closure of mine sites.

The purpose of the Article is to ensure fulfilment of contractual obligations aimed at protecting the natural environment, as established by the Environmental Impact Assessment approval process. The baseline established for water and biodiversity (see Chapter 4.10 and Chapter 4.9) has sufficient detailed studies to establish and define potential impacts (see Chapter 6) and has been used to design the mine closure and rehabilitation design (see pMRCRP, Appendix 8.18).

Article 65 sets out the main requirements for subsoil protection, including:

- Information regarding subsoil structure, quantity, quality and other characteristics, based on data from geological exploration;
- the extraction of mineral reserves and their use, storage, maintenance and protection of the mineral deposit from fire, flood, and other factors which may deteriorate the quality, reduce industrial value, or affect operation of the deposit.

The protection of soil resources has been considered with reference to the baseline (see Chapter 4.7) to maintain the quality of the resource and reduce potential impacts in relation to the volume, quality and use of soil resources in the mine closure programme (see Chapter 6.8 and Appendix 8.18). The protection and exploitation of the mineral deposit has been defined in the TR[1] and described in Chapter 3.

Article 66 sets out the preservation of RAAs representing scientific and scientific-cultural values, and in the case of discoveries of rare geological features and mining formations, meteorites, and other objects representing special archaeological, antiquarian, scientific and scientific-cultural values, mining operations shall be discontinued in these areas and the appropriate government agency advised. The Article requires the status and preservation of these features to be established by the Government of the Republic of Armenia. The chance finds procedure (Appendix 8.17, Annex 1) provides the details of the measures to be taken in the event of a chance find during mining operations.

Article 67 establishes the sanitary protection zones around underground water resources. The baseline conditions for groundwater is defined in Chapter 4.9, including defining those resources of importance for human, ecological and agriculture needs. The potential impacts on groundwater resources are assessed in Chapter 6.10. Furthermore, the assessment of alternatives (Chapter 5) considers the site selection process adopted for project infrastructure to minimise the environmental effects of the Project on groundwater resources.

Mine closure and reclamation, which has been set out in Appendix 8.18, is also subject to the following articles for the submission of an EIA under RA legislation:

- Article 68 establishes the parties responsible for financing subsoil protection measures. This is usually the mining company except under special circumstances.
- According to Article 69 of the Mining Code, a nature and environment preservation fund should be established at the expense of fixed contributions made by mining operators. Procedure on use of funds and calculation of contribution sizes are established by a specific resolution of the Government of the Republic of Armenia. In accordance with Section 3 of this article, the proceeds from the nature and environment preservation fund will be managed by the Central Treasury and shall be used solely for the purpose of:
  a) The execution of environmental (*including reclamation*) works indicated in the mine plan, implemented by the mining operator.
  b) The execution of environmental works (*including reclamation*) indicated in the mine plan, but not implemented by the mining operator, and the liquidation of damage that is caused to the natural environment as a result of the mining operator's activities and lack of remediation. Article 69 describes the terms and conditions of the Nature and Environment preservation fund. The estimation of the costs of rehabilitation is regulated by the Ministry of Nature Protection Decree N365-N "On laying down the procedure of cost estimation and indexing of reclamation activities" dated 24th December 2012. This Decree repeals Decree N 95-N, which was approved on 22nd April 2004. This Decree is guided by point 1 of paragraph 2 of Resolution N 1079-N of the Government of the Republic of Armenia dated 23rd August 2012.
- Article 70 sets out the requirements for environmental protection during mining continuing through to the reclamation of the mine.

2.1.3 Water Code

The principal purpose of the Water Code is the protection of national water resources and the sustainability of both community and commercial water supplies. The Water Code regulates the following aspects:

- The responsibilities of state/local authorities and the public;
- The development of the national water policy and national water programme;
- The water resources register and monitoring system;
- Public access to the relevant information;
- Water use and permitting systems;
- Transboundary water resources use;
- Water quality standards; and
- The protection and State supervision of water resources.

Project Requirements

In accordance with the Water Code, the Project will require water use and discharge permits, and will need to comply with project-specific Maximum Allowable Concentrations (MACs) for the regulation of discharges including water quality (see Section 2.4.1). Discharge levels for the Project will conform to the requirements of Government Resolution N75 on "*Defining the provision of the river basin management of water quality norms, depending on the characteristics of the specific area*" and the Ministry of Nature Protection Decree N464.

2.1.4 Law on Wastes

This law regulates the collection, transportation, storage, treatment, removal, waste reduction and other activities related to waste management. The Law also considers human health and the economic and legal basis for the prevention of negative impacts to the environment. The Law defines the roles and responsibilities of the State and obligations of waste management companies.

The Law on "Waste" was amended on 22nd June, 2015. The amendments came into effect on 1st August, 2015. The law addresses the long-standing issue of whether material (that includes industrial waste heaps, barren rocks, etc.) generated during mining activity are considered as wastes by confirming that those materials, including barren rock are subject to the Law on Waste.

The Law on Waste also provides for the following:

- hazardous waste producers together with the relevant authorized agency in the field prepare and approve the passports for hazardous waste according to the procedure established by the RA Government.
- a register of waste generation, recycling and treatment facilities to which the private entrepreneurs and legal entities that generate, recycle and treat waste will be maintained by the RA Ministry of Nature Protection.
- The RA Ministry of Nature Protection shall present registration report according to the procedure and deadlines established by the RA Government.
- The RA Ministry of Nature Protection shall maintain a register of waste disposal sites (including those of active, closed and conserved ones. In order to maintain the register operators, are required to submit a register entry form to the RA Ministry of Nature Protection according to the procedure established by the RA Government. The data of waste disposal sites register will be updated annually.
- Defines rates of environmental fees levied on the disposal of wastes.

In effect, this law regulates all waste produced during production and consumption activities, except for the following:

- Radioactive waste;
- Materials drained into industrial and natural water streams; and
- Gaseous mixtures separated from emission sources of substances emitted to the atmosphere.

Although, industrial waste heaps and barren rocks generated from mining activity are subject to the Law on Waste, currently, the storage of barren rock produced from mining activities does not entail any environmental fees.

Project Requirements

In accordance with the Law on Waste, the Project will construct separate facilities designed to store each waste type. These will include separate facilities for disposal of:

- Non-hazardous waste, during construction and operational period; and
- Hazardous waste produced from the extraction and processing of gold.

The operation of these facilities would be undertaken in accordance with the Integrated Waste Management Plan (IWMP Appendix 8.13).

A separate facility has been designed for the storage of barren rock as the Barren Rock Storage Facility (BRSF), which will be managed in accordance with the Acid Rock Drainage Management Plan (ARDMP, Appendix 8.19) based on the requirements of national legislation and international best practice.

The Law provides for the classification of wastes in accordance with potential hazards. The waste classification system with respect to European Union legislation is further outlined in Section 2.2.4.

The Project will require a waste disposal permit for the management of both non-hazardous and hazardous wastes in accordance with Article 10 (d) of the Law.

2.1.5 Law on Protection of Atmospheric Air and Law on Ozone Depleting Substances

This law sets out to mitigate the potential for air pollution from chemical, physical, biological and other contamination sources.

The law on Ozone Depleting Substances regulates the production, export, import and transportation of ozone-depleting substances. It also governs Armenian performance in relation to the Vienna Convention on Ozone Layer Protection and the Montreal Protocol on Ozone Layer Depleting Substances.

Project Requirements

The Project will require an Air Emissions Permit. The Permit will outline the substances to be released and their project-specific Maximum Allowable Emissions (MAEs), in accordance with the mitigation of risks to environmental receptors and human health (see Section 2.2.4). The permit is issued following the approval of the EIAs.

The permit and the inventory of emissions will be acquired during the first year of construction.

2.1.6 Flora and Fauna Legislation

The laws on flora and fauna outline the State policies for the conservation, protection, use, regeneration and management of native species and biodiversity; including the mitigation of negative impacts from anthropogenic sources. Specific species of flora and fauna are also identified with respect to the potential for prohibition of mining activities within Article 26 of

the Mining Code.

The Law on compensation payments for damage to flora and fauna due to environmental offences sets forth the following environmental offences, and prescribes the scale of compensation payments for damages to fauna due to environmental offences:

- Use of fauna without licenses (permission);
- Unregulated use of fertilizers, and other substances that results in impacts to fauna;
- Extermination of rare and/or endangered animals, as well as those recorded in the RA Red Book, their species, habitats (egg-laying areas, nesting) and/or implementation of the actions that result in the reduction of numbers of these animals and deterioration of their habitats;
- Non-compliance with regulations on hunting and fishing as per the legislation; and
- Other legislative offences regarding the use and protection of fauna that result in impacts to fauna.

According to Article 24 of the Flora and Vegetation Act, relocation/ translocation of Red Book listed plants is authorized only in exceptional circumstances, such as use for scientific, cultural, preservation, protection and natural reproduction purposes. The prior authorization of the Ministry of Nature Protection is required. Relocation shall comply with the procedure established by the Resolution of the Government '*On approval of regulation on preservation of objects of flora and use thereof for reproduction in natural conditions*' № 781N as of 31st July, 2014. The legislation permits the relocation of a Red Listed Plant, only if done for the purpose of its preservation and scientific research.

Project Requirements

In accordance with the laws on flora and fauna, the Project will be required to identify and mitigate the risks to flora and fauna throughout all stages of the Project development, including operation, closure and post-closure (for details see Chapter 6.11 and Appendices 8.18 and 8.21). The Project will need to operate in accordance to the following conditions:

- Compliance with the legislation on 'Nature Protection';
- Maintaining the protection of ecosystems;
- Making provision for enhancement of ecosystems;
- Supporting the inspection of the environmental monitoring programme and reporting related to species diversity by government officials;

- Paying the defined fees in line with the use of the natural environment;
- Protection of plants and plant communities that have economic value and are used by others, specifically by local people;
- Protection of species which are specifically listed in the RA Red Book (activities which will lead to a reduction in numbers of Red Book species and to a deterioration of the habitat are prohibited); and
- Paying fines if the Project causes unlawful/unpermitted damage to the natural environment.

Translocation of individual plant species requires authorization from the Ministry of Nature Protection in accordance with the procedure set forth under Resolution of the Government № 781N. In that respect, Geoteam submitted an application on 23rd December, 2014 to the MNP, after which Geoteam received the translocation permit on 8th August, 2015.

2.1.7 Labour Code

The Labour Code regulates the employment of individuals including the rights, obligations and responsibilities of employers. These responsibilities include the health and safety of employees. The RA has been a member of the International Labour Organisation since 1992.

The Code includes the right of employees to join and create trade and employer unions by their own will. The legislation also covers in Article 116 the management of "mass dismissals". Under the Code, the employer must submit information about the mass dismissal to the State Employment Service, and the representatives of the employees, not less than 2 months in advance of the planned dismissal.

The maximum permissible amount of working hours, including overtime, is 48 hours per week, and 12 hours per day. According to point 4 of Section 2 of Article 138 of the Labour Code the lunch break is not included in working hours per day. Nevertheless, for the purpose of calculation of the maximum working hours per day, the lunch and rest time shall be included (Section 3 of Article 139 of Labour Code). In addition, the Labour Code is the main legislation on occupational safety and health. Chapter 23 of the Labour Code is dedicated to occupational safety and health and working conditions.

Project Requirements

The employment contracts and terms of employment of the Project's personnel will be in

accordance with the Labour Code (see also Appendix 8.4 for the HR policies published by Lydian).

2.1.8 Land Use and Resources

The Land Code defines how land use allocations (i.e. industrial) are managed. The Code covers the conversion of land from one use to another and defines the payments required for this conversion. The recipient of land use conversion payments is the community where the land is located. The Code also defines specially protected areas and designates areas where there are forests, wetlands and reserves. The Code outlines the measures required to protect land resources and defines the land rights of the State, local authorities, legal entities and citizens. Specially protected areas in the RA are designated based on their environmental, economic, social, scientific, educational, historical, cultural, health (medicinal) and recreational value.

Article 60 of the Constitution establishes that the private property may be alienated for the needs of the society and the state, only in exclusive cases of prevailing public interests in the manner prescribed by the law and with prior equivalent compensation. Article 218 of the Civil Code, in principle, contains, the same provision.

The Procedure is set forth under the Law "On Alienation of Property for the needs of the Society and the State" (Alienation Law) of 2006. Sections 1 and 2 of article 4 of the Alienation law stipulate the principles according to which exclusive, prevailing public interest is established, in addition to the objectives required to determine how private property can be expropriated. In addition, paragraph 6 of Section 2 of article 4 of the Alienation Law provides that *"The prevailing public interest can be pursued for performance of significant projects for the State or the community or inter-community levels in the sphere of development of mine exploration, mining operation…"*

The Law on Local Self Government defines the source of funding for communities and highlights the payment of rental fees as being a major component of community budgets.

The Law on 'Inspection of Use and Protection of Land' provides objectives and targets for the protection and sustainable use of land, according to its classification and designation. It governs land rights, responsibilities, use (i.e. for industry) and protection.

Project Requirements

The Project will obtain land rights (purchase and/or lease) and change to the zoning of

particular areas within the Rock Allocation Areas. Payment of conversion fees for land and payment of rental will be in accordance with the Land Code (see Chapter 6.16).

In case of the expropriation of lands for the public interest, the owner of expropriated property has the right to receive compensation. A sum equal to the market price of the expropriated property plus 15% shall be paid to the owner as equivalent compensation.

2.1.9 Law on Environmental Fees and Natural Resource Use Charges

This law is managed on a 'pay to pollute' basis and in relation to the amount of ore extracted. The Law defines two types of fees: environmental and natural resource use. The Law on the 'Rates of Environmental Fees (2006)' defines the environmental fees rates. The RA Government Decree № 864 dated December 30, 1998 defines the rates of natural resource use fees.

Project Requirements

The following activity would be subject to 'Environmental' fees:

- emitting hazardous substances into the environment (air and water basins);
- placing production and consumption wastes in the environment in a defined manner; and
- for use of goods harmful for the environment.

The use of the following natural resources would be subject to 'Natural Resource Use' fees:

- The use of and discharges to surface water and groundwater;
- The depletion of solid (and non-metallic) mineral resources, fresh, mineralised and saline groundwater;
- The use of biological resources; and
- Sale of the product acquired as a result of metallic mineral resources and their processing.

2.1.10 Law on Environmental Control

The law on "Environmental Control" i.e. monitoring and compliance, regulates issues concerning organization and conduct of supervision over the implementation of the norms of the RA Environmental legislation. It also defines legal and economic grounds for specific regulations.

The Ministry of Nature Protection carries out site inspections to ensure appropriate

environmental controls are implemented. The site inspections include the review of management commitments, procedures and performance on environmental protection.

Project Requirements

There is a defined process of reporting to meet the requirements of the Law on Environmental Control. The Company will be required to provide quarterly reports as well as an annual summary report detailing its procedures and performance. These would be based on the ESIA commitment register (see Appendix 8.5).

At the beginning of each year the Government publishes a list of the Companies to be inspected by the respective Authorities (Environmental, tax etc.).

2.1.11 Law on Lake Sevan

Lake Sevan is located some 52km north-north-west from the Project. The Vorotan, Darb and Arpa rivers, located in the vicinity of the Project, are tributaries of the River Araks, which forms the border between Armenia and Turkey and flows south-east along the Iranian border to the Caspian Sea. These rivers are therefore not part of the natural Lake Sevan catchment. However, an operational tunnel links the Arpa River at Kechut Reservoir and Lake Sevan, to support declining water levels at the latter. To further boost water inflows to Lake Sevan, a supplementary 22 km-long tunnel was constructed between the Spandaryan Reservoir and the Kechut Reservoir. The tunnel construction was completed in 2003, and the tunnel has never been commissioned or used to divert Spandaryan flows to the Kechut Reservoir. The Vorotan tunnel inlet at Spandaryan Reservoir remains closed, and as such, the Vorotan River currently remains isolated from the Lake Sevan catchment.

Lake Sevan is categorised as an 'ecosystem of strategic importance' and has specific regulations, including the Lake Sevan Law (LS Law), governing its protection.

The catchment basin of Lake Sevan as defined by Sevan Law states: The territory where all surface and ground waters flow into Lake Sevan is known to be Sevan Lake Water Catchment and also covers Kechut and Spandaryan reservoirs, which includes the basins of Arpa and Vorotan rivers up to Kechut reservoir.

According to Article 6 of LS Law, for the purposes of regulating the economic or other activities within the Lake Sevan catchment basin, three ecological zones are defined:

1) Central Zone;
2) Immediate impact zone; and

3) Non-immediate impact zone.

The central zone covers the territory of the Sevan National Park, which is aimed at recovering and maintaining the natural state of the Lake Sevan ecosystem, i.e. primarily water quality, natural and artificial landscapes and biodiversity.

The immediate impact zone of Lake Sevan is shown in Figure 2.2. The zone extends from the borders of the central zone of Lake Sevan to the watershed boundary. RA Government Resolution 143-N enacted in 2010 (changing RA Government Resolution No. 1787) re-stated in Section 13 the definition of the immediate impact zone as the area starting in the central zone and stretching up to the mountain range surrounding Lake Sevan covering an area of 364,700 hectares. The LS Law prohibits the development of mineral processing facilities in the immediate impact zone.

A subsequent RA Government Resolution № 1440 (adopted on 15th November, 2012), declared Section 13 of the second chapter of the Annex of Resolution No 143-N invalid and unenforceable. Notwithstanding this conclusion, on 10th July 2013 the National Water Council of RA made a recommendation to the Government of RA to amend resolution N 143, changing the definition of the immediate impact zone and applying a restricted zone of 3000m on each side of the Vorotan-Sevan tunnel.

On 18th July, 2013 the Government of RA passed the Resolution 749-N to modify the area defined as the "Catchment Basin" of Lake Sevan. The new resolution states that: *the immediate impact zone includes the catchment basin outside the borders of the central zone to the watershed, where any activity directly or indirectly impacts the hydrophysical, hydrochemical, hydrobiological, sanitary/toxicological, sanitary and other qualitative and quantitative indicators of Lake Sevan and the rivers flowing into the Lake. The area immediately near the Lake, the territories of the catchment basins of the Arpa River (up to the Kechut Reservoir), and the Vorotan River, the 3000 meter buffer zone on each side of the axis of the Vorotan-Sevan, as well as the Kechut and Spandaryan reservoirs all now form part of the immediate impact zone.*"

Commercial activity in the non-immediate impact zone is allowed so long as it complies with the maximum permissible discharge standards.

