









# ENVIRONMENTAL AND SOCIAL ACTION PLAN IMPLEMENTATION PLAN

Vallex Group – Teghout cjsc

07/11/2012

# Quality Management

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07/11/2012

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## The Project

Vallex is a group of companies with operations in Armenia, Russia and Liechtenstein. The group has mining operations across Armenia which are undertaken by a number of group companies. Operations at the Teghout copper-molybdenum mine in northern Armenia are undertaken by three of these companies with responsibility for different aspects of the project:

- Lernametalurgiai Institute cjsc – the general designer of the project and the supervisor of construction works;
- Armenian Copper Programme cjsc (ACP)– involved in initial blasting works at the site; and
- Teghout cjsc – the site operational entity of Vallex Group.

The Teghout copper-molybdenum prospect was identified by the Soviet Union in the mid-1970s with a range of preliminary surveys being undertaken. Reserves of the deposit were approved by the State Reserve Committee of the Soviet Union in 1992. A licence to develop the deposit was granted to the Armenian Copper Programme (ACP) in 2001 which conducted further assessment works at the site. Preparatory site works commenced at Teghout in 2007 with processing operations due to commence in 2014. The operational life of the mine is expected to be at least 25 years.

Teghout is the second largest copper-molybdenum deposit in Armenia containing an estimated 454 million tonnes of ore which contains around 1.6 million tonnes of copper.

The project involves a number of components:

- Removal of an estimated 64 million cubic metres of soil and overburden rock materials;
- Creation of an open cast mine with an area of 212ha. The pit area will be around 1.5km long and 1km wide, excavated to a depth of 480m;
- Construction of a mine processing plant with an average production capacity of 52,787 tpa of copper concentrate and 812 tpa of molybdenum concentrate from 7 million tonnes of ore;
- Development of a waste depository for overburden rock and oxidised ores that are not handled through the mine processing plant;
- Development of a tailings depository;
- Development of water treatment lagoons and culverts to divert existing water courses;
- Development of site buildings for administration and welfare functions. Buildings will also be developed for plant and vehicle maintenance; and
- Site access infrastructure, including temporary roads and a bypass around the site.

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## Previous Assessments

A range of environmental and social impact assessments have been undertaken for the project. This has included general assessments of the project and specific assessments against International Finance Corporation (IFC) Performance Standards and Environmental, Health & Safety (EHS) guidelines. These assessments have resulted in a range of recommendations for the project relating to EHSS management.

### Environmental and Social Due Diligence 2010

In 2010, Teghout cjsc commissioned an Environmental and Social Due Diligence (ESDD) of the project against IFC Environmental and Social requirements and applicable European Union (EU) regulations, (i.e. a gap analysis). The work provided an understanding of compliance with the IFC requirements and an indication of the level of social and environmental risks associated with the project. An ESAP was developed in order to address the gaps against current performance and those required by national legislation and IFC requirements.

### Environmental & Social Sustainability – Site Assessment 2012

A review of the project and previous assessment work was undertaken by EKF in March 2012 as part of their considerations for approving the financing of the project. The resulting report stated that the project needed to implement a number of actions prior to financial close in order for EKF to approve the funding. By implementing the original ESAP along with additional requirements developed by EKF the environmental and social conditions of the Project will meet the IFC Performance Standards and will thereby be acceptable to EKF.

Key requirements include:

- An update of the baseline surveys on biodiversity and social and health and the establishment of mitigation measures to ensure compliance with IFC Performance Standard 1, 4 and 6 and relevant IFC EHS Guidelines.
- Development and implementation of an Environmental and Occupational Health and Safety Management Systems to be certified before commencing the actual exploitation for copper and molybdenum.
- Inclusion of all project documentation and actions in one Environmental and Social Impact Assessment Document.
- An annual report to EKF detailing the monitoring results and a commentary of compliance with national regulatory requirements and IFC standards.

Prior to financial close EKF requires the following actions to be completed:

- Design a biodiversity baseline study;
- Design a social and health baseline survey;
- Based on the baseline survey issue draft monitoring actions;
- Develop a waste management plan;
- Develop a water and wastewater management plan;
- Draft a monitoring plan;
- Operationalise the Stakeholder Engagement Plan (SEP);
- Develop a master for reporting the status and progress of the ESAP.



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# Management Plan

## Development of an ESAP Management Plan

Teghout cjsc has agreed to take on additional obligations regarding the management of EHSS issues ahead of the potential financing guarantees from EKF for the Teghout copper–molybdenum mine project, located in the Lori region of Armenia. An Environmental and Social Due Diligence (ESDD) of the project was undertaken by ERM, which reviewed existing environmental and design documentation, as well as information on related public disclosure on the consultation process, against IFC Environmental and Social requirements and applicable EU legislation. The report presented ERM’s findings in identifying gaps between current performance and the standards. As a result an Environmental and Social Action Plan (ESAP) has been developed detailing the commitments Teghout cjsc has agreed. Teghout cjsc has committed to undertake annual reporting to EKF on the progress of the implementation of the ESAP items.

This document summarises a management plan including time targets for the delivery of the ESAP commitments, including a general plan for completing each item.

The aim of the ESAP is to determine the implementation programme of mitigation measures and actions associated with the potential environment, health, safety and social impacts of the project. In order to ensure this, all stages of the project (construction, operation and decommissioning phases) are considered in accordance with EU, national and IFC requirements.

This ESAP management plan sets out the potential impacts of the project and associated measures to avoid, or where avoidance is not possible, mitigate the adverse impacts on the environment and local communities.

Teghout cjsc will establish and maintain an organisational structure to strengthen its capability in order to implement the actions, this may include:

- Assigning / recruiting a responsible person on site;
- Providing human and financial resources; and
- Training appropriate staff.

## Managing contractors

Overall it will be Teghout cjsc’s responsibility to implement the ESAP. It is understood that contractors and subcontractors will be working on site during the construction, therefore Teghout cjsc will need to ensure that all contractors are fully aware of the relevant ESAP requirements and adequate measures are implemented in order to meet these requirements. Teghout cjsc needs to implement an effective contractor management regime, to include following:

- Identifying and assessing environmental and social risks associated with the contractor’s work;
- Including relevant requirements in tender documents;
- Awarding the contract to contractors who have demonstrated they have the knowledge and skills to perform their tasks in accordance with the requirements; and
- Monitoring the contractors’ performance and compliance.

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## Monitoring Performance

Teghout cjsc will establish procedures to monitor the implementation and progress of the ESAP. Annual reports will be submitted to EKF throughout the project life, this will also include monitoring results. Based on these reports Teghout cjsc will perform any necessary corrective and preventive actions.