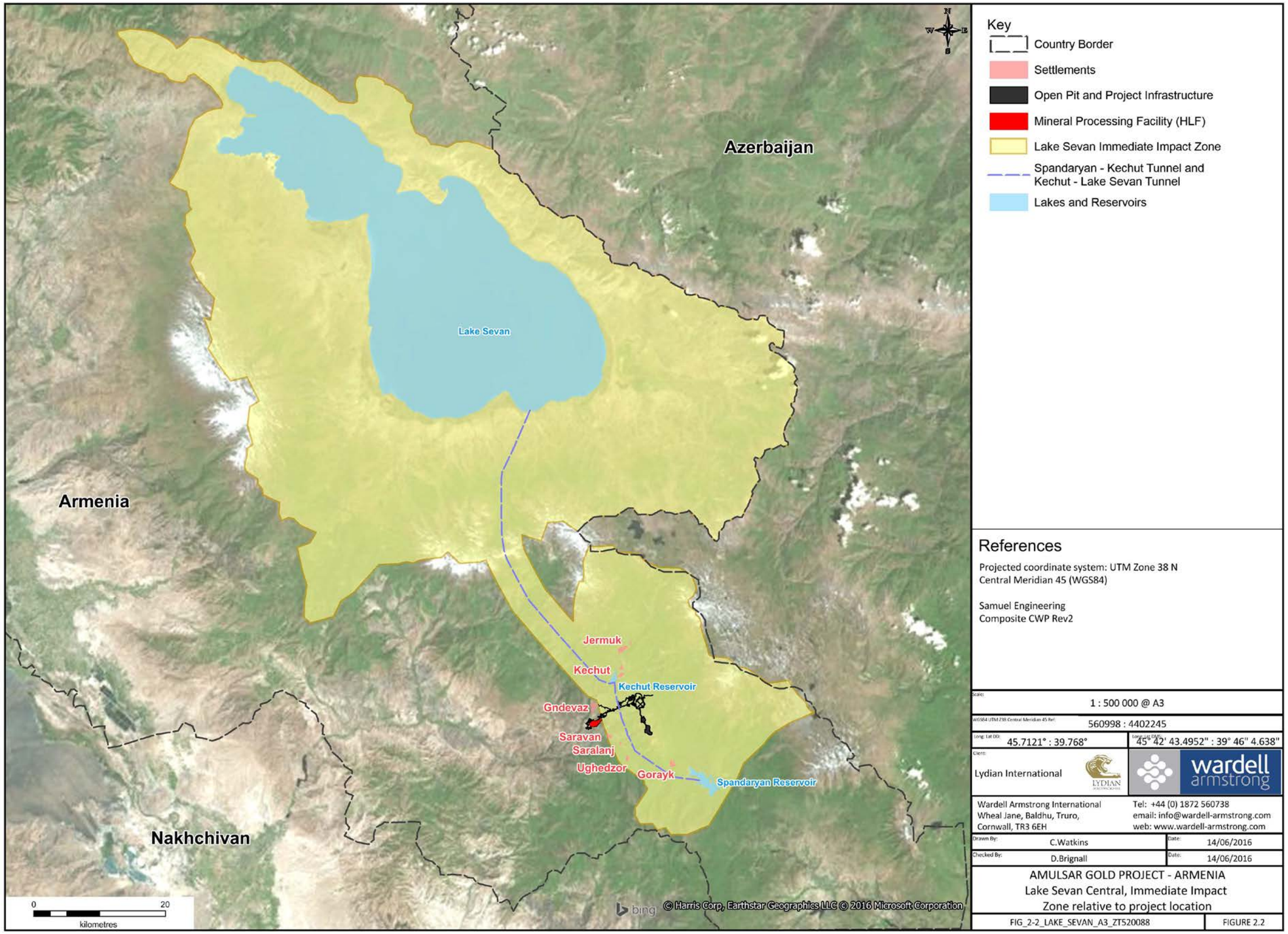

Figure 2.2 : Lake Sevan Central, Immediate and Non-Immediate Impact Zones relative to project location

Project Requirements

In order to comply with the Law on Lake Sevan, the mineral processing facilities for the Project must be located outside the catchment of the Arpa (above the Kechut Reservoir) and the Vorotan (above the Spandaryan Reservoir). The proposed Heap Leach Facility will be located in the Arpa River catchment but below the Kechut Reservoir catchment and outside of the 3000m buffer zone of the Spandaryan-Kechut tunnel, defined by Resolution 749-N (see Figure 2.2). As such, it is not located within the Lake Sevan Catchment basin and therefore not within the immediate impact zone defined by Lake Sevan Law. Further details of the sensitivity analysis completed to determine the locations for the processing of ore and storage of barren rock are considered in Chapter 5.

Under the terms of the Law, mining and crushing is allowed in the immediate impact zone.

2.1.12 Law on Preservation and Utilisation of Immovable Monuments of History and Culture and Maintenance of Historic Environment

The Law defines the purpose of archaeological excavation is to discover, register and study immovable monuments of history and art, as well as to update the list of Armenian immovable monuments of history and culture. The Agency for the Protection of Historical and Cultural Monuments of the Ministry of Culture manages the protection of tangible heritage assets.

Any individual or legal entity (whether government, NGO or private) can apply to initiate an archaeological excavation. The RA Ministry of Culture is the legal authority that grants permission to conduct archaeological excavations on lands within the territory of the Republic of Armenia. The Archaeological Commission established under the Ministry advises the Ministry on the proposed excavations.

The Ministry grants permission for a term of one calendar year which can be extended. The Law does not limit the number of extensions the Ministry may grant, and therefore the excavations may have unlimited duration for all practical purposes. Formally, the permission is granted to a specific expert that will lead the archaeological excavations.

Any excavations shall be performed by a team of scientists, architects, archaeologists, and photographers, as well as any other specialists required for the effort.

The Ministry can approve development activities including construction if a historical or cultural monument is located in the areas proposed for development. However, the Law requires that measures for the preservation of historical or cultural monuments be undertaken before any such activities commence.

The Ministry has the discretionary right to halt development and / or construction activities if the activities threaten the protection or safety of a monument. In addition, the Ministry or the local and territorial administrative agencies may, upon advice from the Commission, restrict or prohibit the operation of heavy construction equipment on a site, if the operation endangers the monument (Section 37, RA Government's Resolution N 438, of 2002).

Under the Law, any relocation and/or alteration of a historical monument, as an exceptional measure of monument preservation, is subject to approval of the RA Government or the territorial administration depending on whether such monument is of republican or local importance. Such an approval is granted upon recommendation of the Ministry.

Project Requirements

To meet these legal requirements, and in line with the requirements of the IFC PS and EBRD PRs, a cultural heritage assessment has been undertaken for the site as part of the ESIA process. Findings have been assessed to determine their significance, both at a national level and within the broader archaeological community, with preservation, avoidance and if necessary, excavation, being carried out in line with this Law (see Chapter 6.16).

The Project has also developed a Chance Finds Procedure to ensure that any sites discovered during the construction process are managed in accordance with this Law (see Annex 1 of Appendix 8.17).

2.1.13 Law on Population Protection in Emergency Situations

This outlines a series of responsibilities of RA citizens and the government to victims of major accidents. These are mainly perceived to be accidents caused by natural disasters, pandemics and weapons research activities, but some aspects and procedures will have relevance to emergency planning for the Project. These include the nature of the rights of victims to have access to information in emergency situations and for all to be made aware of protection mechanisms to both prevent and address emergency situations.

The law defines the "basis and the arrangement of population protection in emergency

situations, the rights and responsibilities of state and local authorities, enterprises, institutions, organisations, irrespective of the organizational or legal type as well as officials and the citizens in this sphere".

A high priority is to provide immediate warning and protection of the population living in the zone of possible dangerous impact. Article VI of this law sets out the principles of population protection, which includes the following item of relevance to the Project:

"c) show of complex approaches towards the reduction of emergency situation consequences, as well as to the organisation of activities providing normal operations of the system levels for the protection of population from these consequences,

d) Fulfilment of checked and tested activities, which guarantee technical security aimed at excluding the appearance of technical accidents and disasters".

The law states that, in emergency situations, enterprises, institutions and organisations must:

- Provide for the protection of their employees; and
- Support the implementation of rescue and emergency response activities and establish necessary forces to fulfil relevant activities.

Project Requirements

The Project has developed an Emergency Preparedness and Spill Response Plan that includes measures to protect employees and support the implementation of rescue and emergency response activities (see EPSRP, Appendix 8.9).

2.1.14 Noise, light and nuisance

Control of nuisance to residents from noise and lighting is through Orders from the relevant ministry. The Order N 138 as of 2002 is a Ministerial Order that regulates noise limits at residential and industrial premises. In addition, there are also Orders from the Ministry of Urban Development that regulate external lighting for residential and industrial areas (8 June 1996 Order N 82 "Construction norms for artificial and natural lighting").

Project Requirements

The assessment of the potential for nuisance related to noise and increased lighting levels associated with the Project has been established in the ESIA (see Chapter 4.3 and 4.5, baseline, and Chapter 6.5 and 6.7 for the impact assessment). Project specific criteria for noise

levels have been identified (see Section 2.4.4). Potential for nuisance from light has been assessed using guidance developed in the UK for similar projects (see Chapter 6.7).

2.1.15 Law on Environmental Impact Assessment (EIA)

The most recent Law on Environmental Impact Assessment (EIA) and Expert Examination has been adopted in 2014 (the EIA Law), which defines the implementation procedure of environmental impact assessments and state expertise opinion of environmental impact in the Republic of Armenia.

According to the EIA Law, an environmental impact assessment (assessment and expertise opinion (analysis) is required:

a. For "Guiding document" (a draft document with a potential environmental impact /policy, strategy, concept note, outline, schedule of approval and usage of natural resources, program, master plan, urban development planning and zoning document/, and
b. For the intended activity on "extraction and processing of ore" (Category A).

The EIA Law divides the projects into 3 categories: Categories A, B and C. According to Sections 4 and 5 of Article 19 of the EIA Law, the duration of the main stage of expertise (analysis) must not exceed:

a. 90 working days for guiding documents;
b. 90 working days for Category A intended activity (on extraction and processing of ore);
c. 60 working days for Category B intended activity.

The assessment is carried out in two stages:

- Preliminary stage: during this process the application for preliminary assessment is studied;
- Main stage: during this process the main assessment report is inspected.

Preliminary stage

The preliminary stage of the analysis is implemented within 30 working days from the day of submission by the initiator of an application for a preliminary assessment to the MNP through competent Authority (Ministry of Energy and Natural Resources).

At the end of this stage the MNP (within 30 working days from the submission) issues a

decision that the intended activities set forth under categories A (extraction and processing of ore) is subject to environmental impact assessment under the "Terms of Reference".

"Terms of Reference" is drafted and submitted to the initiator (the Company) by the Environmental Impact Analysis Centre at MNP (body established by the Government in accordance to the provisions set forth under EIA Act).

Afterwards, the EIA shall be carried out in accordance with the EIA Act, other legal acts and the "Terms of Reference". In case of decision that the intended activity set forth under category A (extraction and processing of ore) is subject to environmental impact assessment, the initiator or the person carrying out impact assessment on the initiator's behalf will draft a report (report on impact assessment of intended activity) in accordance with Article 18 of the EIA Act and submit for environmental impact expertise opinion (analysis).

Main stage

For expertise (analyses) the following documents need to be submitted to MNP/the Environmental Impact Analysis Centre:

- Report on impact assessment of intended activity;
- The draft of project document (Mine Plan) of intended activity;
- Documents relating to participation of participants of the process (a copy of published notification, received comments, minutes, audio and video recordings of public hearing);
- For legal entities, copies of statutes and annex; for sole proprietors, copy of state registration certificate;
- Where provided by the Republic of Armenia legislation, a copy of license or permit for the given intended activity;
- Document certifies on payment of stamp duty.

The duration of the main stage of expertise (analysis) does not exceed 60 working days from the day of submission. The duration of the main stage of expertise (analysis) may be prolonged based on a justified decision of the competent authority for not more than 30 days and not more than once.

After the examination the Environmental Impact Analysis Centre issues positive or negative expertise opinion which is approved by the MNP. During the assessment process the MNP can hire as experts relevant legal and physical entities in the process of issuing of expertise opinion (conclusion of analysis).

The intended activity cannot be implemented without a positive expertise opinion (positive conclusion of analysis).

The MNP is responsible for processing the EIA reports and the process involves four formal Public Hearings (of which two must be chaired by the MNP). The positive expertise opinion shall become invalid, if:

1) The opinion contains requirements or conditions subject to mandatory fulfilment and they are not carried out within the terms specified in the opinion;
2) The implementation of the intended activity has not started within one year after the issuance of the expertise opinion;
3) The activity is implemented with deviations from the requirements of project documents subjected to expertise and of the expertise opinion;
4) Changes, having potential environmental impact, have been carried out in project documents subjected to expertise without the knowledge of MNP;
5) In case of changes of requirements defined by laws and other legal acts regulating the environmental condition and (or) nature protection sector MNP has notified the Company on the new nature protection conditions and terms of implementation thereof and the Company has not carried out the submitted conditions within the specified terms;
6) A new nature protection legislation has been adopted; and
7) New ecological factors have emerged after handing the expertise opinion.

A summary of the parties involved in the Armenian EIA process is shown in Table 2.3.

Table 2.3: Summary of Parties Involved in a RA EIA process		
Party Involved	**Name**	**Nature of Involvement**
Authorised Body	Ministry of Nature Protection	The body of the state administration, which is responsible for managing the entire process. It issues positive or negative expertise opinions due to expertise results.
Expertise center	"Environmental Impact Expertise Center" SNCO	Subdivision of the Authorized body, which carries out the expertise, compiles and provides the "Terms of Reference", ensures the participation of its representative in public hearings, compiles and provides the expertise opinion.
Initiator	Geoteam	Legal entity intending to realise an activity subject to an EIA. The Initiator of the assessed activity bears the major part of the cost and responsibility associated with the assessment process. The Initiator designs and submits the environmental impact assessment report. For preparing the report, the Initiator can hire other legal or physical entities.
Expert	Qualified legal and physical entities involved by MNP	Legal or physical entities who have been involved in expertise process by the Authorised body for giving a professional opinion. Persons, who have participated in the development of the project document of the intended activity and (or) in the process of the impact assessment thereof, cannot be involved as experts.
Affected community	Gorayk, Saravan (including Saralanj, Ughedzor), Gndevaz, Jermuk (including Kechut)	The populace of a province (provinces), community (communities) subject to the possible impact of the intended activity on the environment. The specific list of the Affected communities is determined by the Authorized body in the "Terms of Reference" provided to the Initiator due to the results of the preliminary stage of expertise.
Interested persons	Ecological non-governmental organizations, other legal and physical entities	Legal and physical entities interested in the implementation of the intended activity
Public hearings	Locations: Jermuk, Gorayk, Gndevaz, Saravan, Yerevan	Coverage of the intended activities in mass media, discussion in meetings and surveys of public opinion.

EIA Process[2]

The New EIA Law outlines the steps of the EIA process and determines the duration of each step, which are summarised below. The definition of the Expertise opinion is "Official document on the admissibility of the intended activity with corresponding substantiations issued by the Authorized body". The Intended activities are "exploration, production, construction, exploitation, reconstruction, expansion, technical and technological rearmament, re-

[2] Fourth International Convention on Environmental Compliance and Enforcement - Development and enforcement of new Armenian Environmental Protection legislation: Problems and Solutions. Author: Victoria Ter-Nikoghosyan

profiling, conservation, transportation, liquidation, closure having possible impact on the environment."

Intended Activity EIA process. The Intended Activity EIA process includes the following stages:

- preliminary assessment,
- preliminary expertise,
- main assessment,
- main expertise.

STAGE I (PRELIMINARY ASSESSMENT)

1. For organizing a public hearing on the intended activity the Initiator applies to the head of the affected community.
   The public hearing is held with the support of the head of the affected community not earlier than the 7th working day of application to the head of the affected community.
   The public hearing is held in the affected community.
   At this stage, the community can submit written comments and proposals within 15 working days after the notification on the public hearing.
2. The protocols and audio-visual recording carrier of the public hearing as well as the summary sheet compiled by the Initiator along with the substantiations on acceptance or non-acceptance of the received suggestions and comments are attached to the preliminary assessment application. The substantiated answers to the comments of the community are included in the preliminary assessment application and are submitted to MNP for preliminary expertise.

STAGE II (PRELIMINARY EXPERTISE)

1. This stage begins the moment the Initiator submits the preliminary assessment application to MNP. The preliminary assessment application of mining utilization field is firstly submitted to MENR, which sends the application to MNP.
2. As a result of expertise of the preliminary assessment application the Expertise Centre adopts a draft decision on the intended activity being subject to impact assessment and through its official website notifies on the venue, date and time of the public hearing at least 7 working days prior to the hearing. The venue, date and time of the hearing is determined by the Expertise Centre in conjunction with the Initiator.
3. At least seven working days after notification the Expertise Centre implements a public

hearing on the draft decision adopted as a result of preliminary expertise with the support of the Initiator and the head of the affected community.

4. At this stage, the community can submit written comments and proposals within seven working days after the notification.
5. The comments and proposals received during the public hearing are taken into account in the decisions adopted by MNP and in the "Terms of Reference" provided to the Initiator. Reasonable grounds should be given if the comments and proposals are not taken into account.
6. The maximum duration of this stage is 30 working days starting from the moment MNP has received the preliminary assessment application.

STAGE III (MAIN ASSESSMENT)

1. This stage begins the moment MNP provides the Initiator with the "Terms of Reference".
2. At this stage, the Initiator, in accordance with the "Terms of Reference" provided by MNP, implements the environmental impact assessment of the intended activity.
3. Within the frames of this stage as well a public hearing should be held, for the purpose of which the Initiator once again applies to the head of the affected community.
4. The Initiator implements the public hearing with the support of the head of the affected community at least 7 working days after notifying the head of the community. The venue, date and time of the hearing is determined by the Expertise Centre in conjunction with the Initiator.
5. At this stage, the community can submit written comments and proposals within 15 working days after the notification.
6. During the public hearing the Initiator should provide duly and complete information on the intended activity and should answer all the questions raised by the community.
7. The protocols and audio-visual recording carrier of the public hearing, the substantiated answers to the comments of the community are included in the environmental impact assessment report.

STAGE IV (MAIN EXPERTISE)

1. This stage begins the moment the Initiator submits the assessment report, compiled in accordance with the "Terms of Reference", to MNP.

2. The Expertise Centre places the electronic version of the report in its official website not earlier than 20th day after the receipt of opinions on the report and within the same term sends the report to the head of the affected community for organizing a public hearing.
3. At least seven working days after notification the Expertise Centre implements a public hearing with the support of the Initiator and the head of the affected community. The venue, date and time of the hearing is determined by the Expertise Centre, in conjunction with the Initiator.
4. During the public hearing the specialists of the Expertise Centre should provide duly and complete information on the intended activity, on its environmental impact assessment, should answer all the questions raised by the community.
5. The head of the affected community and the Expertise Centre accept written comments and proposals by the community. At this stage, the community can submit written comments and proposals within 15 working days after the notification.
6. The maximum duration of this stage is 60 working days starting from the moment MNP has received the assessment report.
7. Due to the results of this stage MNP provides the final expertise opinion.

It is not possible to specify a maximum term for the whole EIA process, since the terms of the preliminary assessment and main assessment stages are not defined by the legislation. The duration of the mentioned stages depends on the Initiator and it may change in each case. As for the preliminary expertise and main expertise stages the maximum duration thereof (two of them together) is 90 working days and it may by prolonged by MNP for another 30 working days.

Project Requirements

Geoteam's Mining Permit application to obtain a Mining Right was submitted prior to these new regulations being approved and thus was assessed under the EIA Law dated November 1995.

The intended changes in the Mine Plan are subject to the aforementioned procedure of EIA. During December, 2015 Geoteam had applied to the heads of the affected communities, organized the first public hearing on December 17 in Gndevaz and had initiated the preliminary assessment stage of EIA for the changes made in the Mine Plan.

The EIA meets the requirements of the Resolutions set out below, which includes an explanation of the Project requirements:

2.1.16 Resolution on Impact Assessment Procedure of the Economic Activities on the Atmosphere

This procedure regulates the impact assessment of economic activities on the release of greenhouse gases to the atmosphere and provides a methodology for assessing impacts, used in the analysis presented in the EIA. Similar studies, undertaken for the assessment in the ESIA, and the methodologies adopted have been clearly set out in both documents.

Project Requirements

GHG emissions will be calculated in accordance with this resolution (see Chapter 6.4).

2.1.17 Resolution on Ratification of Impact Assessment Procedure of the Economic Activities on the Land Resources

This procedure regulates the impact of economic activities on land resources. The assessment of the impact on the land resources as a result of economic activity is regulated under the Resolution of the Government "On Approval of the Regulation on Assessment of the Impact on the Land Resources as a result of Economic Activity" N92-N as of June 25, 2005.

Project Requirements

The potential impacts on land resources as a result of economic activities will be calculated in accordance with this resolution (see Chapter 6.16).

2.1.18 Resolution on Impact Assessment Procedure of the Economic Activities ("Mining Activities" for Amulsar Project case) on the Water Resources

The assessment of the impact of economic activities on water resources is regulated under the Resolution of the Government "On Approval of the Regulation on Assessment of the Impact of Economic Activity on Water Resources" N1110-N as of August 14, 2003.

This procedure regulates the impact assessment of economic activities on the water resources. Impact of the economic activities on water resources depends on the quantity of polluting substances, maximal permissible levels of hazardous substances and on the duration of their impact.

Project Requirements

The Project is designed to recirculate contact water for reuse within the mine and up to year 5 of operations would operate as zero discharge. During this time, a passive treatment (wetland) system will be designed, constructed and validated to remove excess contact water draining from the BRSF toe pond. The treatment system would continue to operate for the life of the operation and through to the post close phase.

The basis for assessment of economic activities' impact on water resources is the direct and indirect influence of polluting substances, as well as the quantity of polluting substances, maximal permissible level of hazardous substances, time period of the impact, and expenditures aimed at preventing impact of hazardous substances and overuse of water resources.

Mitigation measures for the direct and indirect impact to water resources by economic activities include:

- compensation for quantitative and qualitative industrial losses caused by diminished water supply and loss of forest and soil resources;
- additional services as necessary for treatment of affected water resources;
- provision of medical services to residents that became ill as a consequence of impacts to local water quality;
- economic /financial impacts caused by reduction in work productivity (including absence from the workplace).

When potential impacts to water resources lead to inappropriateness of water for human consumption and economic water supply, there is a necessity to employ other sources of water and other technical means to provide the population with the appropriate quality of water. In this case, the economic impact is assessed by a standard formula stipulated in the regulation.

2.1.19 Resolution on Approving Common Safety Regulations during Blasting Works

This resolution classifies explosive materials based on their use and risks.

Project Requirements

All explosive materials purchased for the Project must be subjected to testing to determine if they are suitable for storage and use in the following cases:

1) During admission from the warehouse of producing companies or other organizations;
2) If the quality of the explosive is in doubt and there are doubts in good quality of blasting substances and initiation means; and
3) Before the expiration of the warranty period.

Testing of the explosive substances and initiation means is performed by the certified/licensed companies or individuals. The license shall be issued by the Ministry of Emergency Situation.

Explosives must be packaged and labelled in accordance with technical standards. Boxes, bags and envelops with explosives must have distinctive colour features in the form of shells and special lines/lining.

Drying, grinding, and sieving of explosives and filling them in the shells are permitted only under dry conditions. Therefore, these activities must be performed in special buildings provided for that purpose, as well as in open areas that have cover.

2.1.20 Resolutions and regulations on "mine closure"

1. Decree of the Ministry of Energy and Natural Resources N 249-N dated 30th December 2011 on "Requirements for prior environmental impact assessment, environmental impact assessment and mine closure plan enclosed to the application for mining rights". Annex 3 of this Decree provides the requirements, for the preparation of mine closure plans.
2. Government Resolution N 1079-N dated 23rd August 2012 on "The procedure of using the Nature and Environment preservation fund and calculating the amounts of allocations, as well as the composition of the professional committee"
3. Decree of the Ministry of Nature Protection N 365-N dated on 24th December 2012 on "*The procedure of cost estimation and indexing of reclamation works*"

This Decree regulates the estimation of closure costs and indexing of reclamation activities by mining companies.

Project Requirements

The preliminary Mine Closure Plan should be submitted to the MENR as a part of the Mining Right application; the details of this are included in Appendix 8.18. The final Mine Closure plan will be submitted to the respective authorities for EIA approval 2 years prior to the closure of the mine, however Lydian is committed to rehabilitation of disturbed areas during the mining

programme and this will form a part of the closure and aftercare planning for the Project (see Appendix 8.8, 8.18 and 8.21).

2.1.21 Resolution on Possible Economic Impact Assessment Procedure on the Environment and its Compensation

On 27th May 2015, the RA Government Resolution No. 764-N was adopted. According to the resolution, the economic impact assessment on the environment is implemented in accordance with the environmental components. The resolution also defines the economic loss calculation formula. The economic impact calculations are implemented in the main stages of environmental impact assessment. The economic impact calculations are included in the environmental impact assessment report.

Project Requirements

The economic impact on the environment will be calculated in accordance with this resolution and will be included in the environmental impact assessment report.

2.1.22 Resolution on Approving the Technical Regulation of Safe Exploitation of Open Way Processed Mineral Deposits

This technical regulation has been approved by RA Government Resolution No. 51-N dated 21st January, 2010. Till 10th March, 2015 the technical regulation defined that based on safe driving conditions the longitudinal slope of open-pit automobile roads should be till 90% towards the movement direction of the loaded cars. For the motorways, which are utilized in complicated climatic conditions (frequent fog, glaze ice) as well as for the roads, which are placed in a mountainous area with elevation of 1000 and more meters above the sea level, the maximum longitudinal slope should not exceed 70%. This resolution has been amended on 10th March, 2015 as a result of which it has been defined that in all cases the maximum longitudinal slope of open-pit automobile roads can be up to 100 %.

Project Requirements

The Company will perform the construction of the mine infrastructure with the preservation of the requirement of maximum 100% longitudinal slope of roads.

2.1.23 Resolution on defining the public notification and discussion implementation procedure

RA Government Resolution No. 1325-N dated 19th November, 2014 has defined the terms of the following:

- implementation of public notifications and public hearings during EIA;
- the requirements submitted to notification;
- public hearings protocols and has regulated other procedural issues.

Project Requirements

When subjecting the changes in the Mine Plan to EIA the public notifications and hearings will be implemented in strict compliance with this resolution.

2.1.24 Regulatory Agencies and Enforcement

The Ministry for Nature Protection oversees the collection of environmental data through various agencies and inspectorates; the Environmental Monitoring Centre is the principal institution responsible for the monitoring of air, water and soil.

The existing environmental data is assessed in accordance with the nature of the project, together with environmental 'Norms' and Regulations in order to determine the project's fees and permissible emissions concentrations.

Project Requirements

The Amulsar project has an Environmental and Social Management Plan (ESMP, see Chapter 8) that requires all baseline and operational monitoring data to be recorded using an appropriate computerised database programme. The database will be used to provide reporting that can be audited during the life of the Project.

2.1.25 Current Status of Permits

A summary of the EIA applications required for the Project development is listed in Table 2.4.

Table 2.4: Summary of EIA applications to date			
Type of Permit	**Year of approval**	**Site**	**Comment**
EIA	December 2009	Tigranes deposit	Current
C-EIA	December 2011	HLF facility, conveyors, crusher etc. for the Vorotan Valley proposed location	No longer valid as HLF site has changed
D-EIA	July 2012	Tigranes/ Artavazdes open pit and location of BRSF (at site 13)	The mine plan has now expanded to include Erato, so an additional D-EIA is required for this facility and for the new location of the BRSF (submitted in August 2014 and approved in October 2014)
C-EIA	Not approved (submitted on 12 April 2013)	Revised location of HLF (site 14)	This site was not approved due to adoption of Government Resolution 749-N and as such this C-EIA is no longer relevant
Mining Right Mining permit (EIA and Technical Safety) Rock allocation area act Mining Agreement	November 2014	Tigranes/Artavazdes and Erato open pits, BRSF, Conveyor, crushers, HLF, ADR and related mine design details	Current
Mining Right Mining permit (EIA and Technical Safety) Rock allocation area act Mining Agreement	May 2016	An application to update the existing Mining Right was made in March 2016. The Value Engineering resulted in a changed Mine Plan and thus the Mining Right had to be updated in order to reflect the changes made.	Current
EIA	April 2016	Changes in the Mine Plan and EIA	Current
Note: C refers to Conceptual and D to Detailed			

On 30th July 2013, a Working Group was established between Lydian and the Government to find a new location for the Heap Leach Facility following the adoption of the Government Resolution on 18th July, 2013, establishing the buffer zone of the Vorotan-Arpa tunnel in the Lake Sevan Immediate Impact Zone.

In October 2013, final minutes were signed with the Government on the endorsement of the proposed location at Site 28.

The list of permits to be acquired in 2015-2017 is presented in Table 2.5 and includes:

- Water use and discharge;
- Air emissions; and
- Cyanide and other hazardous chemical reagent import and storage permit.

It should be stated that under the Mining Code enacted in January 2012, the process of obtaining mining permits has significantly changed. The new code is aimed to apply a "one window" approach with the Ministry of Energy and Natural Resources.

Table 2.5: RA Permits Required for Development of Amulsar Mine

Licence/Permit Title	Application/Provision	Status	Comment
Mining Right (MR)	To permit extraction of ore	Granted	Valid until 2034.
Technical Safety	Approve that the design follows all Armenian safety regulations.	Granted	Valid until the life of the Mining Right, unless there are changes in the design of the Open Pit operations.
Rock Allocation Area Act	Change in land use from agriculture to industrial required to accommodate all mining infrastructure and obtain the construction permit	Granted	Granted until the life of the MR The Mining Agreement is signed with the Government, and the new RAA is granted on all parts of general infrastructure.
Water abstraction & discharge licence	To permit the use and the discharge of water.	Granted for exploration only	The company has a water extraction permit for exploration activities. Mining activities target acquisition date: Quarter 2, 2016
Air emission permit	To permit emissions to the Air.	Granted for exploration only	The company has air emission permit for exploration activities. Mining activities target acquisition date: Quarter 2, 2016
Explosives permit (store, transport, use)	To permit the use and the storage of explosives material.	Not granted	The Company will contract a company that will have both blasting and storage permits.

Table 2.5: RA Permits Required for Development of Amulsar Mine			
Licence/Permit Title	**Application/Provision**	**Status**	**Comment**
Cyanide and other hazardous chemical import and storage permit	To permit the import and storage of hazardous chemical reagents	Not granted	After finalisation of the design and assessment approval of National EIA, the Company will apply for the import and storage permit. The permit is granted for 1 year so application will be made 1 year prior to operations. Target acquisition date: Quarter 2/3 2017
ICMC* cyanide supplier compliance	Company is committed to become ICMI** compliant, thus the transporter and the producer should be compliant as well.	Not complete	The Company will purchase cyanide from a producer that is ICMC compliant, working alongside an ICMI Lead Auditor to ensure that viable options are in line with the ICMC.
Construction and Architecture permits	To obtain the approval that the Project design corresponds to Armenian Standards and Norms.	Not granted	Target acquisition date: Quarter 3/4, 2016
Gas and power use designs and construction expertise and permits	To permit the use of gas and power.	Not granted	Work in progress
Waste Passports	To classify wastes to the different waste types and permit the storage of the waste and its disposal.	Not granted	Work in progress
Hazardous wastes transportation, storage and placement license	Necessary for performing the transportation, storage and placement of hazardous wastes	Not granted	Work in progress
An approved project on waste generation standards and the placing limits thereof	The project should involve the physico-chemical composition, quantity, type, degree of danger (class), placement site of generated wastes and its occupied area (volume); as well as the maximum allowable standards of the harmful impact of wastes on the environment.	Not granted	Work in progress

Table 2.5: RA Permits Required for Development of Amulsar Mine			
Licence/Permit Title	**Application/Provision**	**Status**	**Comment**
Registration of waste placement site in the registry	The wastes placement sites of placed wastes with placement area more than 25 sq. m. and (or) more than 50 cubic meters must be registered in the registry through submission of registration form.	Not granted	Work in progress
Potentilla translocation permit	To allow removal of plants from the Project footprint and their transfer to a research facility.	Granted	Per RA Government Decree No. 781-N dated 31 July 2014, an application was submitted on 23 December 2014 and finally granted on 8 August 2015

Notes:
* ICMC (International Cyanide Management Code)
** ICMI (International Cyanide Management Institute)
Note 1: Permit to import and store Cyanide is valid for 1 year.
The Intended activity EIA is the last document required for environmental approval leading to the Project being fully permitted. It must be obtained prior to any construction activity.
Note 2: Construction projects of buildings, facilities, complexes and other intended activities exceeding allowable surface for construction (1,500 sq. m) are subject to EIA expertise. No separate EIA expertise is required if they are precisely provided in the Mine Plan having positive expertise opinion.
Note 3: Mine Closure Plan should be submitted as Conceptual level design to the MENR together with the Mine Plan and EIA. The Mine closure plan was approved together with the Mine plan and EIA as part of Mining Permit and Mining Right. The Mine closure plan should be updated throughout the mine life and presented to the respective Authority 2 years prior to the actual Mine closure.

2.2 International Standards and Guidelines

Leading industry practice for international projects in emerging markets is generally driven by the international financial institutions. The assessment of environmental and social risks has been based on the International Finance Corporation (IFC) Sustainability Framework including the IFC Performance Standards on Environmental and Social Sustainability (PS) (see Section 2.2.1), together with the European Bank for Reconstruction and Development (EBRD) Performance Requirements (PRs) to which all projects financed by EBRD must demonstrate compliance (see Section 2.2.2). Projects that require large scale investment from the banking sector must also demonstrate compliance with the Equator Principles (EP), which is a risk based framework for assessing potential environmental and social impacts and is based on IFC PS (see Section 2.2.5). The requirements of the Asian Development Bank (ADB) are also included in case it becomes a co-lender for the project finance.

2.2.1 International Finance Corporation (IFC) Performance Standards and Guidelines

The IFC has developed and published policies, which apply specifically to its investments in the private sector[4&5]. These include:

i) The Policy on Disclosure of Information which defines IFC's obligations to disclose information about itself and its activities; and

ii) The Policy on Social and Environmental Sustainability, which defines IFC's role and responsibility in supporting project performance in partnership with project sponsors.

The IFC PS, first published in April 2006 and updated in January 2012, are considered to be a comprehensive set of standards that are available to international finance institutions working with the private sector. The Performance Standards define a project's role and responsibilities for managing health, safety, environmental, and community issues to receive and retain IFC and/or Equator Principle-participating lender support (see Figure 2.3)

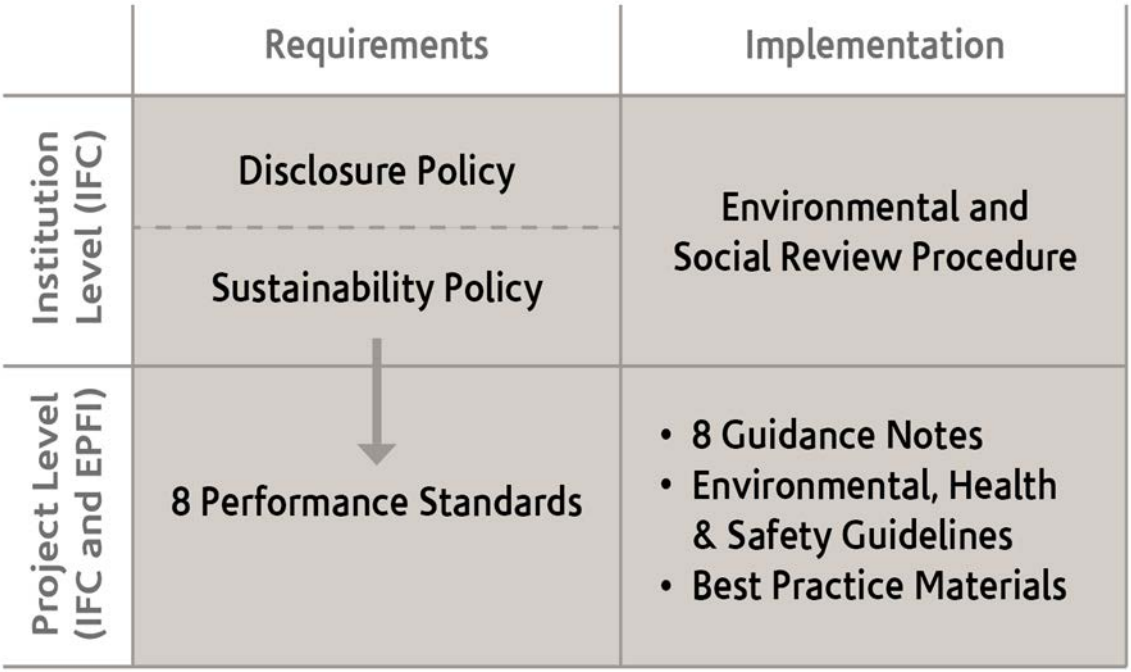

Figure 2.3: Framework for IFC, PS Standard and Guidelines

The IFC PS are supported by Guidance Notes, which give further information on the requirements of the standards. IFC PS 1 through to 6, and PS8, are relevant to the Project (PS7 on Indigenous Peoples is not applicable). Where the term 'client' is used, this refers to the owner/operator of the Project. For this Project the client is Lydian International.

The Performance Standards are summarised as follows:

- **Performance Standard 1 – Assessment and Management of Environmental and Socials Risks and Impacts:** This standard seeks to identify and assess the social and

environmental impacts of the Project, including cumulative and/or sectoral impacts. It seeks to investigate technically and financially feasible alternatives and to avoid, minimize, and manage any unavoidable adverse impacts to people, their communities, and their environment. It requires the development of a formal environmental and social policy reflecting the principles of the PS. It clarifies levels of stakeholder engagement under different circumstances and required engagement beyond affected communities. It promotes improved environmental and social performance through effective management systems and periodical performance review by senior management. Finally, it refers to private sector responsibility to respect human rights.

- **Performance Standard 2 – Labour and Working Conditions:** This standard seeks to establish, maintain, and improve the working relationship between workers and management. It mandates equal opportunity and fair treatment of workers and protects against child and/or forced labour practices. It demands that the workplace offer safe and healthy working conditions that promote the health and welfare of the employees. It establishes requirements for terms and conditions for migrant workers comparable to those of non-migrant workers. The mandate also introduces the quality requirements for workers' accommodation. Additionally, it requires ongoing monitoring of primary supply chain and introduces "safety" triggers for same.
- **Performance Standard 3 – Resource Efficiency and Pollution Prevention:** This standard is intended to minimize adverse impacts on human health and the environment by minimizing pollution and reducing emissions that contribute to climate change. It introduces a resource efficiency concept for energy, water (including unacceptable water stress), and core materials inputs. Requirements on energy efficiency and greenhouse gas measurement are important, as are those relating to the concept of "duty of care" for hazardous waste disposal. The PS refers to the 2007 World Bank EHS Guidelines, which give guidance for evaluating and selecting pollution prevention and control techniques for projects. These Guidelines contain the performance levels and measures that are normally acceptable and applicable to projects. When host country regulations differ from the levels and measures presented in the EHS Guidelines, project proponents will achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the proponent will provide full and detailed justification for any proposed alternatives. This justification will demonstrate that the choice for any alternate performance levels is consistent with the overall requirements of this PS.

- **Performance Standard 4 – Community Health, Safety, and Security:** This standard limits risks and impacts to the local communities associated with all phases of the Project, including unusual conditions. It requires that the health and safety risks be evaluated during all phases of the Project and that preventative measures be implemented to a level that is commensurate with the risk. It considers risks to communities, associated with use and/or alteration of natural resources and climate change, through an ecosystem approach. It also gives consideration for the risks posed by security arrangements. Security arrangements must be guided by the principles of proportionality, good international hiring practices, rules of conduct, training, equipping and monitoring of security personnel, and applicable law. The use of force is typically not sanctioned and a grievance process must be established to allow affected communities to express concerns about the security arrangements and acts of security personnel.
- **Performance Standard 5 – Land Acquisition and Involuntary Resettlement:** This standard seeks to avoid and minimize involuntary resettlement and to mitigate unavoidable adverse impacts related to the Project's land acquisition. This is to be achieved through compensation for loss of economic assets and economic and standard of living restoration measures. Land use issues are key to sustainability, and requirements regarding consultation are essential. Resettlement measures are intended to aim at improving economic and livelihood conditions.
- **Performance Standard 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources:** This standard calls for a balance between conservation of biodiversity and the promotion of sustainable management of natural resources. It explains in detail the definitions of, and requirements for, various types of habitat. It introduces clear requirements for biodiversity offsets. The Project site is host to certain sensitive ecosystems or habitats that are important to fauna and flora species of international concern.
- **Performance Standard 7 – Indigenous Peoples:** This standard ensures that project development respects the dignity, human rights, and cultures of indigenous peoples and avoids adverse impacts to their traditions and values. It seeks to establish and maintain ongoing relationships and to foster good faith and informed participation of indigenous peoples. It applies when projects are located on traditional or customary lands, and serves to respect and preserve cultures and practices of those indigenous peoples. It introduces the concept of Free, Prior, and Informed Consent (FPIC) and the concept's application under certain circumstances. *Based on the IFC definition of*

Indigenous Peoples, this Performance Standard is not applicable to the Amulsar Gold Mine Project.

- **Performance Standard 8 – Cultural Heritage:** This standard protects cultural heritage sites from project-related impacts and promotes the equitable sharing of benefits from the use of cultural heritage in business activities. It requires clients to allow access to cultural sites.

These Performance Standards, and all IFC reference documents, are available at http://www.ifc.org and are supported by Guidance Notes for each Performance Standard. Documents relevant to various aspects of Project implementation include, but are not limited to, IFC and World Bank Group publications, itemised in Table 2.6.

Table 2.6: IFC and World Bank Guidance Publications Relevant to the Project

Title	Date
Pollution Prevention and Abatement Handbook	1999
Assessing Private Sector Contributions to Job Creation: IFC Open Source Study	April 2012
IFC Investing in People: Sustaining Communities through Improved Business Practice	2001
Good Practice Note: Human Immunodeficiency Virus (HIV) / Acquired Immune Deficiency Syndrome (AIDS) in the Workplace	2002
Good Practice Note: Addressing Social Dimensions of Private Sector Projects	2003
Good Practice Note Number 4, Managing Retrenchment	2005
Good Practice Note: Non-Discrimination and Equal Opportunity	2006
A Guide to Biodiversity for the Private Sector, IFC	March 2006
Stakeholder Engagement: A Good Practice Handbook for Companies doing Business in Emerging Markets	2007
IFC Introduction to Health Impact Assessment	April 2009
Developing a Transparent System for Local Contracting, IFC	November 2008
Developing SMEs Through Business Linkages, IFC	November 2008
Projects and People: A Handbook for Addressing Project-Induced In-Migration, IFC	December 2009
Guide to Human Rights Impact Assessment and Management; IFC, Global Compact, International Business Leaders Forum	June 2010
Guidance Notes to Performance Standards on Environmental and Social Sustainability	January 2012

Table 2.6: IFC and World Bank Guidance Publications Relevant to the Project	
Title	**Date**
Guidance Note 1: Assessment and Management of Environmental and Social Risks and Impacts	January 2012
Guidance Note 2: Labour and Working Conditions	January 2012
Guidance Note 3: Resource Efficiency and Pollution Prevention	January 2012
Guidance Note 4: Community Health, Safety and Security	January 2012
Guidance Note 5: Land Acquisition and Involuntary Resettlement	January 2012
Guidance Note 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	January 2012
Guidance Note 8: Cultural Heritage	January 2012

World Bank EHS Guidelines

The EHS Guidelines are technical reference documents designed to assist a wide range of users (project proponents, financiers, facility managers, and other decision makers) by providing relevant industry background and technical information. This information supports actions aimed at avoiding, minimizing, and controlling environmental, health, and safety impacts during the construction, operation, and decommissioning phases of a project or facility.

The General EHS Guidelines are organized to capture common themes, which are applicable to any industry sector and project. The General EHS Guidelines and the Industry Sector EHS Guidelines are designed to be used jointly. On complex projects, like Amulsar, multiple industry-sector guidelines are applicable (see Table 2.7).

Table 2.7: EHS guidance publications relevant to the Project	
Title	**Date**
Environmental, Health, and Safety Guidelines for Waste Management Facilities	December 2007
Environmental, Health, and Safety Guidelines for Water and Sanitation	December 2007
Environmental, Health, and Safety Guidelines General Guidelines	April 2007
Environmental, Health, and Safety Guidelines, Base Metal Smelting and Refining	April 2007
Environmental, Health, and Safety Guidelines, Mining	December 2007
Environmental, Health, and Safety Guidelines for Thermal Power Plants	December 2008

The Mining EHS guidelines present mining EHS best practices, approaches, and requirements that are already adopted and in place in many countries. The Mining EHS guidelines cover

water balances, secondary containment for hazardous materials, use of cyanide that is consistent with the International Cyanide Management Code (ICMC), and a range of activities that require consideration for mining operations.

The EHS Guidelines contain the performance levels that are generally considered to be achievable in new facilities, at reasonable costs, using existing technology.

Stakeholder Engagement

Stakeholder engagement is an important part of complying with Equator Principles (Principle 5), IFC Performance Standards (PS 1) and EBRD Performance Requirements (PR1). The purpose of stakeholder engagement is to build and maintain a constructive relationship with affected communities. The nature and frequency of engagement should be in line with the risks to, and adverse impacts on, the communities. Engagement must be free of external manipulation, interference, coercion, and intimidation, and conducted on the basis of timely, relevant, understandable and accessible information.

Disclosure of relevant project information helps affected communities understand the risks, impacts and opportunities of the project. If communities may be affected by risks or adverse impacts from the project, the project proponent must provide such communities with access to information on the project. Specifically, the project proponent must disclose the purpose, nature and scale of the project, the duration of proposed project activities, and any risks to, and potential impacts on, such communities.

If affected communities may be subject to risks or adverse impacts from a project, consultation must be undertaken in a manner that affords affected communities the opportunity to express their views on project risks, potential impacts, and proposed mitigation measures. Project proponents must give due consideration to that input in project decision-making. Consultation with affected communities should begin early in the social and environmental assessment process, focus on the risks and adverse impacts and the measures and actions envisaged for their mitigation. The method of consultation must be inclusive and culturally appropriate.

For projects with potentially significant adverse impacts on affected communities, an Informed Consultation and Participation (ICP) process should be conducted, which will result in the affected communities' informed participation. ICP involves a more in-depth exchange

of views and information, and an organized and iterative consultation, leading to the client incorporating the views of the affected communities into the client's decision-making process. Communities thus have a direct influence on matters that affect them directly, such as the proposed mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

Project Requirements

The ESIA prepared for the Project seeks to demonstrate compliance with the requirements outlined in the IFC Performance Standards. In particular, this will require that informed consultation and participation be undertaken in regard to this ESIA. It will also require that the ESIA be undertaken as a holistic project, with recognition of cumulative impacts as appropriate. Impacts to society and the environment will be avoided, and where avoidance is not possible, they will be minimised through project design and mitigated through management measures. The ESIA also includes an assessment of the alternatives for Project infrastructure and processes where significant impacts could occur.

2.2.2 European Bank for Reconstruction and Development (EBRD) Performance Requirements

EBRD seeks to ensure that the projects they finance are socially and environmentally sustainable, respect the rights of affected workers and communities, and are designed and operated in compliance with applicable regulatory requirements and good international practices[3]. EBRD's Environmental and Social Policy was published in 1991 and updated in 2008 and 2014[4] and applies to policies initiated after November 2014. The Project for which EBRD invested in equity was initiated before the last revision and therefore the early 2008 policy and Performance Requirements apply. Should EBRD decide to participate as a lender to the project, the new 2014 PR will be applied. The EBRD PRs apply to investments in the project developed by the private sector. The PR consider the potential environmental and social impacts that must be assessed to demonstrate compliance. The EBRD PR provide the basis on which clients must demonstrate commitment to the sustainability of their business operations. EBRD's Environmental and Social Policy includes compliance with the PR, which outline social and environmental responsibilities and specific practices that EBRD clients must follow:

[3] http://www.ebrd.com/pages/about/principles/sustainability/requirements.shtml
[4] www.ebrd.com/documents/comms-and-bis/pdf-environmental-and-social-policy.pdf

- **Performance Requirement 1 - Environmental and Social Appraisal and Management:** The requirement defines the importance of a systematic approach to the management of the environmental and social impacts associated with project activities and operations. The PR provides guidance on the client's responsibilities for managing and monitoring environment and social issues and how these will be assessed in relation to the Bank's Policy. The PR also defines the 'area of influence' associated with the project that comprise all direct, indirect and supporting activities. In addition, the area and communities potentially impacted by project activities should be defined within the area of influence.

  The Project is categorised as category 'A', because it is a greenfield development with potentially significant and diverse environmental and social impacts. The PR identifies the measures that should be considered by clients and how these should be articulated through the ESIA reporting process.

- **Performance Requirement 2 - Labour and Working Conditions:** Similar to PS2, EBRD requires that the structure and human resources for projects are transparent, fair and provide a framework for the sustainability of the enterprise over the lifetime of the project. The requirements should be articulated through appropriate policies, working conditions and equal opportunities.

  Reporting in the ESIA has combined the requirements of PR2 with those of PS2.

- **Performance Requirement 3 - Pollution Prevention and Control:** Increased economic activity associated with projects can result in pollution to air, water and land, as well as increased consumption of finite natural resources. The role of adhering to good international practice is identified, including the principle that the potential for environmental damage should be rectified at source, and the 'polluter pays' principle. These are integral to environmental and social EU Directives, enforced through national laws by member states, and should be taken into account through the ESIA process (see Section 2.2.3). Three objectives are identified in the PR and form the rationale for the assessment methodology in this ESIA:
  - Identify project-related opportunities for energy, water and resource efficiency improvements and waste minimisation;
  - Adopt the mitigation hierarchy approach to addressing adverse impacts on

human health and the environment arising from the resource use and pollution released from the project;

- **o** Promote the reduction of project-related greenhouse gas emissions.

The individual environmental and social aspects of this PR have been considered in the relevant sections of Chapters 4 and 6.

- **Performance Requirement 4 - Community Health, Safety and Security**: Requires that adverse health and safety impacts should be avoided or mitigated to reduce the potential effects on project workers, affected communities and consumers. The ESIA has addressed through a combination of project design, mitigation and management, the objective of this PR that include the protection and promotion of a health and safety culture throughout the client organisation together with appropriate management systems that enforce appropriate measures and anticipate risks associated with project activities.

- **Performance Requirement 5 - Land Acquisition, Involuntary Resettlement and Economic Displacement:** Land acquisition and the potential for economic displacement will be a consequence of the Project, as land that is currently used for agriculture, horticulture and provides ecosystems services will be incorporated into the Project footprint. No involuntary resettlement will take place as a consequence of the Project. The objectives of the PR that have formed the basis of the analysis in the ESIA include measures to reduce impacts associated with land acquisition, and methods and measures to maintain and improve living standards of Project-affected communities.

- **Performance Requirement 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources:** Similar to PS6, the importance of maintaining core ecological functions is emphasised as these are integral to conserving and protecting ecosystem services and biodiversity potentially impacted by the Project activities. The PR identifies the use of the precautionary principle, mitigation hierarchy (including the objective of achieving no net loss, and where appropriate a net gain of biodiversity) and the promotion of good international practice throughout the Project activities.

- **Performance Requirement 7 - Indigenous Peoples:** No Indigenous Peoples, as defined by PR7, are present in the area of influence.

- **Performance Requirement 8 - Cultural Heritage:** In tandem with PS8 the importance of cultural heritage for current and future generations must be recognised. The Project should aim to protect cultural heritage and be precautionary in the management and sustainable use of these resources.

- **Performance Requirement 9 - Financial intermediaries:** There are no financial intermediaries involved in the Project.

- **Performance Requirement 10 - Information Disclosure and Stakeholder Engagement:** The importance of open and transparent communication and engagement with Project workers, affected communities and other stakeholders is identified in this PR. The approach adopted by the Project aligns with the objectives of the PR, which are:
  - Develop a systematic approach to stakeholder engagement;
  - Use of effective communication and engagement to promote improved performance with respect to environmental and social aspects of the project;
  - Promote and provide a means of ongoing effective engagement with project affected communities, that takes account of the lifecycle of the project; and
  - Effective response and management of grievances that relate to the project activities.

These objectives have formed the basis of the stakeholder engagement plan that is integral to the ESIA in terms of developing the scope of studies and disseminating information relating to Project design and alternatives.

An important additional requirement of the EBRD PR is that projects funded by the EBRD achieve the outcomes of relevant European Union (EU) Directives. This also applies to projects in countries outside of the EU. Armenia is not a member of the EU, but the Project will be bound to meet the outcomes of the relevant EU Directives. EU Directives relevant to the Project are considered in Section 2.2.3.

Project Requirement

The ESIA prepared for the Project includes the analysis required to determine compliance with the EBRD PR. Where the PR are broadly in alignment with the PS the methodology and approach to assessment has been combined. However, the EBRD requirement to meet the outcomes of relevant EU Directives will require the Project to operate in accordance with a range of EU Directives, as described in Section 2.2.3.

2.2.3 European Union (EU) Legislation

EBRD requires that the Project's design and operation, and performance on environmental, health, safety, and social indicators achieve the outcomes expected by EU legislation.

Certain laws place responsibilities on competent authorities. However, as Armenia is not an EU member state, no Armenian government ministry has the authority to enforce the EU directives. In these cases, the responsibility rests on the project proponent to meet the letter of the law and still behave as if a competent authority was present to enforce regulations.

The Mining Waste Directive (EU Directive 2006/21/EC on the Management of Waste from the Extractive Industries) &

This Directive provides for measures, procedures and guidance to prevent or reduce as far as possible any adverse effects on the environment[5]. In particular water, air, soil, fauna and flora and landscape, and any resultant risks to human health, brought about because of the management of waste from the extractive industries.

The Directive applies to waste resulting from the extraction, treatment and storage of mineral resources and the working of quarries, but which do not directly result from those operations. This particular extractive waste must be managed in specialised facilities in compliance with specific rules. Member States shall take every precaution to limit risks to public health and the environment related to the operation of extractive waste processing facilities by applying the concept of 'best available techniques'.

When a new mine waste facility is built, or an existing one modified, the following measures must be ensured[6]:

- The facility is suitably located;

[5] http://europa.eu/legislation_summaries/environment/waste_management/l28134_en.htm
[6] http://ec.europa.eu/environment/waste/mining/bat.htm

- The facility is suitably constructed;
- The facility's physical stability is ensured and soil, air and water pollution prevented;
- The facility is monitored and inspected by competent persons;
- Arrangements are made for the closure of the facility and the rehabilitation of the land; and
- Arrangements are made for the after-closure phase of the waste facility.

Project Requirements

When the operational phase of the Project commences, the BRSF will be a mine waste storage facility for the duration of the Project. The HLF operation will be a mineral processing activity during the operational phase of the Project. At mine closure the heap of spent ore will be closed in accordance with the requirements of the Directives, as at this stage it would become a mine waste storage facility.

The selection of the sites for both HLF and BRSF have undergone Site Alternatives Assessments (SAA) to ensure that they are suitably located (see Chapter 5). The SAA took account of the Directive to produce a robust assessment. Geotechnical fieldwork has been undertaken to establish the physical stability of the chosen sites. Detailed engineering design has been completed and implemented to ensure pollution is prevented. The feasibility study and ESIA are important stages leading up to that detailed design. Following detailed design, construction of the BRSF is expected to commence after the relevant permits have been granted and issued.

The pMRCRP (see Appendix 8.18) requires the preparation of an annual update to the plan as the Project commences. This process would add more detail for the closure of mine waste storage as the Project approaches closure. This plan will include the requirements for aftercare management and post-closure monitoring.

Under the Directive, waste is characterised in such a way as to guarantee the long-term physical and chemical stability of the structure of the facility and to prevent major accidents. The waste characterisation shall include, where appropriate and in accordance with the category of the waste facility, the following aspects:

1) Description of expected physical and chemical characteristics of the waste to be deposited in the short and the long term, with particular reference to its stability

under surface atmospheric/meteorological conditions, taking account of the type of mineral or minerals to be extracted and the nature of any overburden and/or gangue minerals that will be displaced in the course of the extractive operations;

2) Classification of the waste according to the relevant entry in Decision 2000/532/EC (The Decision establishes a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (notified under document number C(2000) 1147) [1], with particular regard to its hazardous characteristics);
3) Description of the chemical substances to be used during treatment of the mineral resource and their stability;
4) Description of the method of deposition; and
5) Waste transport system to be employed.

Project Requirements

The ESIA (see Chapter 3) and feasibility study describe the manner in which mine waste will be transported and deposited. A comprehensive suite of geochemical characterisation tests has been carried out on samples of the waste material (see Chapter 4.6.8).

The Directive sets criteria for determining the classification of waste facilities. A waste facility shall be classified under Category A if the following applies:

1) A failure or incorrect operation, e.g. the collapse of a heap or the bursting of a dam, could give rise to a major accident, on the basis of a risk assessment taking into account factors such as the present or future size, the location and the environmental impact of the waste facility; or
2) It contains waste classified as hazardous under Directive 91/689/EEC (as of 12 December 1991 on hazardous waste) above a certain threshold; or
3) It contains substances or preparations classified as dangerous under Directives 67/548/EEC (of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances) or 1999/45/EC (of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations) above a certain threshold.

When the operator considers that a Category A waste facility is not required, sufficient information justifying this should be presented, together with the identification of possible accident hazards including:

1) Waste characterisation in accordance with Annex II of the Directive and a statement of the estimated total quantities of extractive waste to be produced during the operational phase;
2) A description of the operation generating such waste and of any subsequent treatment to which it is subject;
3) A description of how the environment and human health may be adversely affected by the deposit of such waste and the preventive measures to be taken in order to minimise environmental impact during operation and after closure;
4) The proposed control and monitoring procedures;
5) The proposed plan for closure, including rehabilitation, after-closure procedures and monitoring;
6) Measures for the prevention of water status deterioration in accordance with Directive 2000/60/EC and for the prevention or minimisation of air and soil pollution; and
7) A survey of the condition of the land to be affected by the waste facility.

Project Requirements

The competent authority would normally be required to categorise the waste facility. There is no competent authority in this case, due to Armenia not being an EU Member State. It is likely that neither the BRSF nor the HLF would be categorised as Category A waste facilities. Although the HLF uses cyanide solution during the Project operational phase, the heap is not classified as waste during that period of time. At closure, when the HLF becomes waste, all cyanide will be neutralised and flushed from the system rendering the heap non-hazardous. This ESIA (Chapter 3 and Chapter 6, and the associated environmental management plans in Chapter 8) provides details of how generated waste will be managed, the potential environmental impacts resulting from the generation of waste, and the mitigation measures to address potential impacts.

The ARDMP (see Appendix 8.19) provides sufficient information to enable the competent authority to evaluate the operator's ability to meet the objectives of the barren rock management plan as set out under this Directive. Operators of mine waste facilities presenting a potential risk for public health or for the environment must draw up:

- A policy for preventing major accidents;
- A safety management system; and
- An internal emergency plan specifying the measures to be taken on-site in the event of an accident.

For waste facilities, the competent authority must also draw up an external emergency plan specifying the measures to be taken off site in the event of an accident. This emergency plan is intended to reduce the potential impact of major accidents on health and the environment and ensure the restoration of the environment following such an accident. It must provide for participation by the public and for account to be taken of the opinions submitted.

Project Requirements

Lydian has drawn up internal emergency and spill prevention plans. The EPSRP (Appendix 8.9) includes the policy for preventing accidents, a safety management system, and measures to be taken on site in case of an accident.

A competent authority to draw up an external emergency plan in terms of the Mine Waste Directive does not exist in Armenia. Lydian will incorporate external emergency plan measures into the Community, Health and Safety Plan (CHSP, Appendix 8.15).

Waste facility operators must provide a financial guarantee before the beginning of operations s to ensure that the Directive's obligations are covered and to ensure the existence and availability of funds to restore the site when the facility is closed. The RA also regulates the financial Guarantee. The Mining Code also regulates this (see Section 2.1.2).

Project Requirements

A financial guarantee will be provided in the form of a bond, which will be sufficient to cover the restoration and environmental protection of the activity, in the event of a default. The details of the finances are detailed in the FS[7].

Waste Framework Directive (Directive 2008/98/EC)

The Directive sets the basic concepts and definitions related to waste management (of non-mine wastes), including the definition of waste, recycling and recovery[8]. It explains when

[7] Ibid. 1, p.2.6.
[8] http://ec.europa.eu/environment/waste/framework/index.htm

waste ceases to be waste and becomes a secondary raw material (so called end-of-waste criteria), and how to distinguish between waste and by-products. The Directive sets out waste management principles; it requires that:

- Waste be managed without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants or animals;
- Without causing a nuisance through noise or odours; and
- Without adversely affecting the countryside or places of special interest.

Waste legislation and policy of the EU Member States shall apply as a priority order the following waste management hierarchy (see Figure 2.4).

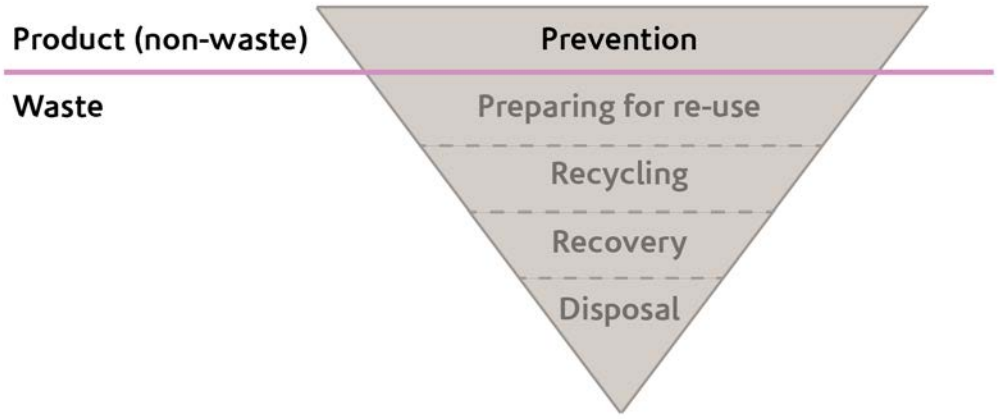

Figure 2.4: EU Waste Management Hierarchy

The Directive introduces the "polluter pays" principle and the "extended producer responsibility". It incorporates provisions on hazardous waste and waste oils and includes two new recycling and recovery targets to be achieved by 2020: 50% preparing for re-use and recycling of certain waste materials from households and other origins similar to households, and 70% preparing for re-use, recycling and other recovery of construction and demolition waste. The Directive requires that Member States adopt waste management plans and waste prevention programmes.

Project Requirements

Lydian has prepared an Integrated Waste Management Plan IWMP (Appendix 8.13) that provides guidelines for managing waste at the Project in terms of the Waste Directive, Armenian legislation, and other international and EU standards.

Water Framework Directive (Directive 2000/60/EC, 2001 (WFD))

The WFD establishes a legal framework to protect and restore clean water across Europe and ensure its long-term, sustainable use[9]. The directive establishes an innovative approach to water management based on river basins and the natural geographical and hydrological units, and sets specific deadlines for Member States to protect aquatic ecosystems. The Directive addresses inland surface waters, transitional waters, coastal waters and groundwater. It establishes several innovative principles for water management, including public participation in planning and the integration of economic approaches, including the recovery of the cost of water services.

Project Requirements

The Water Framework Directive places responsibilities on EU Member States and not on Project proponents. However, to comply with the spirit of the Directive, the Project has developed a Surface Water Management Plan (SWMP, Appendix 8.22) that includes each of the river basins intersecting the Project-affected area (namely the Arpa, Vorotan, and Darb Rivers) and is now based on an extensive database of baseline monitoring. Monitoring includes ground- and surface water resources. The Project includes engineering design and construction measures[10] to prevent deterioration of the water resources within the affected river basins.

Transparency & Accounting Directive (Directive 2013/50/EU amending Directives 2004/109/EC)

The main amendments to Directive 2004/109/EC[11] are:

- To require the disclosure of major holdings of all financial instruments that could be used to acquire economic interest in listed companies and have the same effect as holdings of equity; and
- In order to reduce administrative burden and to encourage long-term investment, the requirements to publish quarterly financial information is abolished. Member States are not allowed to impose in national legislation the requirement to publish financial information on a more frequent basis than annual and half-yearly financial reports.

[9] http://ec.europa.eu/environment/water/participation/notes_en.htm
[10] For example: low-permeability liners for the BRSF and HLF, stormwater management control measures separating mine-influenced water from clean water. See Chapter 3 for more detail.
[11] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013L0050

Changes to the Accounting Directives introduce an obligation for large extractive and logging companies to disclose, in a separate report, the payments they make to governments in the countries that they operate. Reporting would also be carried out on a project basis, where payments have been attributed to specific projects. These requirements would apply to all companies listed on EU regulated markets, even if they are not registered in the European Economic Area (EEA) and incorporated in a third country. The report should include the types of payments comparable to those disclosed under the Extractive Industries Transparency Initiative (EITI).

Project Requirements

Lydian will publish an annual financial report in terms of the requirements of the EU directives, and in line with the requirements of the EITI discussed in Section 2.2.6.

Health and Safety Directives[12]

There are a wide range of EU Directives, Guidelines and Standards relating to workplace Health and Safety. The Community Strategy on Safety and Health at Work sets out the political framework for European safety and health policy. Under this overarching strategy, a series of EU Directives were adopted focusing on specific aspects of H&S in the work place:

- Specific tasks (e.g. manual handling of loads);
- Specific hazards (e.g. exposure to dangerous substances);
- Specific workplaces and sectors (e.g. temporary work sites, extractive industries, fishing vessels);
- Specific groups of workers (e.g. pregnant women, young workers, workers with a fixed duration contract); and
- Certain work related aspects (e.g. organisation of working time).

The individual directives define how to assess these risks and, in some cases, set limit values for certain substances or reagents. The standards set in these directives are *minimum standards for the protection of workers* and Member States are allowed to maintain or establish higher levels of protection.

Project Requirements

Lydian has written an Occupational Health and Safety Plan (OHSP, Appendix 8.7) that requires adherence to Armenian standards, EU Standards and UK (European harmonised) Regulations.

[12] http://osha.europa.eu/en/legislation/index.html

Council Directive 98/59/EC - Collective Redundancy

This directive is expressly highlighted by the EBRD in Performance Requirement 2 and clients are expected to develop a management plan to address retrenchment requirements[13].

The directive requires that any employer contemplating collective redundancies must hold consultations with the workers' representatives with a view to reaching an agreement. These consultations shall, at least, cover ways and means of avoiding collective redundancies or reducing the number of workers affected, and of mitigating the consequences by recourse to accompanying social measures aimed at redeploying or retraining those workers made redundant.

The directive also specifies the information to be provided by the employer to the employees and the procedure for carrying out collective redundancies. The aim of the directive is to harmonise Member States' relevant employment laws in order to afford greater protection to workers in the event of collective redundancies.

Project Requirements

The requirements of this Directive have been incorporated into Lydian's employment procedure, so that in the event of requiring any collective dismissals, Lydian will carry out an analysis of alternatives to retrenchment. If there are no viable alternatives to retrenchment, a retrenchment plan will be developed and implemented to reduce the adverse impacts of retrenchment on workers. The retrenchment plan will be developed according to Lydian's Human Resources Policy, the Labour Code and the requirements of Council Directive 98/59/EC (Appendix 8.4).

EBRD and the Habitats, Birds and EIA Directives

EBRD is committed to promoting the adoption of EU environmental principles, practices and substantive standards in EBRD financed projects, where these can be applied at the project level, regardless of their geographic location. When host country regulations differ from EU substantive environmental standards, projects will be expected to meet whichever is more stringent. In the context of EBRD's Performance Requirement 6, three key EU directives must be considered regardless of project jurisdiction: the Habitats, Birds and EIA Directives.

13 http://europa.eu/legislation_summaries/employment_and_social_policy/employment_rights_and_work_organisation/c10808_en.htm

The Habitats Directive lists over 200 habitat types and over 1,000 species for which special conservation measures are required. Annex I lists habitat types and Annex II species for which Special Areas of Conservation (SAC) are required (under circumstances described in Annex III). Development restrictions are placed on these sites, and a 2014 amendment requires application of the mitigation hierarchy for developments in SACs. This allows the use of biodiversity offsets for significant adverse effects. Annex IV lists species in need of strict protection, and for these species prohibits all forms of deliberate killing or capture, deliberate disturbance, destruction of breeding sites or resting places, and keeping or trade. Annex V lists species for which the controlled hunting or collection is allowed. Annex VI lists prohibited means of killing, capture or transport.

The Birds Directive bans activities, which directly threaten the survival of wild birds. This includes the deliberate killing or capture of birds, collection of eggs and the destruction of nests, and the trade in live or dead birds. The regulated, sustainable hunting of some species is allowed. Annex I lists restricted-range and threatened species for which special habitat conservation measures are required (Special Protection Areas). Annex II lists species for which regulated hunting is allowed, and Annex III lists species, which are allowed to be traded legally.

The EIA Directive describes requirements for impact assessments for public and private projects which are likely to have significant effects on the environment. Annex I lists projects for which an EIA is mandatory. Annex II lists projects which Member State authorities shall decide whether an EIA is required following a screening process. The EIA Directive was amended in 2014 to, among other changes, ensure that EIAs are more understandable to the public and to oblige developers to follow the mitigation hierarchy (including the use of biodiversity offsets).

Project Requirements

The requirements of the Habitats, Birds and EIA Directives have been taken into consideration during the preparation of the ESIA. The Habitats Directive has the most significant implications for the Project, because an Annex IV species - *Ursus arctos* (Brown Bear) is present in the Project area.

2.2.4 Equator Principles[14]

The Equator Principles were initially developed in June 2003, by a group of 10 leading financial institutions to provide an approach to determine, assess and manage environmental and social risk in project financing. By June 2014, 79 financial institutions were signatories to the Equator Principles (thus referred to as Equator Principles Financial Institutions, EPFIs) to ensure that the projects that were financed were developed in a manner that is socially responsible and reflects sound environmental management practices. The Principles apply to financing for all new projects globally with total project capital costs of US$ 10 million or more. The Project falls within this category.

On 4 June 2013, the Equator Principles III (EP) were released, the key themes and areas of development including:

- An extension in the scope of the EP to Project-Related Corporate Loans and Bridge Loans;
- Changes reflecting the January 2012 update of the IFC Performance Standards (see Section 2.2.1);
- New requirements related to managing impacts on climate;
- Greater emphasis on human rights considerations in due diligence and an acknowledgment of the United Nations (UN) "Protect, Respect and Remedy" Framework for Business and Human Rights and Guiding Principles on Business and Human Rights; and
- A strengthening of reporting and transparency requirements.

The ten Equator Principles are:

- **Principle 1 – Review and Categorisation:** Obliges categorization of projects based on the magnitude of potential impacts and risks in accordance with the social and environmental screening criteria of the IFC;
- **Principle 2 – Social and Environmental Assessment:** Requires evaluation of social and environmental impacts and risks and identification of mitigation and management measures needed to reduce impacts to acceptable levels;
- **Principle 3 – Applicable Social and Environmental Standards:** Establishes the IFC Performance Standards and Environmental, Health and Safety (EHS) Guidelines to complement the host country legislation as the basis for social and environmental

[14] The Equator Principles III, 2013 at ww.equator-principles.com/index.php.ep3

performance;

- **Principle 4 – Action Plan and Management System:** Requires development of a plan for implementing mitigation measures, corrective actions and monitoring measures necessary to manage the impacts and risks identified by the Assessment;
- **Principle 5 – Consultation and Disclosure:** Obliges free, prior and informed consultation and the facilitation of informed participation for projects that may have significant adverse impacts on local communities. Requires public disclosure of the Assessment and Action Plan in a culturally appropriate manner;
- **Principle 6 – Grievance Mechanism:** Requires that an appropriate grievance process be included as part of the management system and that affected communities are informed of the process;
- **Principle 7 – Independent Review:** Calls for an independent social or environmental expert to review the Assessment, Action Plan, and consultation process to assess compliance with the Principles;
- **Principle 8 – Covenants:** Incorporates into the lending covenants compliance with host country requirements, Action Plan implementation commitments, periodic reporting of social and environmental performance, and facility decommissioning and closure, where appropriate;
- **Principle 9 – Independent Monitoring and Reporting:** Calls for an independent social and/or environmental expert to verify monitoring and reporting information; and,
- **Principle 10 – EPFI Reporting:** Commits the EPFI to publicly report its Equator Principles implementation process and experience on an annual basis.

Principle 3 expressly cross-references and incorporates the IFC's Performance Standards and the World Bank Group EHS Guidelines. Projects seeking financing are thus obliged to apply IFC Performance Standards and World Bank EHS Guidelines, including applicable industry-specific EHS Guidelines into the development process.

At the project level, which applies to both IFC and EPFI investments, the Performance

Standards[15] version January 2012 and its Guidance Notes[16], the World Bank EHS Guidelines[17], and all available best practice materials are applicable.

2.2.5 Asian Development Bank (ADB) Policies and Requirements

Safeguard Policy Statement (2009)

The Asian Development Bank has defined its Safeguard requirements under its 'Safeguard Policy Statement 2009' (SPS) which was issued in June 2009 and made effective in January 2010. It applies to all ADB-financed and/or ADB-administered sovereign and non-sovereign projects, and their components regardless of the source of financing, including investment projects funded by a loan; and/or a grant; and/or other means, such as equity and/or guarantees.

The objectives of ADB's SPS are to:

(i) avoid adverse impacts of projects on the environment and affected people, where possible;

(ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible; and

(iii) help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

The SPS sets out the policy objectives, scope and triggers, and principles for three key safeguard areas:

(i) environmental safeguards,

(ii) involuntary resettlement safeguards, and

(iii) Indigenous Peoples safeguards.

The project must comply with all relevant elements of the SPS, which sets out some specific environmental requirements including ensuring the environmental soundness and sustainability of projects and to support the integration of environmental considerations into the project decision-making process. There is a need to conduct an ESIA for the project to

[15] Performance Standards on Environmental and Social Sustainability 2012 at http://www.ifc.org/wps/wcm/connect/115482804a0255db96fbffd1a5d13d27/PS_English_2012_Full-Document.pdf?MOD=AJPERES

[16] International Finance Corporations Guidance Notes: Performance Standards on Environmental and Social Sustainability at http://www.ifc.org/wps/wcm/connect/e280ef804a0256609709ffd1a5d13d27/GN_English_2012_Full-Document.pdf?MOD=AJPERES

[17] Environmental Health and Safety General Guidelines, 2007 at http://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES

identify all potential direct, indirect, cumulative, and induced impacts and risks.

Environment Categorization

ADB uses a classification system to reflect the significance of a project's potential environmental impacts. A project's category is determined by the category of its most environmentally sensitive component, including direct, indirect, cumulative, and induced impacts in the project's area of influence. Each proposed project is scrutinized as to its type, location, scale, and sensitivity and the magnitude of its potential environmental impacts. Projects are assigned to one of the following three categories:

- Category A: Proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required.
- Category B: Proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, none or very few of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required.
- Category C: Proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

The project has been categorized as Category A.

Safeguards Requirements 1 (SR1) on Environment

The assessment process will be based on current information, including an accurate project description, and appropriate environmental and social baseline data. The environmental assessment will consider all potential impacts and risks of the project on physical, biological, socioeconomic (occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media) and physical cultural resources in an integrated way. The project's potential environmental impacts and risks will be reviewed against the requirements presented in the SPS and applicable laws and regulations of the jurisdictions in which the project operates that pertain to environmental matters, including host country obligations under international law.

Impacts and risks will be analysed in the context of the project's area of influence. This area of influence encompasses:

i. the primary project site(s) and related facilities that the borrower/client (including its contractors) develops or controls, such as power transmission corridors, pipelines, canals, tunnels, access roads, borrow pits and disposal areas, and construction camps;
ii. associated facilities that are not funded as part of the project (funding may be provided separately by the borrower/client or by third parties), and whose viability and existence depend exclusively on the project and whose goods or services are essential for successful operation of the project;
iii. areas and communities potentially affected by cumulative impacts from further planned development of the project, other sources of similar impacts in the geographical area, any existing project or condition, and other project-related developments that are realistically defined at the time the assessment is undertaken; and
iv. areas and communities potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location.

The area of influence does not include potential impacts that might occur without the project or independently of the project. Environmental impacts and risks will also be analysed for all relevant stages of the project cycle, including preconstruction, construction, operations, decommissioning, and post closure activities such as rehabilitation or restoration.

The borrower will prepare an Environmental Management Plan (EMP) that addresses the potential impacts and risks identified by the environmental assessment. The EMP will include the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. Where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the project is designed, constructed, and operated in compliance with applicable laws and regulations and meets the requirements specified in this document. The level of detail and complexity of the environmental planning documents and the priority of the identified measures and actions will be commensurate with the project's impacts and risks. Key considerations include mitigation of potential adverse

impacts to the level of "no significant harm to third parties", the polluter pays principle, the precautionary approach, and adaptive management.

If some residual impacts are likely to remain significant after mitigation, the EMP will also include appropriate compensatory measures (offsets) that aim to ensure that the project does not cause significant net degradation to the environment. Such measures may relate, for instance, to conservation of habitat and biodiversity, preservation of ambient conditions, and greenhouse gas emissions. Monetary compensation in lieu of offset is acceptable in exceptional circumstances, provided that the compensation is used to provide environmental benefits of the same nature and is commensurate with the project's residual impact.

The EMP will define expected outcomes as measurable events to the extent possible and will include performance indicators or targets that can be tracked over defined periods. It will be responsive to changes in project design, such as a major change in project location or route, or in technology, unforeseen events, and monitoring results.

Safeguards Requirements 2 (SR2) on Involuntary Resettlement

SR2 on Involuntary Resettlement aims to avoid involuntary resettlement wherever possible; to minimize involuntary resettlement by exploring project and design alternatives; to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and to improve the standards of living of the displaced poor and other vulnerable groups.

SR2 covers physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of:

I. involuntary acquisition of land, or
II. involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers them whether such losses and involuntary restrictions are full or partial, permanent or temporary.

A project is assigned an involuntary resettlement category based on significance of involuntary resettlement impacts. The involuntary resettlement impacts of an ADB-supported project are considered significant if 200 or more persons will experience major impacts, which are defined as:

i. being physically displaced from housing, or
ii. losing 10% or more of their productive assets (income generating).

Projects that entail physical, and/or economic displacement, require the preparation of resettlement plan. The outline of a resettlement plan and applicable policy principles and requirements are outlined in the Safeguard Policy Statement (SPS Appendix 2). The level of detail and comprehensiveness of the resettlement plan are commensurate with the significance of the potential impacts and risks.

Safeguards Requirements 3 (SR3) on Indigenous Peoples

SR3 on Indigenous Peoples aims to design and implement projects in a way that fosters full respect for Indigenous Peoples' identity, dignity, human rights, livelihood systems, and cultural uniqueness as defined by the Indigenous Peoples themselves so that they:

(i) receive culturally appropriate social and economic benefits,
(ii) do not suffer adverse impacts as a result of projects, and
(iii) can participate actively in projects that affect them. It is not applicable for the Amulsar Project.

Consultation, Disclosure and Grievance Mechanism

The SPS expects the Borrower to undertake meaningful consultations with project stakeholders. Meaningful consultation is a process that:

i. begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle;
ii. provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people;
iii. is undertaken in an atmosphere free of intimidation or coercion;
iv. is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and
v. enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

Consultations will be carried out in a manner commensurate with the impacts on affected communities. The consultation process and its results are to be documented and reflected in the environmental and social assessment report and the resettlement plan.

The environmental and social assessment report and related management plans are disclosed locally and on the ADB website prior to ADB's Final Investment Committee Meeting. For environment category A projects, such consultations will necessarily include consultations at the early stage of ESIA/EIA field work and when the draft ESIA report is available during project preparation, and before project appraisal by ADB. The project information document and environmental assessment reports for Category A projects are disclosed on the ADB website 120 days prior to approval of the Project by the ADB Board of Directors.

Other ADB Social Policies and Procedures

The following are other ADB approved social policies and procedures, which establish essential requirements and good practice for social soundness.

1998 Gender and Development Policy

ADB's Policy on Gender and Development (1998) adopts gender mainstreaming as a key strategy for promoting gender equity, and for ensuring that women participate in and that their needs are explicitly addressed in the decision-making process for development activities. For projects that have the potential to have substantial gender impacts, a Gender Action Plan is prepared to identify strategies to address gender concerns and the involvement of women in the design, implementation and monitoring of the project. The key elements of ADBs gender policy are:

(i) Gender sensitivity, to observe how the project affects women and men differently and to take account of their different needs and perspectives in resettlement planning;

(ii) Gender analysis, which refers to the systematic assessment of the project impact on men and women and on the economic and social relationships between them;

(iii) Gender planning, which refers to the formulation of specific strategies to bring about equal opportunities to men and women; and

(iv) Mainstreaming, to consider gender issues in all aspects of ADB operations, accompanied by efforts to encourage women's participation in the decision-making process in development activities.

ADB's Social Protection Strategy (2001)

ADB's Social Protection Strategy includes a range of approaches to manage social risk. Under this policy ADB projects are designed and implemented in accordance with national labour laws and internationally-recognized core labour standards (CLS). With respect to CLS, the Borrower is expected to take the following measures to comply with the core labour

standards for the ADB financed portion of the project:

I. Carry out its activities consistent with the intent of ensuring legally permissible equal opportunity, fair treatment and non-discrimination in relation to recruitment and hiring, compensation, working conditions and terms of employment for its workers (including prohibiting any form of discrimination against women during hiring and providing equal work for equal pay for men and women engaged by the Borrower);

II. Not restrict its workers from developing a legally permissible means of expressing their grievances and protecting their rights regarding working conditions and terms of employment:

III. Engage contractors and other providers of goods and services:
   a. who do not employ child labour or forced labour;
   b. who have appropriate management systems that will allow them to operate in a manner which is consistent with the intent of:
      - ensuring legally permissible equal opportunity and fair treatment and non-discrimination for their workers, and
      - not restricting their workers from developing a legally permissible means of expressing their grievances and protecting their rights regarding working conditions and terms of employment; and
   c. whose subcontracts contain provisions which are consistent with paragraphs (a) and (b) above.

ADB's Policy on Cooperation with Civil Society Organizations (1998)

ADB's Policy on Cooperation with Civil Society Organizations (1998) recognizes that NGOs can contribute valuable advice on the design of projects and can participate directly in implementation. To support effective cooperation with NGOs, the policy indicates that as appropriate, mechanisms to expand and strengthen interaction with NGOs in loan and technical assistance activities will be identified and existing mechanisms for consultation and dialogue with NGOs will be pursued and strengthened. Under this policy and the 2009 SPS, the Borrower is expected to carry out meaningful consultation with affected people and other concerned stakeholders, including civil society, and facilitate their informed participation.

ADB's Public Communications Policy (PCP) 2011 promotes greater transparency and accountability by enabling ADB's stakeholder, especially people affected by development activities, to better participate in the decisions that affect them. ADB-assisted activities are

expected to consider the right of people to seek, receive, and impart information and ideas, and consider feedback from its stakeholders, including affected people. Information shall be given to affected people early enough for them to provide meaningful inputs into project design and implementation[18].

2.2.6 Project category

Categorisation of projects is based on the magnitude of its potential impacts and risks in accordance with the environmental and social screening criteria of the IFC and EBRD (and potentially ADB). According to the IFC and EBRD (as well as ADB) classifications, projects fall into one of three categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts. The Category definitions are as follows:

- Category A – projects with the potential for significant adverse impacts, which are diverse, irreversible or unprecedented;
- Category B – projects with limited potential adverse impacts which are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures; and
- Category C – projects which have minimal or no potential impacts.

Project Requirements

The initial equity financing provided by IFC and EBRD was classified as Category B. The Amulsar Project financing (equity and loans) which will be sought as part of the development of the mine will likely mean the project will be classified as Category A. To support project financing, a full ESIA, prepared in accordance with the relevant local and international legislative framework and disclosure processes, is required, the findings of which are contained in this report.

2.2.7 Voluntary codes and international environmental conventions

Voluntary Principles on Security and Human Rights

The Voluntary Principles are designed to help extractive companies maintain the safety and security of operations while ensuring respect for human rights[19]. Developed in 2000, the main

[18] http://www.adb.org/sites/default/files/institutional-document/32904/files/pcp-2011.pdf
[19] Voluntary Principles on Security and Human Rights, 2000. http://voluntaryprinciples.org/principles/introduction

aspects of the Voluntary Principles include:

- **Acknowledging** that security is a fundamental need, shared by individuals, communities, businesses, and governments alike, and acknowledging the difficult security issues faced by Companies operating globally, the security and respect for human rights can and should be consistent;
- **Understanding** that governments have the primary responsibility to promote and protect human rights and observe applicable international humanitarian law, recognising and sharing the common goal of promoting respect for human rights, particularly those set forth in the Universal Declaration of Human Rights, and international humanitarian law;
- **Emphasising** the importance of safeguarding the integrity of company personnel and property, Companies recognize a commitment to act in a manner consistent with the laws of the countries within which they are present, to be mindful of the highest applicable international standards, and to promote the observance of applicable international law enforcement principles (e.g., the UN Code of Conduct for Law Enforcement Officials and the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials), particularly with regard to the use of force;
- **Taking** note of the effect that Companies' activities may have on local communities, recognising the value of engaging with civil society, host and home governments to contribute to the welfare of the local community while mitigating any potential for conflict where possible;
- **Understanding** that useful, credible information is a vital component of security and human rights, recognising the importance of sharing and understanding respective experiences regarding, inter alia, best security practices and procedures, country human rights situations, and public and private security, subject to confidentiality constraints; and
- **Acknowledging** that home governments and multilateral institutions may, on occasion, assist host governments with security sector reform, developing institutional capacities and strengthening the rule of law, recognising the important role Companies and civil society can play in supporting these efforts.

Project Requirements

An assessment of the security risks and potential for human rights abuses will be maintained. Where the Project uses private security, the Company will engage with the private security providers to ensure that their activities comply and respect human rights.

Extractive Industries Transparency Initiative (EITI)

The Extractive Industries Transparency Initiative (EITI) was established to increase transparency over payments by companies from the mining industries to governments and government-linked entities, as well as transparency over revenues received by those host country governments[20].

The EITI is being implemented in almost fifty countries and has the declared support of ninety mining and oil and gas companies at the international level. At its core is a requirement for extractive companies to publish their tax and royalty payments to host governments and for governments in parallel to publish their receipts. This enables greater scrutiny of the scale of payments generated by the extractive sector and of the ways in which the revenues are used. National implementation requires government leadership and oversight by a multi-stakeholder process in which government, civil society and business representatives work together. The EITI Standard was revised in 2013 and broadened to include transparency around a wider range of activities including, for example, exploration licences and sub-national payments. Amongst CIS countries the Kyrgyz Republic, Kazakhstan, Azerbaijan, Tajikistan and Ukraine are all participants in EITI.

The EITI Principles are:

- The prudent use of natural resource wealth should be an important engine for sustainable economic growth that contributes to sustainable development and poverty reduction, but if not managed properly, can create negative economic and social impacts.
- The management of natural resource wealth for the benefit of a country's citizens is in the domain of sovereign governments to be exercised in the interests of their national development.
- The benefits of resource extraction occur as revenue streams over many years and can be highly price dependent.
- A public understanding of government revenues and expenditure over time could help public debate and inform choice of appropriate and realistic options for sustainable development.
- Underlining the importance of transparency by governments and companies in the extractive industries and the need to enhance public financial management and accountability.

[20] Extractive Industries Transparency Initiative Standard, 2013. http://eiti.org/eiti/principles

- The achievement of greater transparency must be set in the context of respect for contracts and laws.
- Recognising the enhanced environment for domestic and foreign direct investment that financial transparency may bring.
- Believing in the principle and practice of accountability by government to all citizens for the stewardship of revenue streams and public expenditure.
- Encouraging high standards of transparency and accountability in public life, government operations and in business.
- Acknowledging that a broadly consistent and workable approach to the disclosure of payments and revenues is required.
- Payments' disclosure in a given country should involve all extractive industry companies operating in that country.
- All stakeholders have important and relevant contributions to make – including governments and their agencies, extractive industry companies, service companies, multilateral organisations, financial organisations, investors and non-governmental organisations.

Project Requirements

There is increasing interest in the possibility of Armenia becoming an EITI Implementing Country. Visits have been made to the country by representatives of the EITI International Secretariat (March 2014) and the World Bank (October 2014) and the American University in Armenia has convened a roundtable about implementation. The Government has expressed interest in Armenian participation, a country co-ordinator has been appointed and an exploratory multi-stakeholder group, in which Lydian participates, has been established. Lydian strongly supports the EITI's international objectives of increasing transparency and accountability around the governance and management of resource-based revenues and the concept of partnership, which underpins it.

Lydian believes that implementation in Armenia could help to foster greater understanding of the mining sector and to build confidence and trust between governments, civil society and mining companies given that attitudes towards mining are often unhelpfully polarised. Lydian is already publishing the payments which it makes to the Government of Armenia in the quarterly report named Management Discussions and Analysis (MD&A) filed in SEDAR for the Toronto Stock Exchange (TSX). In addition, the company recently commissioned an independent study of the likely socio-economic contribution of the Amulsar project in order

to promote greater public understanding of mining's potential contribution to the Armenian economy.

Lydian is looking at becoming a Supporting Company to publicly support the EITI and helps to promote the Standard internationally and in Armenia where it operates.

International Environmental Conventions

Table 2.8: Participation of the Republic of Armenia in International Conventions to Protect the Environment

	Name, Place and Date	Convention entered into the force	Signed by RA	Ratified by NA RA	In force for RA	Project Requirements
1.	Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar, 2 February 1971)	21.12. 1975		Acceded as assignee by the request of MFA RA 1993	1993	Not relevant
2.	UN Convention on Biological Diversity (Rio-de-Janeiro, 5 June 1992)	29.12.1993	1992	31.03.1993	14.05.1993	Taken into consideration in sections on biodiversity (Chapters 4.10 and 6.11)
	Cartagena Protocol (Montreal, 2001)			16.03.2004	29.07.2004	Not relevant
3.	UN Framework Convention on Climate Change (New York, 29 May 1992)	21.03. 1994	1992	29.03.1993	21.03.1994	Taken into consideration in sections on climate change (Chapters 4.2 and 6.4)
	Kyoto Protocol (Kyoto, 10 December 1997)	16.02.2005		26.12.2002	16.02.2005	Not relevant
4.	UNECE Convention on Long-range Transboundary Air Pollution (Geneva, 13 November 1979)	16.03.1983		14.05.1996	21.02. 1997	Not relevant (nearest border with Azerbaijan is approximately 14km from the Project)
	Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe (EMEP)	1988				Not relevant

Table 2.8: Participation of the Republic of Armenia in International Conventions to Protect the Environment						
	Name, Place and Date	**Convention entered into the force**	**Signed by RA**	**Ratified by NA RA**	**In force for RA**	**Project Requirements**
	Protocol on Heavy Metals (Aarhus, June 1998)		1998			Taken into consideration in sections on geology and (Chapters 4.6 & 7 and 6.8)
	Protocol on Persistent Organic Pollutants (Aarhus, June 1998)		1998			Not relevant
	Protocol on Abate Acidification, Eutrophication and ground-level Ozone Formation (Gothenburg, 30 November 1999)		1999			Taken into consideration in sections on air quality (Chapters 4.4 and 6.6)
5.	UNECE Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 25 February 1991)	10.09. 1997		14.05.1996	10.09. 1997	Not relevant
	Protocol on Strategic Environmental Assessment (Kiev, 21 May 2003)		2003			Not relevant
6.	UNECE Convention on Transboundary Effects of Industrial Accidents (Helsinki, 17 March 1992)	2000		14.05.1996	21.02. 1997	Not relevant
	Protocol on Civil Liability (Kiev, 21 May 2003)		2003			Not relevant
7.	UN Convention to Combat Desertification (Paris, 1994)	20.09. 1997	1994	23.06.1997	30.09. 1997	Not relevant
8.	Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel, 22 March, 1989)	05.05. 1992		26.03. 1999	01.10.1999	Taken into consideration in waste management plans (Chapter 8)
9.	Convention for the Protection of the Ozone Layer (Vienna, 22 March 1985)	22.09.1988		28.04. 1999	01.10.1999	Not relevant

Table 2.8: Participation of the Republic of Armenia in International Conventions to Protect the Environment						
	Name, Place and Date	**Convention entered into the force**	**Signed by RA**	**Ratified by NA RA**	**In force for RA**	**Project Requirements**
	Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal, 16 September 1987) • London amendment • Copenhagen amendment • Montreal amendment • Beijing amendment	01.01.1989		28.04. 1999 22.10.2003 29.09.2008	01.10.1999 26.11.2003 18.03.2009	Not relevant
	Protocol on Pollutant Release and Transfer Registers (Kiev, 21 May 2003)		2003			Taken into consideration in management plans (Chapter 8)
10.	Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemical and Pesticides in International Trade (Rotterdam, 1998)		1998	22.10.2003	26.11.2003	Taken into consideration in management plans (Chapter 8)
11.	Stockholm Convention on Persistent Organic Pollutants (Stockholm, 2001)	17.05.2004	23.05. 2001	22.10.2003	17.05.2004	Not relevant
12.	UNECE Convention on Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 17.03.1992)	06.10.1996				Not relevant
	Protocol on Water and Health (London, 17.06.1999)		1999			Not relevant
13.	Convention on the Prohibition of Military or any Hostile use of Environmental Modification Techniques (Geneva, 10 December 1976)	05.10.1978		04.12.2001	15.05.2002	Not relevant
14.	European Landscape Convention (Florence)	01.03.2004	2003	23.03.2004	01.07.2004	Not relevant

Table 2.8: Participation of the Republic of Armenia in International Conventions to Protect the Environment						
	Name, Place and Date	**Convention entered into the force**	**Signed by RA**	**Ratified by NA RA**	**In force for RA**	**Project Requirements**
15.	Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 19.09.1979)	01.01.1982	2006	26.02.2008	01.08.2008	Taken into consideration in sections on biodiversity (Chapters 4.10 and 6.11)
16.	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Washington, 0 3.03.1973-Bonn, 22.06.1979)	01.07.1975		10.04.2008	21.01.2009	Not relevant
17.	Convention concerning the protection of the World Cultural and Natural Heritage (Paris 16.11.1972)			Acceded as assignee by the request of MFA RA in 1993		Taken into consideration in sections on Cultural heritage (Chapters 4.19 and 6.16)

The RA is active internationally with regards to adopting world-wide climate change agreements. The RA has been a signatory to the Kyoto Protocols since December 2002 and is also signed up to the United Nations Framework Convention on Climate Change (UNCCC), the Copenhagen Accords and the Marrakesh Accords.

2.2.8 Industry Best Practice

Many of the IFC Performance Standards, EBRD Performance Requirements, Equator Principles and ADB Safeguards work on the premise that projects seeking funding will employ Industry Best Practice (IBP) or Best Available Technology (BAT). Although Lydian is not a signatory of UNGC (United Nations Global Compact), that requires best practice by participating Companies, these should be met as part of the company standard operating procedures and developed in the ESMP (Chapter 8).

The International Council on Mining and Metals (ICMM)

It is generally accepted that 'best practice' for mining and mineral processing is constantly evolving as new technologies are developed and gain industry experience. The Prospectors and Developers Association of Canada (PDAC) has established good practice guides for exploration which are recognised globally. These include advice relating to sustainable mining, biodiversity and conservation, and a minerals industry risk management gateway for

EHS[21]. Other relevant guidance has been established through industry experience in Australia, South Africa, Canada and the EU.

The ICMM was established in 2001 to improve sustainable development performance in the mining and metals industry. Its current members include 21 mining and metals companies as well as 33 national and regional mining associations and global commodity associations[22]. In May 2008, member companies committed to publicly report on their sustainable development performance on an annual basis, in line with standards set by the GRI. This constitutes the ICMM Sustainable Development (SD) framework that all ICMM members are required to implement. Implementation is centred on integrating the following set of ten principles and seven supporting position statements into corporate policy, as well as setting up transparent and accountable reporting practices.

The ICMM Sustainable Development Framework covers the following:

1) Implement and maintain ethical business practices and sound systems of corporate governance;
2) Integrate sustainable development considerations within the corporate decision-making process;
3) Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities.
4) Implement risk management strategies based on valid data and sound science;
5) Seek continual improvement of our health and safety performance;
6) Seek continual improvement of our environmental performance;
7) Contribute to conservation of biodiversity and integrated approaches to land use planning;
8) Facilitate and encourage responsible product design, use, re-use, recycling and disposal of our products;
9) Contribute to the social, economic and institutional development of the communities in which we operate; and
10) Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders.

Project Requirements

[21] http://www.pdac.ca/pdac/good-practices.html
[22] https://www.icmm.com/members accessed 09/04/2014

Neither Lydian nor any Armenian mining association are members of the ICMM. However, Lydian has made a commitment to sustainable development in its Environment Policy (Appendix 8.1). The Company will also adopt the guidance of the ICMM Sustainable Development Framework to attain its policy objectives.

The Cyanide Code

The International Cyanide Management Institute (ICMI) was established for the purpose of administering the 'International Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold' (the Cyanide Code) and to develop and provide information on responsible cyanide management practices and other factors related to cyanide use in the gold mining industry.

The Cyanide Code is a voluntary industry programme for the gold mining industry, to:

- Promote responsible management of cyanide used in gold mining;
- Enhance the protection of human health; and
- Reduce the potential for environmental impacts.

Companies that become signatories to the Code must have their operations audited by an independent third party to demonstrate their compliance with the Code. Audit results are made public on the ICMI website to inform stakeholders of the status of cyanide management practices at certified operations.

Project Requirements

A Cyanide Management Plan has been prepared for the Project (CMP, Appendix 8.11), in accordance with the guidance of the Code. This management plan will be used to manage all risks and activities related to the transport, delivery, handling, use, storage and disposal of cyanide and cyanide storage containers. Lydian will apply to become a signatory to the code[23] when the Project is at advanced stage of development. The Lydian Board has considered the details of the signatory requirements and the next stage will require the Project and Applicants details being notified on the Cyanide Code website.

2.2.9 Corporate Social Responsibility (CSR), Transparency and Sustainability Reporting

The most common themes that are reported on in terms of CSR and Sustainability are:

[23] www.cyanidecode.org/sites/default/files/2015SigApplication12-14.pdf

Economy, Human Rights, Labour, Governance, Environment, Consumers and Society[24].

Global Reporting Initiative

The Global Reporting Initiative (GRI) is probably the most widely accepted reporting framework. GRI was created in 1997 by the Coalition for Environmentally Responsible Economies (CERES) in partnership with the United Nations Environment Programme (UNEP). It aims to raise the level of reporting sustainability and social responsibility to be on a par with that of financial reporting. It emphasises comparability, credibility, rigour, frequency and verifiability of the information communicated. The basic GRI principles are: openness, balance, transparency and technical excellence. The current version (G3) was published in 2006 following a cycle of testing, analysis, consultation and revision, and maintains these basic principles.

The GRI Mining and Metals Supplement provides industries in the extractive sector with a tailored version of the GRI's Reporting Guidelines while still including the original guidelines. The Mining and Metals Supplement provides additional commentary and Performance Indicators to capture the most pertinent issues for the sector:

- Biodiversity management and ecosystem service;
- Community consultation;
- Indigenous peoples' rights in the exploration phase;
- Number and handling of disputes related to land;
- Resettlement of local communities;
- Closure plans of mines; and
- Programmes and process relating to materials stewardship.

Project Requirements

The ESMP (see Chapter 8) has a reporting structure in accordance with the GRI indicators and will be used in the production of sustainability reports.

National Legislation to implement the Extractive Sector Transparency Measures

In June 2013 Canada committed to establishing new mandatory reporting standards for extractive companies directed at payments made to foreign and domestic governments at all levels, including Aboriginal groups. The Government of Canada has stated that the legislation

[24] https://www.globalreporting.org/Pages/default.aspx

is intended to be similar to that being implemented in the European Union, and is anticipated to be similar to that expected to be proposed by the United States Securities and Exchange Commission by March 2015.

Given that the United States has thus far not introduced comparable legislation, Lydian will monitor whether the ultimate orientation and implementation of the Canadian legislation is modified to align with the initiative by the U.S. While the SEC introduced a rule under Section 1504 of the Dodd-Frank Act in 2012 to require disclosure of payments by resource extraction issuers, the U.S. District Court for the District of Columbia, in American Petroleum Institute v. SEC, concluded, among other things, that the SEC misinterpreted Dodd-Frank by forcing public disclosure of detailed data on payments, and failed to consider associated competitive effects. Following the ruling the SEC has taken no further regulatory action, although the SEC has indicated that it would issue a new proposal under Section 1504 by March 2015. Based on earlier indications from the Government of Canada, implementation on or before June 2015 is possible.

The proposed legislation would require affected entities to report any payments made in relation to the commercial development of oil, gas or minerals during a financial year that exceed either the amount prescribed by regulation for a particular category (and presently unknown pending the creation of such regulations). Or, alternatively, if no amount is prescribed, $100,000, to all levels of government, domestically and internationally (including Aboriginal entities), of the following nature and whether monetary or “in kind”:

- Taxes, other than consumption taxes and personal income taxes;
- Royalties;
- Fees, including rental fees, entry fees and regulatory charges as well as fees or other consideration for licences, permits or concessions;
- Production entitlements;
- Bonuses, including signature, discovery and production bonuses;
- Dividends, other than dividends paid as ordinary shareholders;
- Infrastructure improvements payments; or
- As otherwise prescribed.

Reporting of payments is anticipated to be done on a project-level basis, the parameters of which are likely to be defined by a company according to its particular industry and business

context. All information in reports would have to be attested as to being true, accurate and complete by an independent auditor or accountant. It is likely that a common reporting template will ultimately be developed for use in Canada, the European Union and the United States.

2.3 Lydian Company Policy Framework

2.3.1 The Code of Conduct

The Code of Conduct provides guidance in translating the Company's core values into how the Company, its personnel and its Business Partners conduct themselves in the workplace, marketplace, and in the environment and communities where the Company operates. The core values include:

- Honest and ethical conduct in everything we do;
- A workplace where all individuals are treated with respect and dignity, free from discrimination, harassment and violence;
- Compliance with applicable laws, rules and regulations;
- Avoidance and ethical handling of conflicts of interest;
- Understandable, accurate and timely public disclosure of information; and
- Mutual respect and understanding in partnering for sustainable development.

Figure 2.5 provides a graphical representation of the Lydian governance framework. A brief summary of each of the eight corporate policies is then provided below.

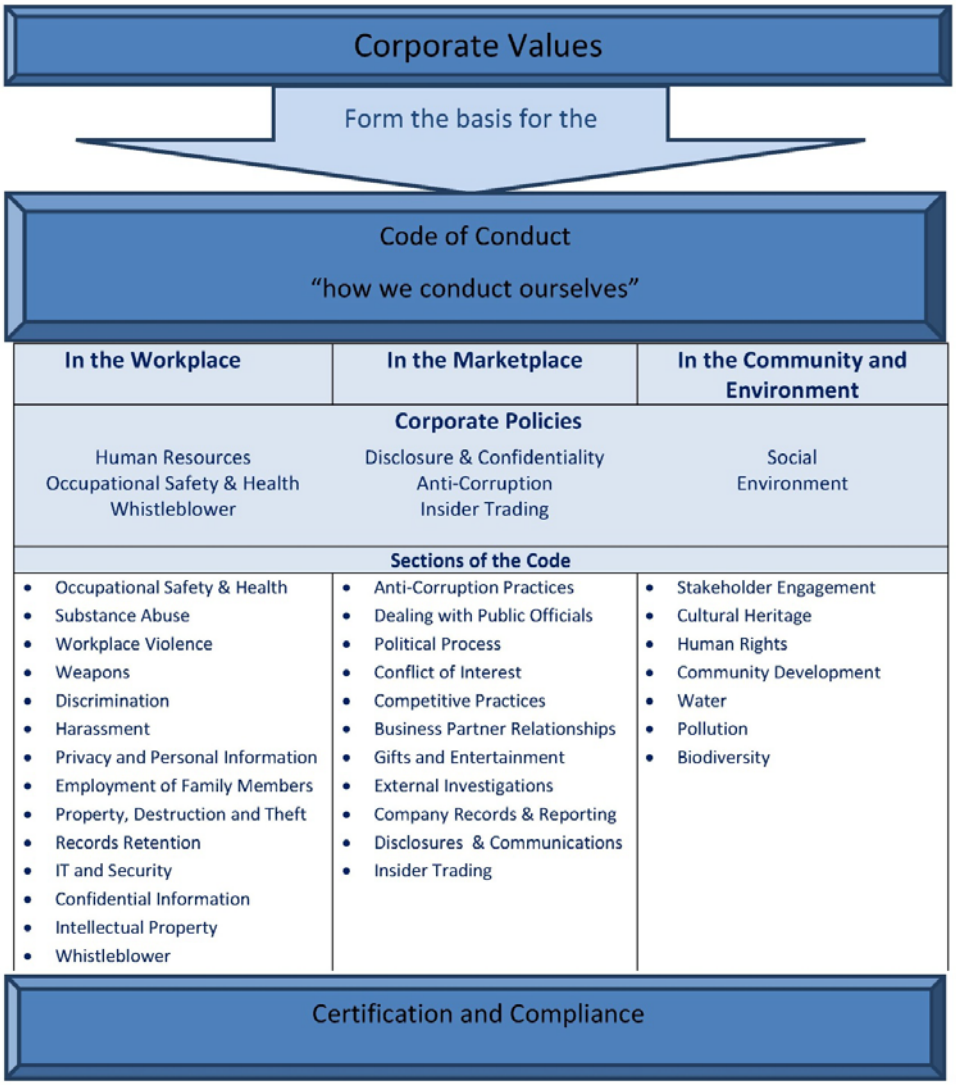

Figure 2.5: Governance Framework

2.3.2 Environment Policy

Lydian's Environment Policy is 'designed for setting and meeting high standards as a prerequisite for carrying out business in a sustainable society and the protection of life, health and the environment' (see Appendix 8.1). The local recruitment procedure supports this policy.

2.3.3 Social Policy

The Company implements a social management program for its operations, which seeks to minimise and mitigate any adverse social impacts generated by its activities, and to enhance beneficial social impacts where possible, in accordance with internationally recognised business best practice.

Lydian's Social Policy states that it seeks relationships, which demonstrate mutual respect and understanding, active partnership, and long-term commitment. Lydian aims for sustainable development outcomes through its activities (see Appendix 8.2).

2.3.4 Human Resources Policy

Lydian recognizes that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers. We recognise that our workforce is a valuable asset, and good worker-management relationships are key ingredients in the sustainability of the Company (see Appendix 8.4a).

Lydian is committed to employ locally where possible. This is supported through the provision of training for local applicants. Employees will be selected based on their performance, professional behaviour and ethics and approach to safety. A local recruitment procedure has been defined for Geoteam and gives priority for recruitment and workforce development in the region, starting from the Project Affected Area (see Appendix 8.4a).

Lydian supports human rights consistent with the United Nations Declarations on Human Rights and the Voluntary Principles on Security and Human Rights.

2.3.5 Occupational Health and Safety Policy

Lydian aims to achieve zero harm through effective management of health and safety through the implementation of programs and metrics.

Lydian requires Company Personnel to recognize their own responsibility regarding occupational health and safety, and to comply with all health and safety requirements relevant to their activities (see Appendix 8.3)

Our commitment includes managing disease-related risks, including HIV/AIDS, through training, counselling and non-discriminatory practices. A specific HIV/AIDS policy has been developed for Geoteam and is included in Appendix 8.4b.

2.3.6 Whistle Blower Policy

The Company is committed to maintaining high standards of integrity and accountability in its business affairs while enhancing shareholder value. The Whistle Blower Policy provides a vehicle for Company Personnel and others to disclose good faith concerns regarding Financial Matters and violations of the Code of Conduct (see Appendix 8.4c).

2.3.7 Anti-Corruption Policy

Dealings with Public Officials by Lydian or any Company Personnel are to be conducted in a manner that will not compromise the integrity or damage the reputation of any government, Public Official or the Company. Unless otherwise specified in the Company's Anti-Corruption Policy, direct or indirect participation in corrupt, fraudulent, coercive, collusive or obstructionist practices are prohibited. Furthermore, facilitation payments are not condoned (See Appendix 8.4d).

2.3.8 Insider Trading

Company Personnel and others are prohibited from trading in the Company's Securities if they have knowledge of undisclosed material information. Undisclosed material information means any information, event or circumstance (including a change in previous information or facts) relating to the business and affairs of the Company that would have a reasonable likelihood to have a significant effect on the market price of the Company's Securities or be considered important to an investor in making an investment decision regarding the purchase or sale of the Company's Securities (See Appendix 8.4e)

2.3.9 Disclosure and Confidentiality

The purpose of this Policy is to establish standards for confidentiality of material information before public disclosure and practices to be employed in making public disclosures and subsequent communications. Application of this Policy is intended to ensure compliance with applicable laws and regulations, establish equitable disclosure standards, and foster delivery of accurate, timely, and consistent information to the Company's stakeholders.

2.3.10 HSEC Board Committee

Lydian's Health, Safety Environmental and Communities Committee is responsible for assisting the Board in fulfilling its oversight responsibilities in relation to, amongst other things:

- The establishment and review of Lydian's Health, Safety Environmental and Social (HSES) policies;
- Management of the implementation of compliance systems to be included in the HSES Management System;
- Monitoring the effectiveness of Lydian's policies that relate to health, safety, environment and social issues together with the systems and monitoring processes

required for effective management;

- Frequency of reporting;
- Ensuring compliance with local and international regulations;
- Periodically reviewing training programmes and the Geoteam Emergency Response /Medical Evacuation arrangement and plans;
- Receiving audit results and updates from management with respect to Geoteam's HSES performance;
- Reviewing the annual budget for HSES operations;
- Reviewing HSES annual information and reports that need to be disclosed publicly; reviewing and investigating deaths or serious injuries to employees, contractors, or suppliers, whether on site or elsewhere while connected to company business, in order to establish cause and remedial action; and
- Any additional matters delegated to the Health and Safety Committee by the Board.

The Committee will have regard to PS4 and PR4 for the aims and objectives of the Board, in particular the interaction between Project health and safety requirements and the mitigation measures identified in the ESIA that protect Project affected communities. A suitably qualified board member will have responsibility for the community aspects of health and safety (see also Chapter 8, for further details on the HSES policy, aims and objectives).

2.4 Project Compliance Targets and Assessment Criteria

The Project has committed to complying with the relevant international and/or national standards for environmental releases, whichever is more stringent. Compliance will be achieved through appropriate design, combined with mitigation measures targeted at control and abatement of emissions. This section presents the specific regulatory compliance criteria for the various potential environmental release categories that could result from Project implementation; the section also considers the construction, operations, closure and post-closure phases of the Project.

In cases where existing naturally occurring baseline conditions have been documented (see Chapter 4, for more details) and are known to exceed the relevant compliance criteria, the case has been made to apply Project-specific compliance criteria that are protective of human health and the environment but make allowance for the baseline conditions that are specific to the Project.

2.4.1 Water Quality

The Project will have discharges to surface water. These discharges are expected to include:

- Treated domestic wastewater;
- Treated runoff and seepage from the BRSF; and
- Non-contact water from small settling ponds (which receive flow from non-contact areas of the site such as undisturbed natural slopes, haul roads etc.).

Applicable compliance criteria for each of these expected discharge sources and for receiving waters are detailed in the following sections.

Treated Domestic Wastewater

There are no specific nationally-applicable guidelines in Armenia for treated domestic wastewater discharge to surface waters. EHS guidelines for treated domestic wastewater discharge are available from the IFC. These guidelines will be adopted as the compliance criteria for the Project and are detailed in Table 2.9. The compliance point for the treated domestic wastewater discharge is 500 m from the discharge outlet.

Table 2.9: Indicative Values for Treated Sanitary Sewerage Discharges IFC General EHS Guidelines

Pollutants	Units	Guideline Value
pH	pH	6 – 9
BOD	mg/l	30
COD	mg/l	125
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Oil and grease	mg/l	10
Total suspended solids	mg/l	50
Total coliform bacteria	MPN[b] /100 ml	400[a]

Notes:
a) Not applicable to centralized, municipal, wastewater treatment systems, which are included in EHS Guidelines for Water and Sanitation.
b) MPN = Most Probable Number.

Industrial Effluent

For industrial effluent from mining activities, there is no RA standard for the discharge itself. However, guidelines are available from the IFC regarding mine effluent quality, and these are shown on Table 2.10. These will be modified for the Amulsar Project, as detailed in Table 2.11, to allow for preservation of the quality status of receiving waters.

Table 2.10: General EHS Guideline for Mine Effluent	
Determinant	**IFC Effluent Guidelines for Mining (µg/l)**
pH (SU)	6 - 9
Temperature °C	<3 differential
Biochemical Oxygen Demand (BOD)	50mg/l
Chemical Oxygen Demand (COD)	150mg/l
Oil and Grease	10
Total Suspended Solids (TSS)	50 mg/l
Arsenic	100
Phenols	500
Cadmium	50
Copper	300
Chromium (VI)	100
Cyanide	1000
Cyanide Free	100
Cyanide WAD	500
Iron (total)	2000
Lead	200
Mercury	2
Nickel	500
Zinc	500

Receiving Waters

RA Government Resolution N75 adopted in January 2011 specifies the requirements for river water quality management: it defines specific surface water quality criteria in five categories for the 14 major river basins of Armenia, including the Vorotan and Arpa catchments. The Ministry of Nature Protection Decree N464 defines the current methodology aimed at calculating discharge levels, which will be determined with detailed application in accordance with the above-referenced Resolution and Decree.

The proposed compliance targets are set out in Table 2.11, cross-referenced with the source of the proposed target. The following standards were reviewed: RA river category standards (Category II standards apply) for the Vorotan and Arpa rivers; IFC mine effluent guidelines; and European Community Surface Water Standards (A1 waters).

Table 2.11 only presents those contaminants considered relevant to the operational activities required for the Amulsar Project. Resolution N75 includes additional limits that do not apply to the Project.

Table 2.11: Water Quality Standards and Compliance Criteria				
Quality indicators	**Arpa Catchment**	**Vorotan Catchment**	**Unit**	**Source**
Ammonium ion	0.4	0.4	mg N/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Chloride ion	6.88	8	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Nitrate ion	2.5	2.5	mg N/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Nitrite ion	0.06	0.06	mg N/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Phosphate ion	0.1	0.1	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Phosphorus, Total	0.2	0.2	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Sulphate ion	16.04	17.02	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Total inorganic nitrogen	4	4	mg N/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Total mineralization	131.88	110	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Aluminium	144	284	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Antimony, total	0.28	0.5	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Arsenic, total	20	20	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Barium	28	12	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Beryllium	0.038	0.054	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Boron	450	450	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Cadmium, total	1.014	1.01	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Calcium	100	100	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Chromium, total	11	10.5	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Cobalt, total	0.36	0.28	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Copper, total	21	22	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Cyanide, total	1	1	mg/l	IFC Mining Effluent Guideline Value
Cyanide, free	0.1	0.1	mg/l	IFC Mining Effluent Guideline Value
Cyanide, WAD	0.5	0.5	mg/l	IFC Mining Effluent Guideline Value

Table 2.11: Water Quality Standards and Compliance Criteria				
Quality indicators	**Arpa Catchment**	**Vorotan Catchment**	**Unit**	**Source**
Iron, total	0.072	0.16	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Lead, total	10.14	10.14	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Lithium	3	2	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Magnesium	50	50	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Manganese, total	12	8	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Mercury (total)	0.3	0.3	µg/l	RA Decree N75-N Appendix 2, National standards
Molybdenum, total	0.82	2	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Nickel, total	10.34	10.45	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Potassium	3.12	4.46	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Selenium, total	20	20	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Silicate ion	25	23.64	mg Si/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Sodium	10	8.46	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Tin, total	0.08	0.16	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Vanadium, total	10	16	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Zinc, total	100	100	µg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Oil products	0.1	0.1	µg/l	RA Decree N75-N Appendix 2, National standards
Phenols	0.005	0.005	µg/l	RA Decree N75-N Appendix 2, National standards
BOD5	5	5	mgo_2 /l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
COD-Cr	25	25	mgo_2 /l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Colour	<5 (natural)	<5 (natural)	degree	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Dissolved oxygen	>6	>6	mgO_2 /l	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Electroconductivity	215.62	162	µS/cm	RA Decree N75-N Basin specific standards, Appendices 3 - 25
Hardness	10	10	mg-equ/l $CaCO_3$	RA Decree N75-N Basin specific standards, Appendices 3 - 25

Table 2.11: Water Quality Standards and Compliance Criteria				
Quality indicators	**Arpa Catchment**	**Vorotan Catchment**	**Unit**	**Source**
Odour (20°C and 60°C)	<2 (natural)	<2 (natural)	points	RA Decree N75-N Basin specific standards, Appendices 3 - 25
pH	6.5-9.0	6.5-9.0		RA Decree N75-N Appendix 2, National standards
Suspended particles	6.8	5.5	mg/l	RA Decree N75-N Basin specific standards, Appendices 3 - 25

A complete comparative listing of the various guidelines and standards reviewed, and their Maximum Allowable Concentrations, has been considered in Chapter 4.9 and 4.10.

2.4.2 Air Quality

Ambient Air Standards

In Armenia the Law on Atmospheric Air Protection of 1994, last amended in 2010, and the National Environmental Programme of 2008, regulate atmospheric emissions. As described in Section 2.1.5, Maximum Allowable Emissions are established for the Project based on actual emissions, and guideline emission limits are not provided by Armenian legislation.

However, Armenia has also adopted air quality standards for all pollutants covered by the Directive 2008/50/EC and for several pollutants covered by the Directive 2004/107/EC.

The IFC Environmental, Health and Safety Guidelines (2007) provide compliance targets for air quality parameters to be monitored at or immediately outside the Project-affected area. Critical levels for the protection of vegetation are not included within the IFC Guidelines, but EU Directive 2008/50/EC provides these. The Project will adopt these air quality parameters and critical levels, recorded in Table 2.12, as relevant compliance criteria.

Table 2.12: Ambient Air Quality Guidelines for Human Health (from the WHO / IFC EHS Guidelines) and Critical Levels for Vegetation (from EU Directive 2008/50/EC)

Pollutant	Receptor	Averaging Period	Guideline Value for human health in µg/m³	Critical Levels for vegetation in µg/m³
Sulphur Dioxide (SO_2)	Human	24 Hour	20	N/A
	Vegetation	Calendar Year and Winter (1 October to 31 March)	N/A	20
Oxides of Nitrogen (NO_x)	Vegetation	Calendar Year	N/A	30
Nitrogen Dioxide (NO_2)	Human	Calendar Year	40	N/A
Particulate Matter PM_{10}	Human	24-hour	50	N/A
Particulate Matter $PM_{2.5}$	Human	24-hour	25	N/A
Ozone	Human	N/A	N/A	N/A

Notes:
The 24 hour referencing period, for human health criteria, has been selected for Compliance Target that for the Project will be based on the Guideline Values and monitored biannually.

Workplace Exposure to Substances

The IFC identifies that levels of contaminant dusts, vapours and gases in the work environment should be maintained at concentrations below those recommended by the American Conference of Governmental Industrial Hygienists (ACGIH). For design purposes, the inhalation of substances is considered the most significant risk to human health. A wide range of substances are covered by ACGIH and these have been adopted into EU regulations as 'Workplace Exposure Limits'.

Workplace Exposure Limits are expressed as Threshold Limit Values for an 8 hour day / 40 hour week, as follows:

- Respirable particles: 3 mg/m^3
- Inhalable particles: 10 mg/m^3

These threshold limit values will be adopted as compliance criteria for the Project.

Point Sources

- NOx: 320 mg/m^3
- Dry gas, excess O_2 content: 3%

Dust

There are no published limits for control of nuisance dust, through deposition, partly due to natural variability associated with seasonal weather conditions. Compliance monitoring will depend on the type of gauge used and the approach to be adopted has been defined in the Air Quality, Noise and Vibration Management Plan (AQNVMP, Appendix 8.14).

2.4.3 Soils and Land Use

To establish appropriate compliance targets, the baseline values in soils within the Project Area have been compared to the RA's MACs and other relevant standards. The Project will adopt the compliance criteria shown in Table 2.13.

Table 2.13: Compliance Targets for Soil within Project Affected Area (mg/kg)								
Substance(s)	MAC[a]	CCME (1999), Agricultural Soils[d]	Baseline Conditions				Compliance criteria[e] (mg/kg)	
			Maximum Concentration (All Data)[b]	Open Pit (OP)[c]	Barren Rock Storage Facility (BRSF)[c]	Heap Leach Facility (HLF)[c]		
				Max Concentration	Max Concentration	Max Concentration		
Arsenic	2	12	161	161	20.5	13.4	OP BRSF HLF	190 23.6 15.4
Cobalt	5	40	38	18.3	31	30.8		40
Copper	3	63	97.4	55.6	79	42.2	OP BRSF HLF	63 93 63
Mercury	2.1	6.6	0.6	0.1	0.1	0		6.6
Manganese	1,500	--	1680	1040	1680	1400		1967
Nickel	4	50	101	59.2	58.8	84.6	OP BRSF HLF	68 67.6 100
	20	70	288	288	19.6	20.5	OP BRSF HLF	339 70 70
Zinc	N/A	200	126	96.9	100	127.1		200
Antinomy	4.5	20	137	47.4	2.4	2.4	OP BRSF HLF	56 20 20
Vanadium	150	130	108	83.4	101	103		130

Notes:

[a] Ecological norms for soil quality expressed as Maximum Allowable Concentrations (RA standards)

[b] Data from sampling points within the Project boundary

[c] Data from sampling points within area of the Project, where soil will be removed during construction

[d] Canadian Council of Ministers for the Environment - Soil Quality Guidelines, see: http://www.ccme.ca/ourwork/soil.html?category_id=44

[e] Compliance targets identified as:

1) Where the natural background concentrations, as measured within the soil, exceed the MAC and CCME, the compliance target is set at the maximum recorded area concentration + 15% tolerance
2) Otherwise compliance target identified to conform with CCME in accordance with requirements for agricultural soils

2.4.4 Noise, Air Overpressure and Vibration

Ambient Noise

The Armenian Order No. 138 sets out sanitary norms regarding 'Noise at Workplaces, Residential and Public Buildings and Premises of Housing Development'. Of the norms tabulated in Order No.138, norm 9[25] and norm 12[26] are considered relevant to the Project.

The IFC EHS Guidelines (April 2007) state that absolute noise level should not exceed certain guideline limits. In addition, the existing baseline (ambient) noise level should not be increased by more than 3dB at any off-site noise sensitive receptor (such as inhabited areas), as a consequence of site noise levels associated with the Project, see Table 2.14.

Table 2.14: Compliance Targets at Residential Properties within Communities

Receptor	**A-weighted broadband sound pressure level, $L_{Aeq,1hr}$ (dB)**	
Edge of community closest to mine	**Daytime (07:00-22:00)**	**Night time (22:00-07:00)**
Absolute noise level (compliance criteria - not to be exceeded)	45 [a]	45 [b]
Predicted site noise level should not exceed the background (or ambient) by:	+3 [b]	+3 [b]

Notes:
Source of compliance criteria:
[a] Order 138; norm 9 and 12
[b] IFC EHS Guidelines

Noise Workplace Exposure

Section 2.3 of the IFC EHS Guidelines (April 2007) provides guidelines for noise impacts on workers. Armenian Order 138 specifies a maximum equivalent allowable sound pressure level in the workplace. The most stringent of these guidelines are combined in Table 2.15 and these will be used by the Project as the relevant compliance criteria.

[25] "Areas immediately adjacent to residential buildings, rest homes for elderly/disabled, kindergartens, schools and other educational institutions, libraries"
[26] "Recreation areas in the territory of building estates and residential building blocks, rest houses, rest homes for elderly/disabled; playgrounds of kindergartens, schools and other educational institutions"

Table 2.15: Compliance Targets for Noise Working Environments (as per IFC EHS Guidelines except where indicated)		
Location / Activity	**Equivalent level LAeq, 8h, dB(A)**	**Maximum LAmax, fast, dB(A)**
Heavy industry (crushing plant, open pit and areas of the Project with mechanical operations, static and mobile)	80 [a]	110
Light industry (Areas within the Project with limited static plant and mobile equipment)	50-65	110
Notes: Details and zones to be based on detailed Work Place occupation noise assessment (OHSP; Appendix 8.7) [a] As per Order 138		

Blasting Air Overpressure and Vibration

Environmental and Community Criteria

The Republic of Armenia has not published guidelines or limits for blasting overpressure and vibration. In order to select compliance criteria for the Amulsar Project in this field, a number of international standards were reviewed. These included standards by the US Bureau of Mines, British Standard BS7385 (1993), German DIN 4150 part 3 and the Spanish UNE22-381-93.

The Australian and New Zealand Environment Conservation Council (ANZECC) (1990) *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration* is the most conservative standard reviewed, and will be used as the compliance criteria for the Project. Compliance criteria are shown in Table 2.16.

Table 2.16: Airblast and ground vibration compliance criteria	
Criteria	**Recommended Limit**
Maximum level for airblast	115 dBL [a]
Maximum ground vibration	5 mm/s, Peak Vector Sum (PVS) vibration [b]
Notes: [a] The level of 115 dBL may be exceeded on up to 5% of the total number of blasts over a period of 12 months. The level should not exceed 120 dBL at any time [b] PVS level of 5 mm/s may be exceeded on up to 5% of the total number of blasts over a period of 12 months. Level should not exceed 10 mm/s at any time	

Workplace Vibration

Armenia does not have workplace vibration criteria. The Project reviewed the American Conference of Governmental Industrial Hygienists (ACGIH) and EC Vibration Directive

(2002/44/EC) standards, and has selected the EC Vibration Directive as the basis for the Project compliance criteria in this regard.

There is no major difference between the two standards, but the EU Daily exposure limits of 2002/44/EC uses limits in any direction, simplifying the evaluation of impacts against compliance criteria (see Table 2.17).

Table 2.17: Workplace vibration compliance criteria (Based on 2002/44/EC)

Type	Daily Exposure Action Value (m/s^2)	Daily Exposure Limit (m/s^2)
Whole body vibration	0.5	1.15