Table 1: ESAP Management Plan

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
<b>EHSS Management</b>								
1.	<ul style="list-style-type: none"> <li>Based on the requirements of the PS 5 develop Compensation Framework describing the basis for compensations which could be presented to the public in order to show that standards for compensation are transparent and consistent within the project.</li> </ul>	<p>Develop a compensation framework to include a description of the following:</p> <ul style="list-style-type: none"> <li>Any compensation guidelines set in national legislation;</li> <li>The methodology that Teghout cjsc will use to value the losses;</li> <li>The proposed types and levels of compensation to be paid;</li> <li>Compensation and assistance criteria; and</li> <li>How and when the compensation will be paid.</li> </ul> <p>When developing the plan, it is crucial to ensure the priority is on 'like for like' replacement of the lost amenity or economic factor rather than a single monetary payment.</p>	An approved compensation framework.	<p>Legal department (Sahak Karapetyan)</p> <p>Department of long term sustainable development (Avetik Ghazaryan)</p>	July 2013		Pre-Construction	
2.	<ul style="list-style-type: none"> <li>Ensure that an organizational structure to deal with the implementation of the management programme, including the management of potential social and environmental risks at construction, operational and closure stages is set up.</li> <li>Ensure that this management structure is capable to deal with social issues to the extent needed to ensure compliance with IFI requirements.</li> <li>Consider the possibility to increase organizational capacity by employing a full-time Environmental and HS managers on site.</li> <li>Establish separate structure on site to manage social issues and risks.</li> </ul>	<p>Appoint a management representative to be responsible for the implementation and maintenance of the management programme. The responsible person should report on performance and recommended improvement actions. Review the programme regularly to ensure suitability, adequacy and effectiveness.</p> <p>As part of the SEMS ensure a training matrix is developed, which identifies training needs. Ensure training needs are fulfilled.</p> <p>The training needs analysis should identify all the job functions that could have impact on the environment and determine the types of training this job function should receive that relates to environmental and health and safety control. Employee competence should be assessed through observation of performance.</p> <p>Consider the need to externally recruit an EHS manager, who is full time dedicated only to this project.</p>	<p>Appointed management representatives for the management programme.</p> <p>Training records detailing the each job role and the training received.</p>	<p>Deputy general director (Gagik Arzumanyan)</p> <p>Deputy general director (Artashes Boshyan)</p> <p>Environmental manager (Suren Yeritsyan)</p>	May 2013		Pre-Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
3.	<ul style="list-style-type: none"> <li>■ Ensure that a documented plan to provide necessary training of employees and contractors on Teghout's social and environmental performance is developed</li> <li>■ Conduct regular training as part of the Management Program on environmental issues and mitigation of impacts.</li> </ul>	<p>Develop a training needs analysis that identifies all the job functions that could have impact on the environment. Determine the types of training this job function should receive that relates to environmental and health and safety control.</p> <p>The needs analysis and training schedule should be reviewed and updates periodically to ensure its continuing adequacy.</p> <p>Employee competence should be assessed through observation of performance.</p> <p>Ensure that training needs are fulfilled and documented.</p>	A training needs analysis and training records.	<p>Environmental manager (Suren Yeritsyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	End of 2013		Pre-Construction	
4.	<ul style="list-style-type: none"> <li>■ Update the ESIA to meet IFC performance standards, IFC General EHS Guidelines and the IFC EHS Guidelines for Mining</li> <li>■ Approve a revised Stakeholder Engagement Plan for the remainder of the Project</li> <li>■ Formalize the third party grievance mechanism as part of the Stakeholder Engagement Plan</li> </ul>	<p>Undertake a gap analysis against the IFC ESIA requirements. Develop a full ESIA supplementary information report with chapters covering all areas required as a result of the ESIA gap analysis.</p> <p>Revise the current Stakeholder Engagement Plan (SEP) to include categorisation of stakeholders by criticality.</p> <p>Develop and implement a grievance mechanism. The grievance mechanism should:</p> <ul style="list-style-type: none"> <li>■ Provide a process to the community that results in fair, effective and lasting outcomes;</li> <li>■ Seeks to builds trust between the community and Teghout cjsc</li> </ul> <p>Enables a systematic identification of emerging issues and trends, facilitating corrective action and pro-active engagement</p>	An updated and approved ESIA document in line with the IFC requirements.	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan),</p> <p>PR department (Vahram Avagyan),</p> <p>Deputy general director (Artashes Boshyan)</p>	<p>Updated ESIA - End of 2014</p> <p>SEP – April 2013</p>		Pre-Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
5.	<p>The Social Baseline Survey Programme aims to prevent or minimise adverse social, economic and health impacts associated with the proposed Project and includes the survey of the following baseline conditions in the Project implementation area:</p> <ul style="list-style-type: none"> <li>■ socio-economic conditions;</li> <li>■ sanitary and epidemiological conditions, and;</li> <li>■ medical and biological conditions.</li> </ul> <p>Social surveys include:</p> <ul style="list-style-type: none"> <li>■ Collection and review of regional data and statistics on economic and health.</li> <li>■ Field surveys including visits to communities within the Project area of influence.</li> </ul>	Undertake a social and health baseline survey as per the methodology developed by WSP. The baseline survey will obtain information from the nearby communities Teghout and Shnogh.	Completion of the social and health baseline survey designed by WSP. An updated social and health chapter as part of the ESIA.	<p>Specialized organization (EV consulting)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	July 2013		Pre-Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
6.	<p>Following the Social Baseline Survey, a Social and Health Impact Assessment document should be developed.</p> <p>Social and Health Impact Assessment document covering specifically the following issues (but not limited to):</p> <ul style="list-style-type: none"> <li>■ impacts on health and safety of residents of nearby communities, and</li> <li>■ impacts related to withdrawal of agricultural lands (reduction of croplands and pastures, decreased soil fertility etc.).</li> <li>■ impacts on health of local population,</li> <li>■ impacts on potable resources</li> <li>■ economic displacement issues in order to show that the Company has considered all the feasible</li> <li>■ alternative project designs to avoid or minimize economic displacement, while balancing environmental, social, and financial costs and benefits.</li> <li>■ assessment of the role of third parties (such as local and national governments, contractors and suppliers).</li> </ul> <p>The main objectives of the social, economic and health impact assessment are:</p> <ul style="list-style-type: none"> <li>■ collection, analysis and review of available data regarding current baseline socio-economic and health situation in the Project implementation area and the ongoing impacts on the communities prior to the commencement of operational stage of the Project;</li> <li>■ prediction and conceptual assessment of changes in the socio-economic environment at all stages of the Project implementation;</li> <li>■ identification of uncertainties (uncontrolled and unpredictable</li> </ul>	<p>Develop a social and health impact assessment which documents the potential impact associated with the project, as concluded from the survey and the proposed mitigation methods.</p> <p>The Social and Health impact assessment will be a combination of procedures, methods and tools to assess the potential social and health impacts of a project on the local communities. It should also propose mitigation measures where appropriate. Both negative and positive aspects will be addressed.</p>	<p>A comprehensive social and health impact assessment, which addresses all the potential impacts that may arise as a result of the project.</p>	<p>Specialized organization</p> <p>Environmental manager (Suren Yeritsyan)</p>	September 2013		Pre-Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
	<p>processes and implications of the Project implementation) in relation to socio-economic and health impacts of the Project;</p> <ul style="list-style-type: none"> <li>■ identification and review of stakeholders including vulnerable groups; identification of their expectations from the Project and impact of the project on them;</li> <li>■ assessment of impacts,</li> <li>■ development of a set of preventive measures to prevent, mitigate, minimise or compensate potential adverse socio-economic and health impacts;</li> <li>■ development of social monitoring recommendations.</li> </ul>							
7.	<ul style="list-style-type: none"> <li>■ Implement a workplace grievance mechanism for the Company employees and appoint persons responsible for the implementation process.</li> </ul>	<p>Develop and implement an internal grievance mechanism and ensure all grievances are recorded.</p> <p>Ensure the grievance mechanism is communicated to all staff. It should involve an appropriate level of management in order to address the concerns quickly, using an efficient and transparent process that provides feedback to those concerned.</p>	<p>A formalised grievance procedure as part of the SEP with an appointed responsible person. The annual report submitted to EKF should include information on grievances.</p>	<p>Deputy general director (Artashes Boshyan)</p>	<p>May 2013</p>		<p>Pre-Construction</p>	

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8.	<ul style="list-style-type: none"> <li>Based on the Requirements of PS 8 it is recommended to develop and implement Chance Find Procedure including criteria for temporary works stoppage and role and responsibilities of different parties</li> </ul>	<p>Develop and implement a Chance Find Procedure. This procedure should include:</p> <ul style="list-style-type: none"> <li>A code of conduct for all workers to follow in the event of the discovery of a potential item of archaeological interest.</li> <li>The rules for work to be stopped, and the find to be reported to the work manager and Environmental Manager, for investigation.</li> <li>If the chance find is confirmed to be of interest, then the routes for communication to the state regulatory body for heritage should be detailed.</li> <li>The procedure should contain a proforma / method of recording of the find, and the action taken (including further investigation, reporting, removal, protection, project design changes etc.</li> </ul>	<p>An approved and operational Chance Find Procedure.</p>	<p>Environmental manager (Suren Yeritsyan)</p> <p>In cooperation with Head of survey team at Teghout mining site from the Institute of archaeology of the national academy of sciences of Armenia (Suren Hobosyan)</p>	April 2013		Pre-construction Construction	
9.	<ul style="list-style-type: none"> <li>Make an actual list of the sites of cultural heritage and location of the sites on the map</li> <li>Develop the Plan of measures (Regulations) on protection and cultural heritage, including procedure of definition of the status of the sites; responsibility of participants of the project (contractors) on protection of sites of a cultural heritage; the list of measures, terms of their performance.</li> <li>Include in contracts with relevant contractors the obligation to follow the measures on protection of the items of cultural heritage</li> </ul>	<p>Develop a report and supporting map detailing the sites of cultural heritage. The report should detail the status of the sites, and measures to protect the sites.</p> <p>Ensure contractors are fully aware of the measures to protect the areas within the mine, of defined cultural heritage. This should form part of the contracts given to suppliers to ensure that these areas are adequately notified and protected.</p> <p>It is recommended that a written procedure is developed to define the areas requiring protection, and to outline the responsibilities of all parties for protection. This can also cover the requirements in case of any 'chance finds' while working in the areas (i.e. reporting, stop work and investigations to be conducted).</p> <p>Monitor performance of the contractors to ensure they are following the proposed measure of protections.</p>	<p>An annotated map identifying the sites of cultural heritage.</p> <p>A plan detailing the measures for the protection of cultural heritage.</p> <p>Covenants in contracts to cover the protection of cultural heritage.</p>	<p>Environmental manager (Suren Yeritsyan)</p> <p>Mapping specialist (Vardges Tovmasyan)</p> <p>Head of survey team at Teghout mining site from the Institute of archaeology of the national academy of sciences of Armenia (Suren Hobosyan)</p> <p>Legal department</p>	June 2013		Pre-construction Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
10.	<ul style="list-style-type: none"> <li>■ Approve a revised Stakeholder Engagement Plan for the remainder of the Project</li> <li>■ Teghout cjsc to integrate in the Stakeholder Engagement Plan the process of land acquisition and compensation approach and status of pending cases.</li> <li>■ Formalise the third party grievance mechanism as part of the Stakeholder Engagement Plan</li> </ul>	<p>Develop a land acquisition and compensation framework. Integrate this with the SEP or cross reference.</p> <p>Finalise the revised Stakeholder Engagement Plan. Include details of specific cases and the status of each case.</p> <p>Formalise and implement the grievance mechanism.</p>	An approved and operational Stakeholder Engagement Plan and grievance forms as required.	<p>Legal department</p> <p>PR department (Vahram Avagyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	April 2013		Pre-construction Construction	
11.	<ul style="list-style-type: none"> <li>■ Special ichthyologic survey of the Shnogh river to gather detailed information about the background characteristics of the populations, fish resources, especially the most valuable species of fish (salmon) and development of set of protection measures</li> <li>■ Identification and assessment of the possible sources of invasion by commensal species as part of additional environmental research</li> <li>■ Surveys to be conducted during the representative season covering the Project area of influence at up to 3km from the mine and area downstream from the tailing dam.</li> </ul> <p>The following methods are recommended to be used:</p> <ul style="list-style-type: none"> <li>■ Visual observation and recording of large mammals, predators, swimming birds and birds living near water across transects with no limitations on their width;</li> <li>■ Surveys of small sparrow-like birds across transects with limited widths;</li> <li>■ Surveys of birds by putting rings on them within their main habitats;</li> <li>■ Surveys of reptiles and amphibians along the proposed routes.</li> </ul>	Complete the full range of biodiversity surveys as per the methodology designed by WSP.	An updated EIA identifying the potential biodiversity impacts and associated methods of mitigation.	<p>International specialized organisation (WSP) in cooperation with local specialists from relevant scientific organizations</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Department of long term sustainable development (Avetik Ghazaryan)</p>	August 2014		Pre-construction Construction	



Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
12.	<ul style="list-style-type: none"> <li>Develop and implement the Action Plan to reduce / mitigate the identified social and environmental risks and impacts for different stages of the project implementation to be used as the main element of the Management Programme and to be based on the available lists of environmental protection activities, as well as activities proposed following additional social baseline studies. Actions specified in the Plan should be prioritised and have specific implementation timelines. The Action Plan should describe the schedule and mechanism for external reporting in relation to the fulfilment of actions specified in it.</li> </ul>	<ul style="list-style-type: none"> <li>Create a management programme which identifies all the mitigation measures required to minimise the potential impact of the project.</li> </ul> <p>The programme should detail:</p> <ul style="list-style-type: none"> <li>The project activities / environmental aspects;</li> <li>The environmental receptor and potential impact;</li> <li>Proposed mitigation measures;</li> <li>Key performance indicators.</li> </ul> <p>Undertake detailed baseline surveys on biodiversity and social and health. Identify mitigation requirements to ensure compliance with EU and national requirements and IFC Performance Standards.</p> <p>Compile the identified actions into an Action Plan assigning relevant personnel and dates to each task.</p> <p>Develop a reporting mechanism to disclose information on the required output for each action, the date this has been made available (if the action is complete) or the date of expected completion.</p>	<ul style="list-style-type: none"> <li>A programme of mitigation measures with associated KPIs with an agreed schedule.</li> </ul>	<p>Specialized organisation (WSP)</p> <p>In cooperation with PR department (Vahram Avagyan) and</p> <p>Department of long term sustainable development (Avetik Ghazaryan)</p> <p>Environmental manager (Suren Yeritsyan)</p>	November 2014 – to be updated when the surveys have been completed and review periodically.		<ul style="list-style-type: none"> <li>Pre-Construction</li> <li>Construction</li> <li>Operational</li> </ul>	
13.	<p>Development and distribution of an information package about the Project including:</p> <ul style="list-style-type: none"> <li>Brief description of the Project;</li> <li>EIA documents not being subject to trade secrets, including hazards and risks related to the Project implementation;</li> <li>Information about the current status of the Project;</li> <li>Information about the Company's feedback to stakeholders' recommendations provided during previous meetings.</li> </ul> <p>Those documents should be disclosed to stakeholders in appropriate places, including libraries, information stands, city halls, etc, as well as through local media and the Internet.</p>	<p>Put together an information pack for public disclosure which includes a non technical summary of the project, the identified impacts associated with the projects, the current status and feedback.</p> <p>Ensure these documents are disclosed in locations where relevant stakeholders will be able to obtain them. Also disclose information on the internet and through the local media.</p>	<p>A publicly available information pack publicly to include a Non Technical Summary of the project and the current status along with any feedback received from stakeholders.</p>	<p>PR department (Vahram Avagyan),</p> <p>Deputy general director (Artashes Boshyan)</p>	June 2013 – Update throughout the phases of the project.		<ul style="list-style-type: none"> <li>Pre-construction</li> <li>Construction</li> <li>Operational</li> </ul>	

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14.	<p>Develop a Stakeholder Engagement Plan for the entire life of the project and document mitigation measures and measures taken in response to community feedback received during consultation. An information disclosure programme should be developed and implemented. This may be tied to the Social and Environmental Management System. The main objectives of the SEP are:</p> <ul style="list-style-type: none"> <li>■ identification and analysis of the main stakeholders and affected communities together with set-up of a stakeholder interaction mechanism;</li> <li>■ development of a consultation schedule at different levels and stages of the Project implementation;</li> <li>■ identification of concerns, comments and recommendations of the stakeholders in relation to the Project, and establishment of a grievance mechanism for the stakeholders during implementation of the Project.</li> <li>■ allocation of resources needed for the implementation of the Plan.</li> <li>■ The SEP is a document reviewed and amended as new information is received regarding the Project implementation and consultations with stakeholders.</li> <li>■ The requirements for information disclosure, public consultation process and stakeholder engagement are given in IFC Guidance Note for PS1 'Social and Environmental Assessment and Management Systems' (pp. 18-23) and IFC Handbook for Stakeholder Engagement.</li> </ul>	<p>Develop and operationalize the Stakeholder Engagement Plan. Ensure the document is reviewed at different stages of the project.</p> <p>The SEP will include the categorisation of stakeholders by criticality. A consultation schedule and disclosure plan will be determined for each category of stakeholders.</p>	<p>An approved and operational Stakeholder Engagement Plan and grievance forms as required.</p>	<p>PR department (Vahram Avagyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	<p>April 2013</p>		<p>Pre-construction</p> <p>Construction</p> <p>Operational</p>	

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15.	<ul style="list-style-type: none"> <li>■ Regular meetings with local population in Teghout and Shnogh to discuss the results of the EIA of the Project and the current status of the Project based on information in the information package prepared by the Company.</li> <li>■ Meetings should discuss: <ul style="list-style-type: none"> <li>- Social Impact Assessment</li> <li>- Biodiversity Impact Assessment</li> <li>- Monitoring Programme Summary</li> <li>- H&amp;S issues</li> <li>- Closure and Post-closure issues</li> <li>- Findings of archeological survey</li> </ul> </li> </ul>	<p>Develop a full schedule of public engagement activities, document these within the SEP.</p> <p>Hold public meetings to discuss the progress of the project and the points listed. Ensure the meetings are adequately advertised to ensure the local communities are aware of the meetings. Use local media and the internet as methods of communication. Signs should be displayed throughout the villages with details of the date, time and location of the meetings.</p> <p>Prior to the meeting a non-technical summary of the project should be disclosed to inform the local community about the project details.</p> <p>Open book days should also be arranged and details announced as part of the public meeting.</p> <p>SEP shall allow for sufficient time (2-4 weeks) for stakeholders to give their comments documents that are being discussed at public meetings, and SEP would be amended accordingly to allow for that.</p>	<ul style="list-style-type: none"> <li>■ A formalised schedule of stakeholder engagement meetings this should be communicated to the public.</li> <li>■ Minutes of meetings held.</li> <li>■ Amended SEP</li> </ul>	<p>PR department (Vahram Avagyan),</p> <p>Deputy general director (Artashes Boshyan)</p> <p>Environmental manager (Suren Yeritsyan)</p>	<p>Schedule – April 2013</p> <p>Meetings – ongoing.</p> <p>SEP Amendment – June 2013</p>		<p>Pre-construction</p> <p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
16.	<ul style="list-style-type: none"> <li>■ Develop and implement a formalised clear and transparent procedure for implementation of the grievance mechanism for local community.</li> <li>■ Further engagement with NGOs, local people and public and information disclosure is recommended to be planned, well documented and organised on regular basis.</li> <li>■ It is recommended to encourage an organisation of an independent commission from members of public organisations to supervise implementation of nature protection measures under the Teghout mining-and-processing plant construction and copper - molybdenum deposit operation project.</li> </ul>	<p>As part of operationalising the stakeholder engagement plan develop and implement a grievance mechanism. The grievance mechanism should:</p> <ul style="list-style-type: none"> <li>■ Provide a process to the community that results in fair, effective and lasting outcomes;</li> <li>■ Builds trust between the community and Teghout cjsc</li> <li>■ Enable a systematic identification of emerging issues and trends, facilitating corrective action and proactive engagement</li> </ul> <p>Organise public meetings and ensure information disclosure and engagement with NGOs and the local community. Meetings should be organised on a regular basis (for example every quarter) to discuss the project development. Ensure the meetings are adequately advertised to ensure the local communities are aware of the meetings. Use local media and the internet as methods of communication. Signs should be displayed throughout the villages with details of the date, time and location of the meetings.</p> <p>Prior to the meeting a non-technical summary of the project should be disclosed to inform the local community about the project details.</p> <p>Open book days should also be arranged and details announced as part of the public meeting.</p> <p>Undertake a third party review, at regular intervals of the project, of the nature protection programme. Ensure the Ministry of Nature Protection is informed about felling and reforestation activities.</p>	<ul style="list-style-type: none"> <li>■ An approved and operational Stakeholder Engagement Plan and grievance forms.</li> <li>■ Minutes of meetings held</li> </ul>	<p>PR department (Vahram Avagyan),</p> <p>Deputy general director (Artashes Boshyan)</p>	<p>SEP – April 2013</p> <p>Meeting minutes - ongoing</p>		<p>Pre-construction</p> <p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
17.	<ul style="list-style-type: none"> <li>■ The Project shall develop and implement an EHS Management System including social aspects that is certifiable according to ISO 14001/OHSAS 18001 by mid-2015</li> <li>■ In accordance with PS1 regarding Social and Environmental Management System (SEMS), the SEMS should entail the thorough assessment of potential social and environmental impacts and risks from the early stages of project development, and provides order and consistency for mitigating and managing these on an ongoing basis. A good management system appropriate to the size and nature of a project promotes sound and sustainable social and environmental performance, and can lead to improved financial, social and environmental project outcomes.</li> </ul> <p>The SEMS as required by PS1 should incorporate the following elements:</p> <ol style="list-style-type: none"> <li>1) Social and Environmental Assessment;</li> <li>2) management programme;</li> <li>3) organizational capacity;</li> <li>4) training;</li> <li>5) community engagement;</li> <li>6) monitoring; and reporting.</li> </ol> <ul style="list-style-type: none"> <li>■ The system shall cover monitoring of E&amp;S performance of contractors that will be involved in the Project development and operation. As part of implementation of the EHS management system, completion of measures aimed at prevention of pollution and sustainable utilisation of resources during the current construction, operation and closure phases should be ensured.</li> </ul>	<p>Develop an environmental and social policy as a statement of commitment.</p> <p>Undertake a gap analysis / initial review against the current status of performance.</p> <p>Develop an environmental aspects register. This should detail activities with the potential to have impacts on the environment. A significance rating should be assigned to each aspect.</p> <p>Develop a register of applicable environmental legislation.</p> <p>Develop clear objectives and targets.</p> <p>Develop systems and operations procedures.</p> <p>Appoint a management representative to be responsible for the implementation and maintenance of the SEMS. The responsible person should report on performance and recommended improvement actions. Review the EMS regularly to ensure suitability, adequacy and effectiveness.</p> <p>Develop a training matrix, which identifies training needs. Ensure training needs are fulfilled.</p> <p>The training needs analysis should identify all the job functions that could have impact on the environment, and determine the types of training this job function should receive that relates to environmental and health and safety control.</p> <p>Develop an internal and external communication procedure.</p> <p>Maintain all relevant documentation associated with the SEMS.</p> <p>Monitor activities and processes, performance and operational controls with environmental objective and targets, ensuring this is evaluated against compliance periodically.</p> <p>Identify actual and potential non-conformances and assign corrective actions and responsible personnel.</p> <p>Establish and implement an internal audit programme, which will evaluate</p>	<p>Environmental and Social systems developed and maintained in line with international standards (ISO 14001).</p>	<p>Specialized organization (WSP) in cooperation with Environmental manager (Suren Yeritsyan)  Deputy general director (Artashes Boshyan)</p>	July 2015		<p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
		conformity with requirements and effectiveness of the SEMS. Report on findings.						
18.	<ul style="list-style-type: none"> <li>■ Complete work place assessment for main work operations for the remainder of the construction period and for the operational phase</li> <li>■ The capacity and capabilities of the OHS organisation shall be evaluated on a regular basis as part of the Management Review under the OHS Management System</li> <li>■ Procedures for introducing Site OHS requirements for contractors to conform to during on-site activities</li> <li>■ The OHS management system shall include a grievance mechanism for employees of contractors working on the Project</li> <li>■ The Project shall develop and implement an EHS Management System including social aspects that is certifiable according to ISO 14001/OHSAS 18001 by mid 2015.</li> </ul>	<p>Develop an integrated OHS and environmental management system and move this forward as an integrated system.</p> <p>Therefore the proposed recommended action proposed in point 17 is relevant for this section; however it should cover occupational health and safety.</p>	OHS systems developed and maintained in line with international standards (OHSAS 18001).	<p>Specialized organization (WSP) in cooperation with</p> <p>Safety manager (Samvel Yeritsyan)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	July 2015		Construction Operational	
19.	<ul style="list-style-type: none"> <li>■ Check the quality of potable water used by employees and make arrangements to ensure the water has appropriate quality and corresponds with the sanitary rules.</li> <li>■ Special attention should be given to the access of potable water at the construction stage.</li> </ul>	Award a contract to an external company to monitor potable water as per the monitoring plan and ensure compliance with national sanitary rules.	<p>Award a contract to an external company to monitor potable water as per the monitoring plan.</p> <p>Obtain monitoring reports and ensure details of these are reported to EKF.</p>	Environmental manager (Suren Yeritsyan)	September 2013		Construction Operational	



Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
20.	<ul style="list-style-type: none"> <li>■ Develop and implement the Management Programme to reduce impacts and to increase effectiveness and quality of measures to manage the identified environmental and social risks and designate specific personnel to be responsible for the implementation of the Management Programme.</li> <li>■ Develop and implement procedures to monitor and measure the effectiveness of the Management Programme, including, if appropriate, external and/or internal inspections and audits.</li> <li>■ Develop reporting format for assessments of the effectiveness of the Management Programme based on systematic data collection and review.</li> <li>■ The Programme should be based on updated EIA and additional assessments of social risks and impacts (when completed), aimed at reducing / mitigating the identified environmental and social risks and impacts, use the Action Plan as the main tool and include targets, acceptance criteria or other efficiency and performance indicators.</li> </ul>	<p>Create a management programme which identifies all the mitigation measures required to minimise the potential impact of the project.</p> <p>The programme should detail:</p> <ul style="list-style-type: none"> <li>■ The project activities / environmental aspects;</li> <li>■ The environmental receptor and potential impact;</li> <li>■ Proposed mitigation measures;</li> <li>■ Key performance indicators.</li> </ul> <p>Establish and implement an internal audit programme, which will evaluate conformity with requirements and effectiveness of the Management Programme. Ensure that the audit findings are managed effectively through:</p> <ul style="list-style-type: none"> <li>■ Evaluation of audit findings;</li> <li>■ Analysis of the root cause;</li> <li>■ Assign corrective action;</li> <li>■ Assign responsible personnel; and</li> <li>■ Ensure that audit reports are periodically reviewed.</li> </ul>	<p>A programme of mitigation measures with associated KPIs.</p> <p>A system of procedures to monitor the progress and effectiveness of the management plan.</p> <p>A reporting template and schedule against the KPIs.</p>	<p>Specialized organization (WSP) in cooperation with</p> <p>Teghout cjsc environmental manager (Suren Yeritsyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	October 2014		Operational	



Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
21.	<ul style="list-style-type: none"> <li>Following completion of the Social and Environmental Management Program and associated Action Plan, it is recommended to submit to Teghout's senior management periodic reports with the assessments of the effectiveness of the EHS management programme and to submit to the external project sponsor regular annual reports on the implementation of the environmental action plans and overall environmental performance.</li> </ul>	<p>Establish and implement an internal audit programme, which will evaluate conformity with requirements and effectiveness of the SEMS. Ensure that the audit findings are managed effectively through:</p> <ul style="list-style-type: none"> <li>Evaluation of audit findings;</li> <li>Analysis of the root cause;</li> <li>Assign corrective action;</li> <li>Assign responsible personnel; and</li> <li>Ensure that audit reports are periodically reviewed</li> </ul> <p>Report on findings to the senior management.</p> <p>Ensure annual progress reports are submitted to EKF using the template provided. Also report on findings of the internal audits</p>	<p>Development of an internal audit programme.</p> <p>A report from each audit should be produced with an evaluation of findings, an analysis of the cause, corrective actions and the identification of a responsible person.</p>	<p>Specialized organization (WSP) in cooperation with Teghout cjsc environmental manager (Suren Yeritsyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	October 2014		Operational	
<b>Environmental</b>								
22.	<ul style="list-style-type: none"> <li>It is recommended to conduct additional radiological survey at Project area and rocks and assess level of possible radiation hazards (if any)</li> </ul>	<p>Collate report for the recent radiological assessments conducted, as an official record. Produce a conclusion report on whether any radiological risks exist and whether any further monitoring is required during development of the project.</p>	<p>Radiation survey report. Provide details to EKF.</p>	<p>Environmental protection unit of Lernametalurgiai institute cjsc in cooperation with Teghout cjsc environmental manager (Suren Yeritsyan)</p>	May 2013		Pre-Construction	Results of the radiation monitoring surveys will be uploaded to the Teghout cjsc website
23.	Develop a Water/ Wastewater management plan.	<p>Develop a water and wastewater management plan, to include:</p> <ul style="list-style-type: none"> <li>a water balance calculation;</li> <li>any wastewater generation and discharge issues;</li> <li>technical measurements.</li> </ul>	<p>An approved water balance and wastewater management plan.</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p>	April 2013		Pre-construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
24.	<p>Waste Management:</p> <p>Develop Waste Management Plan for the construction, operation and closure stages in line with the project including:</p> <ul style="list-style-type: none"> <li>■ Accurate calculation of amount of generated wastes</li> <li>■ Inventory of wastes</li> <li>■ Waste management (handling, transportation, storage etc)</li> </ul> <p>(note: the hydrology report has been updated detailing the mitigation methods for potential for overflow of the water pond after storm conditions, details can be found in the WSP Water Management Plan)</p>	<p>Develop a waste management plan which includes:</p> <ul style="list-style-type: none"> <li>■ Description of waste categories;</li> <li>■ Descriptions of onsite storage areas for individual waste categories;</li> <li>■ Mitigation measures for preventing sub-surface impacts of hazardous substances;</li> <li>■ Waste management practices such as handling requirements, roles, responsibilities and training;</li> <li>■ Health and safety measures; and</li> <li>■ Waste disposal routes.</li> </ul>	<p>An approved Waste Management Plan.</p> <p>Continuous monitoring of tailings and water pond levels.</p>	<p>Specialized organisation (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p>	<p>Waste Management Plan – April 2013</p> <p>Monitoring - ongoing, as per the requirements detailed in the monitoring plan.</p> <p>Monitoring Plan – April 2013</p>		Pre-Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
25.	<p>Amend local EIA in line with the changes of Project, results of the baseline survey and IFC requirements and include in the EIA the following (but not limited to):</p> <ul style="list-style-type: none"> <li>■ Impacts to environment at the construction stage</li> <li>■ Optimisation of the location of construction sites on the lands of low environmental significance (poor soils etc)</li> <li>■ Impact assessment on biodiversity/habitats/critical and sensitive habitats/migration paths for all project stages,</li> <li>■ Additional assessment of damage to the forest for all stages of the Project</li> <li>■ Finite assimilative capacity of the environment and the potential for cumulative impacts with uncertain and irreversible consequences.</li> <li>■ Analysis of unplanned but predictable developments caused by the project (i.e. impacts after the closure of the plant, tailing and landfill, maintenance and use of explosive storage on right side of Dukanadzor gorge).</li> <li>■ Potential cumulative impacts, i.e. issues such as social impact assessment, impact to biodiversity, post closure impacts of habitat, transboundary impacts (river Debed flows to Georgia).</li> <li>■ Assessment of potential impacts and land demand related to the potential Project expansion.</li> <li>■ Assessment of radiation risks of the project area and rocks.</li> <li>■ Current and planned noise level and vibration and other physical factors and their impact on the personnel and local people</li> <li>■ Assessment of hazardous materials use.</li> <li>■ Assessment on the impact on cultural heritage (using data of surveys 2009-2011)</li> </ul>	<p>Undertake a gap analysis against the IFC requirements. Where the ESIA falls short of these requirements appoint appropriate personnel (likely to be an international consultant) to provide a supplementary information report with full coverage of the gaps in all current ESIA coverage.</p>	<p>A gap analysis of the current ESIA against the IFC requirements.</p> <p>An updated ESIA to meet the IFC requirements.</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p>	August 2014		<ul style="list-style-type: none"> <li>■ Pre-construction</li> </ul> <p>Construction</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
	<ul style="list-style-type: none"> <li>■ The associated facilities (roads etc).</li> <li>■ Closure and post-closure impact assessment.</li> <li>■ Greenhouse gas emissions assessment,</li> <li>■ Alien species</li> </ul>							
26.	<ul style="list-style-type: none"> <li>■ Teghout cjsc must engage an international acknowledged environmental consultant to develop the design of the biodiversity baseline study and subsequently conduct the biodiversity baseline study</li> <li>■ The biodiversity baseline study shall in addition to the ESAP recommendations above include specific assessment of cross-Site dynamics and impacts describing the impacts on flora and fauna and the ability to maintain biodiversity community strength in the area or in adjacent non-impacted areas</li> </ul>	<p>Develop biodiversity baseline survey methodology. Once these are complete, verify and gain approval from EKF.</p> <p>Undertake the surveys as per the methodologies and seasonal requirements.</p> <p>Provide EKF with reports on finding from the survey.</p> <p>Following the surveys develop a habitats management programme.</p>	<p>Approved biodiversity baseline survey methodology.</p> <p>An updated ESIA with results from the biodiversity studies.</p> <p>Habitat management program me.</p>	<p>Specialized organization (WSP) in cooperation with local specialists from relevant scientific organizations</p> <p>Environmental manager (Suren Yeritsyan)</p>	<p>Biodiversity Survey methodology – April 2013</p> <p>Completion of surveys – March 2014</p> <p>Management Programme – August 2014</p>		Pre-construction Construction	
27.	<p>Identification of areas of potential historical contamination:</p> <ul style="list-style-type: none"> <li>■ In order to identify the areas of potential contamination and develop a set of measures for remediation (if needed) it is recommended to conduct an additional field survey</li> </ul>	<p>Finalise a sampling and investigation strategy.</p> <p>Undertake soil sampling and potentially soil leachability and associated groundwater testing.</p> <p>Full reporting with risk assessment and full remediation strategy if required.</p>	<p>Results from soil and groundwater sampling.</p> <p>Finalised sampling and investigation strategy.</p> <p>Full reporting, with risk assessment (and remediation, if required) in relation to historical contamination.</p>	<p>Lernametalurgiai Institute cjsc</p> <p>Environmental manager (Suren Yeritsyan)</p>	October 2013		Pre-Construction Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
28.	<p>Taking into account that the preparation and construction works have been started already and some areas are being involved in the Project activities, it is recommended to consider an additional biodiversity surveys on the available territories and cover the most sensitive biodiversity components to the possible extent.</p> <p>The purposes of the Biodiversity field survey are:</p> <ul style="list-style-type: none"> <li>■ general assessment of biodiversity within the construction area;</li> <li>■ identification of local flora and fauna species that require protection;</li> <li>■ development of impact minimisation measures;</li> <li>■ development of biodiversity protection activities in the Project area of influence at all stages of Project implementation, and development of recommendations for monitoring.</li> </ul> <p>Biodiversity Baseline Surveys components are given in IFC Performance Standard 6 Biodiversity Conservation and Sustainable Natural Resource Management.</p> <p>The following should be covered in the course of the surveys:</p> <ul style="list-style-type: none"> <li>■ Identification of species that will need protection and determination of their status, conditions and head count including endangered, protected and rare species and habitats and species listed in the national and regional Red Books, as well as IUCN Red List;</li> <li>■ Identification of critical habitats essential for the preservation of biodiversity and putting this information on specialised maps including information about: <ul style="list-style-type: none"> <li>- Extremely valuable areas of forest;</li> <li>- Areas inhabited by bottomland and subalpine plant</li> </ul> </li> </ul>	<p>Complete the full range of biodiversity surveys as per the methodology designed by WSP.</p>	<p>Biodiversity studies.</p> <p>An updated EIA identifying the potential biodiversity impacts and associated methods of mitigation.</p>	<p>Specialized international organisation (WSP) in cooperation with local specialists from relevant scientific organizations</p> <p>Environmental manager (Suren Yeritsyan)</p>	<p>Biodiversity Studies – March 2014</p> <p>Updated EIA – August 2014</p>		<p>Pre-construction</p> <p>Construction</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
	<p>communities;</p> <ul style="list-style-type: none"> <li>- Habitats where the rarest species in need of protection are most likely to live;</li> <li>- Possible migratory and local nomad corridors of various species of animals (amphibians, reptiles, mammals);</li> <li>- Nesting areas of predatory birds;</li> <li>- Main characteristics of the current conditions and disturbance of the vegetation in the area;</li> <li>- Areas that are most promising in terms of preserving biodiversity and productivity of the ecological systems in the territory affected by the proposed construction project.</li> <li>- Identification of migration paths of animals;</li> <li>- Places of concentration of migrating species;</li> <li>- Water and wetland habitats;</li> <li>- Game species;</li> <li>- Non-forest ecosystems.</li> <li>- Fish, river invertebrate fauna.</li> </ul>							

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
29.	<p>Following the surveys, a document describing the environmental status of the territory is to be developed to identify the sensitive habitats and species, including maps/charts of the Project region with environmental limitations and restrictions. The following maps should be developed in the course of the surveys:</p> <ul style="list-style-type: none"> <li>■ A large-scale map of the vegetation in the territory (the recommended scale is M 1:2000-5000 for the future construction site and M1:25000 for the territory that is expected to be impacted by the project);</li> <li>■ A map showing the value of habitats based on the vegetation map.</li> </ul> <p>The additional Environmental Impact Assessment materials should include:</p> <ul style="list-style-type: none"> <li>■ Assessment of changes in the hydrological and hydrogeological conditions of the territory and their impact on the plant formation;</li> <li>■ Measures for the forest amelioration and landscaping of the territories adjacent to the future construction signs in order to preserve and maintain biodiversity and improve the aesthetics of the landscapes;</li> <li>■ Calculation of the damage that will be caused to land fauna, including the hunted/commercial species, for the whole period that the Project will be implemented, including the closing down stage;</li> <li>■ Calculation of the damage that will be caused to the fish populations throughout the whole period that the Project will be in operation;</li> <li>■ Measures to preserve and maintain biodiversity, including the development of a biological monitoring programme.</li> </ul>	<p>Following the conclusion of the biodiversity surveys, develop a report to describe the findings of the study. A supporting map will be developed to identify locations of sensitive habitats and species.</p> <p>The EIA should be updated to include the conclusions of the findings from the survey and the findings from the water and wastewater management plan developed by WSP.</p>	<p>An updated EIA chapter detailing the findings of the biodiversity surveys, with potential impacts and proposed mitigation measures.</p> <p>An annotated vegetation map.</p>	<p>Specialized international organisation (WSP) in cooperation with local specialists from relevant scientific organizations</p> <p>Environmental manager (Suren Yeritsyan)</p>	August 2014		<p>Pre-construction</p> <p>Construction</p> <p>Operational</p>	



Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
30.	<ul style="list-style-type: none"> <li>■ Noise survey be performed as part of the updating of the ESIA</li> <li>■ Based on the survey define a noise monitoring program that includes sensitive residential areas and natural habitat location</li> <li>■ Noise and vibration issues shall be covered by the OHS supervision and the OHS management system, including review of work operation procedures for blasting, as well as the crushing and grinding operations.</li> <li>■ Internal noise measurements shall be performed to document compliance with IFC General EHS Guidelines</li> </ul>	<p>The ESIA noise section should be updated to include results of a baseline noise survey undertaken at nearby noise sensitive receptors, and a predictive assessment of the noise levels likely to occur at the receptors due to the operation of the site.</p> <p>Where necessary, details of suitable mitigation measures should be provided in order to demonstrate the noise limits stipulated by IFC will not be exceeded at the receptors.</p> <p>In addition to premises occupied by persons, the noise monitoring undertaken as part of the ESIA update should also include areas of natural habitat that are deemed to be particularly noise sensitive. Appropriate outdoor noise level limits should then be set for any such areas, and they should be included in the predictive assessment undertaken within the ESIA.</p> <p>The OHS management system should include adequate procedures to ensure that employees' exposure to noise does not exceed the criteria stipulated in the IFC guidelines, and that exposure to hand-arm vibration and whole body vibration is adequately controlled.</p> <p>The first stage in controlling the exposure to noise should be to investigate and implement (where feasible) engineering controls to reduce noise levels at source. The next stage should be to enforce the use of hearing protection where necessary and limit the duration of exposure. Workers exposed to high noise level should undergo periodic medical hearing checks.</p> <p>The control of exposure to vibrations should be controlled through choice of equipment, installation of appropriate isolation measures, and limiting the exposure of workers.</p> <p>During the operation of the site, noise measurements should be undertaken at the receptors considered in the ESIA in order to verify that noise levels accord with those predicted and are compliant with the IFC guidelines. The frequency</p>	<p>Updated noise chapter as part of the ESIA, to include results from the baseline survey.</p> <p>OHS noise procedures and systems developed and maintained in line with international standards (ISO 18001).</p>	<p>Environmental protection unit of Lernametalurgiai Institute cjsc</p> <p>and</p> <p>Teghout cjsc environmental manager (Suren Yeritsyan)</p>	<p>Noise Surveys – November 2013</p> <p>OHS noise procedures – February 2014</p>		<p>Pre-construction</p> <p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
		and duration of the noise measurements should be determined following consideration of the phasing of works at the site in order that compliance during worst case phases can be verified.						
31.	<ul style="list-style-type: none"> <li>Based on the assessment results, mitigation measures following the principle avoid-minimise-mitigate-compensate should be developed.</li> </ul>	<p>Develop a full management plan based on the findings of the above surveys to include mitigation, minimisation and compensatory plans.</p> <p>Once the surveys have been completed, review the proposed compensatory plan.</p>	<p>An updated ESIA with results from the biodiversity studies, detailing potential impacts and associated mitigation measures.</p> <p>A management plan regarding biodiversity based on the studies.</p>	<p>Specialized international organization (WSP), Environmental manager (Suren Yeritsyan)</p>	<p>Updated ESIA – August 2014 Management Programme – May 2014</p>		<p>Pre-construction Construction Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
32.	<p>Environmental Monitoring Programme for construction, operational and closure / post closure phases</p> <ul style="list-style-type: none"> <li>■ Following completion of the Social and Environmental Management System and associated Action Plan, develop procedures to monitor the efficiency of the proposed social and environmental mitigation activities (covering as a minimum air quality, biota and soil).</li> <li>■ It is recommended to develop procedures to document results of the proposed activity efficiency monitoring.</li> <li>■ It is recommended to develop an Environmental Monitoring Programme for construction, operational and closure/post-closure phases in accordance with requirements of the applicable international standards (Equator Principles, IFC Performance Standards and EHS Guidelines) to demonstrate to the stakeholders that the Company has proper environmental monitoring in place.</li> <li>■ It is recommended to use the following information as a basis: <ul style="list-style-type: none"> <li>- findings of baseline surveys (including biodiversity survey);</li> <li>- estimates of greenhouse gas emissions in the course of Project implementation;</li> <li>- project materials;</li> <li>- requirements of local authorities; and</li> <li>- concerns of the affected communities.</li> </ul> </li> </ul>	<p>Develop procedures which cover the suggested monitoring arrangements specified in the monitoring plan developed by WSP.</p>	<p>An approved environmental monitoring programme covering the different phases of the project.</p> <p>Report results of the monitoring to EKF on an annual basis.</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Environmental protection unit of Lernametalurgiai institute cjsc</p>	<p>Approved monitoring plan – April 2013 (this will be reviewed on a regular basis, at least annually.</p> <p>Reporting to EKF – on-going.</p>		<p>Pre-construction</p> <p>Construction</p> <p>Operational</p> <p>Closure / Post closure</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
33.	<p>Waste minimisation:</p> <ul style="list-style-type: none"> <li>The possibility to minimize waste generation in the course of the Project operation should be considered. Based on the results, a program for waste generation reduction should be developed and implemented.</li> <li>An assessment of the potential for recovery and reuse of waste materials generated on the site should be undertaken. Based on the results, appropriate plans and arrangements for waste recovery and reuse should be developed and implemented as economically and practically feasible.</li> </ul>	<p>Identify alternative working practices that avoid or minimise the quantity of waste produced.</p> <p>Identify optimisation measures that reduce the quantity of waste resulting from on-site processes.</p> <p>Identify opportunities for materials arising within the project to be reused as products within the project.</p>	<p>An approved waste management plan, detailing recovery and reuse options.</p> <p>Optimisation measures that reduce quantity of waste from on-site processes identified.</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Department of long term sustainable development (Aveti Ghazaryan)</p>	<ul style="list-style-type: none"> <li>Waste Management Plan – April 2013</li> <li>Optimisation measures to reduce waste - December 2015</li> </ul>		<ul style="list-style-type: none"> <li>Pre-construction</li> <li>Construction</li> <li>Operational</li> </ul>	
34.	<p>Management and Use of Renewable Natural Resources:</p> <ul style="list-style-type: none"> <li>It is recommended to conduct regular monitoring of the planted areas and perform measures to support the growth of plants.</li> </ul>	<p>Undertake periodic checks of the recultivated area against the initial design approved by the Ministry of Nature Protection.</p>	<p>Reports on the development of the recultivated areas against the approved design.</p>	<p>Environmental manager (Suren Yeritsyan)</p> <p>Specialized organization (ArmForest SNCO)</p>	<p>Annual Reporting to be completed by the end of each year.</p>		<p>Construction</p> <p>Operational</p> <p>Closure / Post Closure</p>	
35.	<p>Alien Species:</p> <ul style="list-style-type: none"> <li>Develop and implement mitigation measures to prevent appearance of synanthropic species within the Project area.</li> <li>Consideration should be given to the use of local species of flora for land reclamation in order to prevent or mitigate impacts associated with invasion of alien species.</li> </ul>	<p>As part of the recultivation plan ensure local species of flora have been identified and included in the design. Ensure that the company who has been awarded the contract to recultivate the land has appropriate measures in place to prevent or mitigate against the invasion of alien species.</p>	<p>Reports on the development of the recultivated areas against the approved design.</p>	<p>Environmental manager (Suren Yeritsyan)</p> <p>Specialized organization (ArmForest SNCO)</p>	<p>Annual Reporting to be completed by the end of each recultivation year.</p>		<p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
36.	<ul style="list-style-type: none"> <li>■ Estimate emissions of greenhouse gases generated during the Project implementation (direct and indirect emissions for production plant, mine and landfill) when the technical design is finished</li> <li>■ Determine the Project's significance in terms of GHG emissions using IFC significance criteria.</li> <li>■ Develop measures to reduce GHG emissions associated with the Project and develop relevant reporting to demonstrate efficiency.</li> <li>■ Implementation of GHG monitoring measures, keep record of GHG emissions generated by the</li> <li>■ Project and implementation of GHG reduction measures.</li> </ul>	<p>Assess the generation of greenhouse gas emissions, carbon dioxide will constitute the bulk of the greenhouse gas emission. Input data required will include:</p> <ul style="list-style-type: none"> <li>■ Annual fuel usage;</li> <li>■ The carbon intensity of fuel;</li> <li>■ Emissions from the import of grid electricity.</li> </ul> <p>The result of this calculation can then be compared to the IFC significance criteria.</p> <p>Investigate and implement measures to reduce energy consumption and monitor the effectiveness.</p>	A greenhouse gas emissions calculation and comparison with the IFC significance criteria.	<p>Environmental protection unit of Lernametalurgiai institute cjsc</p> <p>Environmental manager (Suren Yeritsyan)</p>	December 2013		Construction Operational	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
37.	<ul style="list-style-type: none"> <li>■ Assessment of emissions related to fugitive sources (inclusion of relevant sources and estimates of actual emission levels) and off-site air quality impacts</li> <li>■ Perform air quality impact assessment based on meteorological dispersion modelling</li> <li>■ EKF to receive monitoring results of the air emissions from point sources upon commissioning and annually thereafter</li> <li>■ EKF to receive monitoring results from air quality sampling points located in the village of Teghout (the location of sampling points to be approved by EKF)</li> <li>■ It is recommended that Teghout integrates the issues related to strategic considerations into the environmental management system</li> <li>■ Monthly indoor air quality measurements shall be conducted at the production plant during the first year of operation and semi-annually thereafter. The measurements shall be implemented such that compliance with the IFC General EHS Guidelines can be documented</li> <li>■ The monitoring program shall form an integral part of the OHS Management System</li> </ul>	<p>Undertake air quality monitoring as per the methodology designed by WSP. This includes monitoring of air quality during the construction and operational phase of the project.</p> <p>On an annual basis report the results of the air emissions monitoring to EKF.</p> <p>Update the EMS objectives and targets to provide focus to any issues identified through the monitoring regime.</p>	<p>Results from the dispersion modelling and an updated chapter in the ESIA determining potential impacts and mitigation measures.</p> <p>Annual reports to EKF on the monitoring of air quality undertaken as per the approved monitoring plan.</p> <p>Monitoring systems and procedures implemented and maintained in line with international standards (ISO 18001)</p>	<p>Environmental protection unit of Lernametalurgiai institute cjsc</p> <p>Environmental manager (Suren Yeritsyan)</p>	January 2014		Construction Operational	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
38.	<p>Energy Efficiency:</p> <p>In addition to the measures proposed in the Project it is recommended to consider:</p> <ul style="list-style-type: none"> <li>■ possibilities of energy consumption reduction by using cogeneration facilities instead of the steam and water-heating coppers having higher efficiency of energy use due to the generation of electric power from natural gas.</li> <li>■ possibilities for use of wastewaters</li> <li>■ possibilities for use of waste</li> <li>■ calculate rate of use of power resources (gas, heat, water) per a unit of commodity output.</li> </ul>	<p>Undertake a cost benefit analysis to investigate the potential to implement a cogeneration facility.</p> <p>Undertake an options appraisal for alternative uses of wastewaters and other wastes.</p> <p>Develop a system of KPIs. The KPIs should be calculated using normalised indicators (e.g. tonne of output).</p> <p>Decide on how to normalise the indicators for gas, electricity and water.</p> <p>Develop a procedure to monitor the process efficiency. The procedure will define the methodology to collect the information.</p> <p>Report annually, to EKF, on the KPIs.</p>	A cost benefit analysis of implementing cogeneration facilities.	<p>Lernametalurgiai institute cjsc</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	<p>KPIs - December 2013</p> <p>Annual reporting – on going</p> <p>Cost benefit analysis – October 2014</p> <p>Options appraisal – October 2014</p>		<p>Construction</p> <p>Operational</p>	



Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
39.	<ul style="list-style-type: none"> <li>■ Development of a preliminary closure plan for the mine, process plant and tailing.</li> <li>■ As required by IFC EHS Guidelines for Mining, a mine closure plan that incorporates both physical rehabilitation and socio-economic considerations should be an integral part of the project life cycle and should be designed so that: <ul style="list-style-type: none"> <li>- Future public health and safety are not compromised;</li> <li>- The after-use of the site is beneficial and sustainable to the affected communities in the long term;</li> <li>- Adverse socio-economic impacts are minimized and socioeconomic benefits are maximized.</li> <li>- The suggested format of the Draft Closure Plan has been provided.</li> </ul> </li> <li>■ Discussion of the Preliminary Closure Plan for the Project facilities with Public.</li> <li>■ Cost estimates and funding considerations for the closure of the Project facilities.</li> <li>■ Conduct periodic review of the Closure Plan</li> </ul>	<p>Develop a closure plan for the mine, plant and tailings dam. Things to consider will include:</p> <ul style="list-style-type: none"> <li>- Removal of potentially polluting sources, such as oils, wastes, process equipment.</li> <li>- Ground contamination assessment</li> <li>- Rehabilitation of the open cast mine.</li> <li>- Estimation of costs</li> </ul> <p>Communicate this plan with the local communities, making the document publically available on the internet and in public locations such as the local library.</p> <p>Periodically review and update (if necessary) throughout the life of the project.</p>	<p>An approved closure plan.</p> <p>Communication / disclosure of this plan to the local community.</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>PR department (Vahram Avagyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	<p>Approved mine closure plan - September 2013. To be reviewed annually.</p> <p>Communication of the plan – October 2013</p>		Operational	
<b>Operational issues during ongoing preparatory and construction works</b>								
40.	<p>Preparatory felling works:</p> <ul style="list-style-type: none"> <li>■ Arrange supervision over completeness and quality of nature protection measure implementation by contractors during felling, and applicable requirements of the best practice in the field of forest use be included in contractual obligations.</li> </ul>	<p>Notify the Ministry of Nature Protection of logging activities and submit reports on the types and numbers of trees felled.</p> <p>Submit a logging plan to the Ministry of Nature Protection. Prepare an inventory for the contractor and monitor compliance against this.</p>	<p>Reports submitted to the Ministry of Nature Protection on felling activities.</p> <p>An approved logging plan.</p>	<p>Deputy general director (Ruben Papoyan)</p> <p>Specialized organization</p> <p>Environmental manager (Suren Yeritsyan)</p>	<p>Reports to be submitted annually by the end of each year.</p> <p>Logging plan - complete.</p>		Pre-Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
41.	<p>Preparatory works for construction:</p> <p>Organize a supervision over the preparatory works with particular attention to the following:</p> <ul style="list-style-type: none"> <li>■ Prevention of waste burial during preparatory works</li> <li>■ Prevention of slope filling with ground, including slopes of forested gorges</li> <li>■ Terracing slopes of roads</li> <li>■ Arrangement of temporary dumps, based on the risk assessment related to the emergency situations</li> </ul>	<p>Ensure the points listed are communicated to the workers involved in the preparatory works. Appoint a supervisor(s) who is adequately trained to oversee the activities mentioned in this item.</p>	<p>Consider nominating / appointing a specifically trained supervisor to provide 'watching brief' and monitoring support covering the defined items under item 43.</p>	<p>Deputy general director (Ruben Papoyan)</p> <p>Environmental manager (Suren Yeritsyan)</p>	April 2013		<ul style="list-style-type: none"> <li>■ Pre-Construction</li> </ul>	
42.	<ul style="list-style-type: none"> <li>■ Develop an overall waste management plan outlining the principles for waste management and organizational structure and capacities needed for an appropriate waste management throughout the project lifetime. The overall waste management plan shall be in place and approved prior to financial close.</li> <li>■ The overall management plan should include principles and standards for storage of potentially acid generating materials to be temporarily stored in the waste dump site area.</li> <li>■ It is recommended that Teghout cjsc integrates the issues related to strategic considerations into the environmental management system.</li> </ul>	<p>Develop a waste management plan which includes:</p> <ul style="list-style-type: none"> <li>■ Waste management practices such as handling requirements, roles, responsibilities and training;</li> <li>■ Description of waste categories;</li> <li>■ Descriptions of on site storage areas for individual waste categories;</li> <li>■ Mitigation measures for preventing sub-surface impacts of hazardous substances;</li> <li>■ Health and safety measures; and</li> <li>■ Waste disposal routes.</li> </ul>	<p>An approved Waste Management Plan.</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p>	April 2013		Pre-Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
43.	<p>Operation of the constructors' camp and camps on construction sites, measures are to be taken in order to meet the requirements of the License on wastewater discharge during the construction period:</p> <ul style="list-style-type: none"> <li>■ To consider construction of treatment facilities</li> <li>■ To organize wastewater collection on remote areas into waterproofed septic tanks equipped with level indication</li> <li>■ To organize transportation and internal registration of wastewater from remote areas to treatment facilities.</li> </ul>	<ul style="list-style-type: none"> <li>■ Develop a plan for the management of waste water from the construction camp. This will need to include either adequate onsite wastewater treatment or bulk storage of the waste water and arrangements for this to be tinkered offsite for treatment.</li> </ul>	<ul style="list-style-type: none"> <li>■ Plan for wastewater management from construction camp;</li> </ul>	Environmental manager (Suren Yeritsyan)	November 2013		Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
44.	<p>Use of roads:</p> <p>The following measures are to be taken to minimize the environmental impacts:</p> <ul style="list-style-type: none"> <li>■ Develop a map showing all the permanent and temporary roads used on the Project area during the construction period</li> <li>■ Coordinate the use of roads with local communities</li> <li>■ Benching and planting of grass on the slopes of permanent and temporary roads</li> <li>■ Reclaim unused rocks to prevent erosion</li> <li>■ Arrange bridges over permanent and seasonal water courses at permanent and temporary roads</li> <li>■ Drain the temporary water streams collected on road sections, and to ensure that pollutants are not coming to the rivers</li> <li>■ Strengthen road sections vulnerable to erosion and slopes</li> <li>■ Arrange a washing site for the all transport used by the Company (including contracted one), including wastewater treatment</li> </ul> <p>(Note: recommendations on road drainage are detailed in the WSP Water Management Plan)</p>	<p>Develop a schedule detailing the expected truck movements to and from the site, communicate this to the local communities. Disclose the map of permanent and temporary roads associated with the project.</p> <p>Develop and implement a procedure to ensure vehicles are washed prior to leaving site to minimise the transportation of debris offsite. Communicate this procedure to relevant personnel and contractors. A designated washing bay should be designed to ensure the water runoff is collected for reuse or discharged to sewer (with prior permission). Designated bays should be clearly signed.</p> <p>It is proposed that metalled roads are to be provided with a piped drainage system with flows passing through a suitable treatment package plants prior to discharge to local watercourses. It is recommended that pollution control measures for remaining un-surfaced roads be developed with an appropriate level of treatment for contaminants to be provided. This could include simple measures such as the provision of filter strips / grassed ditches adjacent to the roads to slow down the rate of discharge, reduce erosion and remove hydrocarbons en-route to the watercourse discharge point.</p> <p>Implement a monitoring regime to assess the effectiveness of the draining system.</p> <p>(See the updated WSP Water Management Plan)</p>	<p>A schedule of expected truck movements. Disclosure of this to the local community.</p> <p>A complete map of permanent and temporary roads associated with the project.</p> <p>A developed and maintained vehicle washing procedure.</p> <p>Installation of an effective surface water drainage system from site roads.</p>	<p>Mapping specialist (Vardges Tovmasyan)</p> <p>Deputy general director (Artashes Boshyan)</p> <p>Landscaping service (Seyran Ohanyan)</p> <p>Deputy general director (Ruben Papoyan)</p> <p>Legal department (Sahak Karapetyan)</p> <p>Road construction and service department (Hamlet Titanyan)</p>	<p>August 2013</p> <p>Surface water drainage system – continuous</p>		<p>Pre-construction</p> <p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
45.	<p>Unorganized waste storage. The following measures are to be taken to reduce environmental impact:</p> <ul style="list-style-type: none"> <li>Conduct an inventory the waste for the construction period, and develop appropriate approaches to acceptable waste handling</li> <li>Check whether garbage heaps are present on the Project implementation area and remove (if any)</li> <li>Sample soil on main garbage heap areas and areas located near water courses</li> </ul> <p>Consider the use of incinerators and temporary waste accumulation sites, including consideration jointly with local communities.</p>	<p>Develop a waste management plan which includes:</p> <ul style="list-style-type: none"> <li>Waste management practices such as handling requirements, roles, responsibilities and training;</li> <li>Description of waste categories;</li> <li>Descriptions of onsite storage areas for individual waste categories;</li> <li>Mitigation measures for preventing sub-surface impacts of hazardous substances.</li> </ul> <p>Undertake soil sampling of designated waste storage area. Samples must be tested to determine the presence of heavy metals.</p>	<p>An approved Waste Management Plan.</p> <p>Results from the sampling undertaken</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Utility service (Ashot Khechikyan)</p>	<p>Waste management plan – April 2013</p> <p>Soil sampling - November 2013</p>		<p>Pre-Construction</p> <p>Construction</p> <p>Operational</p>	
46.	<ul style="list-style-type: none"> <li>Based on readily available information develop a full water balance assessment including a list of recommended actions to partly complete the assessment, partly to manage significant impacts related to the water balance of the Project prior to financial close.</li> <li>All areas for designated storage of fuel, lubricants and other liquid hazardous substances with hardstanding, storage tank leak detection systems and oil/water separators where there is drainage.</li> <li>Water quality monitoring results should be reported as development curves per monitoring parameter. Any significant variation must be commented upon and associated with a proposed corrective action measure for preventing re-occurrences.</li> <li>Water quality monitoring for the water course downstream of the tailings dam shall be initiated not later than January 2013 in order to ensure that a full year's data is collected before commencing the operation of the tailings area.</li> </ul>	<p>Develop a water use balance for the production site, tailings area and general dust control systems. Identify critical situations with regards to water use or wastewater discharge respectively where draught or flooding that may lead to adverse impacts on water bodies.</p> <p>Ensure all above ground storage tanks are stored on concrete hardstanding. Storage tanks should be located within a secondary containment system or 'bund' which is capable of holding at least 110% of the container's capacity. If two or more tanks are located within the same bund the bund should be capable of holding either 110% of the maximum capacity of the largest tank or 25% of the total capacity of all the tanks, whichever is the greatest. A leak detection system should also be fitted.</p> <p>Ensure there are drainage interceptors where drains are present in the storage area.</p> <p>Undertake water quality monitoring as per the monitoring plan developed by WSP.</p>	<p>An approved water balance and wastewater management plan.</p> <p>A drainage plan.</p> <p>Results and reports from water quality monitoring undertaken as per the monitoring plan.</p>	<p>Specialized organization (WSP)</p> <p>Head of department for supervising construction works (Alik Gavjyan)</p> <p>Environmental manager (Suren Yeritsyan)</p>	<p>Water management plan – April 2013</p> <p>Drainage Plan - August 2013</p> <p>Monitoring results to be undertaken as per the monitoring plan and annual reporting to EKF.</p>		<p>Pre-Construction</p> <p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
47.	<p>Fertile soil storage:</p> <p>The following measures to preserve the fertile soil:</p> <ul style="list-style-type: none"> <li>■ Develop a map of fertile soil removal and storage areas</li> <li>■ Ensure fertile soil storage site conformity with Project materials</li> <li>■ Organize control over accurate fulfilment of the Project requirements</li> </ul>	Assign appropriate personnel to ensure correct storage of the fertile soil.	A map of soil storage areas.	<p>Deputy general director (Ruben Papoyan)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Mapping specialist (Vardges Tovmasyan)</p>	July 2013		Construction	
48.	<p>Location of transport and storage of fuel and lubricants:</p> <p>It is recommended to equip the storage areas with hard pavement and leaks protection in order to prevent any potential pollution of water courses, i.e.:</p> <ul style="list-style-type: none"> <li>■ To equip the temporary fuel and lubricant storage located within the boundaries of Teghout community 30m southeast of the main office building with hard pavement and arrange secondary protection under tanks,</li> <li>■ To provide concrete water insulation or levies in the temporary fuel and lubricants storage area next to the complex administration building on the bank of the Shnogh river; parking place on the main construction site, and parking place on the planned turquoise waste dump area.</li> <li>■ To provide roofed parking areas for vehicles and equipment; they have to be parked in open areas in the close vicinity of the water streams the water from which is used in Shnogh (the parking area next to the complex admin building) and Kharatanots (the parking area in the construction base); and</li> <li>■ To equip the fuel and lubricants storage area near the complex admin building and the transformer substation in the area of the former metal powder shop with the hard pavement.</li> </ul>	<p>Tanks should be stored on a concrete hardstanding. Storage tanks should be located within a secondary containment system or 'bund' which is capable of holding at least 110% of the container's capacity. If two or more tanks are located within the same bund the bund should be capable of holding either 110% of the maximum capacity of the largest tank or 25% of the total capacity of all the tanks, whichever is the greatest.</p> <p>Provide roofed parking to minimise the potential for oils to be washed into water streams. Where this is not practical agree an alternative with EKF.</p>	<p>To implement:</p> <p>Hard standing and leakage protection systems in the areas defined, including spill kits and bunding.</p> <p>To relocate the temporary fuel and lubricant storage area.</p> <p>To provide an adequate pollution prevention system, including sealed concrete areas which will avoid drainage direct into the River.</p>	<p>Deputy general director (Ruben Papoyan)</p> <p>Head of department for supervising construction works (Alik Gavjyan)</p>	April 2014		<p>Construction</p> <p>Operational</p>	



Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
49.	<ul style="list-style-type: none"> <li>■ The hazardous materials policy should include a principle of continuously evaluating the possibility of substituting hazardous materials</li> <li>■ All employees performing work involving hazardous materials must have received appropriate safety training before commencing such work</li> <li>■ Provide appropriate preventive measures or alternatively personal protection equipment to mitigate the risk of health and safety exposure from use of storage of hazardous materials</li> <li>■ Implement AST management procedures (registration of AST type, age, contents, capacity and whether equipped with secondary containment)</li> <li>■ Implement procedure for integrity testing and recording of storage tanks &gt; 6,000 ltr.</li> </ul>	<p>Conduct an options appraisal to investigate the potential of substituting hazardous materials.</p> <p>As part of the training matrix identify the personnel who will require training on the safe handling of hazardous materials.</p> <p>Ensure adequate PPE is provided. Consider the need for protective clothing, face and eye protection and hand protection.</p> <p>Prepare an inventory of Above Ground Storage Tanks (AST) detailing the age of the tank, contents, capacity and containment arrangements.</p>	<p>An options appraisal to investigating the potential of substituting hazardous materials.</p> <p>A training matrix, which identifies the training required in each job role (to include the handling of hazardous materials)</p> <p>Complete and approved risk assessments associated with each hazardous substance. Provision of appropriate PPE.</p> <p>An inventory of Above Ground Storage Tanks (AST) detailing the age of the tank, contents, capacity and containment arrangements.</p>	<p>Environmental manager (Suren Yeritsyan)</p> <p>Safety manager (Samvel Yeritsyan)</p>	<p>Training – July 2014</p> <p>Options Appraisal – November 2013</p> <p>Risk Assessments – December 2014</p> <p>Inventory of AST – December 2014</p>		<p>Construction</p> <p>Operational</p>	
<b>Health and Safety</b>								



Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
50.	<p>Implement a Company Road Safety Standard.</p> <ul style="list-style-type: none"> <li>■ Develop and implement the Company's road safety standard</li> <li>■ Conduct road safety training for contractor personnel</li> <li>■ Ensure compliance with the standard's requirements (through audits and inspections), and develop the reporting format to demonstrate standard compliance efficiency</li> <li>■ Periodic review and update of the Standard</li> </ul>	<p>Establish, implement and maintain a road safety management system. The management system should include:</p> <ul style="list-style-type: none"> <li>■ Risk factors e.g. traffic volume and mileage, volume of product provided by Teghout cjsc;</li> <li>■ Final safety outcome factors e.g. the number of accident and injuries;</li> <li>■ Intermediate safety outcome factors: <ul style="list-style-type: none"> <li>- Safe planning, design, operation and use of the road network. This includes use of appropriate roads depending on vehicle, use of safety equipment, safe driving speed, journey planning.</li> <li>- The safe entry and exit of vehicles and road users to the road network. Taking into account the road worthiness of vehicles, securing of loads, vehicle load capacity and the appropriate authorisation for workers to drive the vehicles.</li> <li>- Emergency response procedure and first aid provision.</li> </ul> </li> </ul> <p>Ensure this is communicated to all appropriate personnel and training needs are identified.</p>	A developed and implemented Road Safety Standard.	<p>Environmental manager (Suren Yeritsyan)</p> <p>Safety manager (Samvel Yeritsyan)</p> <p>Road construction and service department (Hamlet Titanyan)</p> <p>Head of motor transport department (Ashot Yegoryan)</p> <p>Head of total factory mechanization department (Sergey Meliqsetov)</p> <p>Head of heavy vehicles department (Armen Gevorgyan)</p>	September 2013		<p>Pre-Construction</p> <p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
51.	<p>Implementation of a procedure to monitor EHS compliance of contractors.</p> <ul style="list-style-type: none"> <li>■ Include in the selection procedure for contractors the requirement to submit concise information on their EHSS management system (including the system for identification of OHS risks, available measures for prevention of incidents and accidents) and evaluate EHSS performance;</li> <li>■ Organise supervision over completeness and quality of nature protection measure implementation by contractors during felling, and applicable requirements of the best practice in the field of forest use be included in contractual obligations.</li> <li>■ Contractually oblige the contractors to conduct a Risk Assessment for the jobs performed, identify OHS risks and allocate adequate resources to ensure safe and healthy working conditions.</li> <li>■ Contractually oblige contractors to provide regular OHS reporting (on immediate base - in case of incidents/accidents and routine OHS – regularly)</li> <li>■ Conduct regular audits to verify availability of organisational, design, reporting and other documents related to contractors' EHS performance at workplaces</li> <li>■ Periodic review of the procedure</li> </ul>	<p>Ensure that the appointed contractor has an EHSS policy and management system in place and include in the contract a clause to ensure the contractor reports on EHSS performance.</p> <p>Carry out periodic audits on the appointed contractor.</p> <p>Ensure the contractor has undertaken a risk assessment and identified the OHS risks associated with the tasks. Appropriate PPE should be supplied to the workforce to mitigate against the identified risks.</p> <p>Ensure the awarded contractors conduct regular reviews and reports on their OHS performance. Ensure they have implemented an accident / incident / near miss reporting system.</p> <p>Regular audits should be undertaken to review the performance of the contractor. Their EHS policy and procedures should be reviewed as part of the audit.</p> <p>Audits should include (but are not limited to):</p> <ul style="list-style-type: none"> <li>- Review of official documents, including permits, records and reports;</li> <li>- Interviews with management and employees on performance;</li> <li>- Documentation of findings and observations;</li> </ul> <p>Assigning actions against each finding and appointing a responsible person against each action.</p>	<p>A schedule of audits to monitor EHS compliance of contractors.</p> <p>Audit reports detailing the findings of the compliance audits.</p> <p>Risk assessments of all tasks carried out by the contractors.</p> <p>OHS reports submitted by the contractor.</p>	<p>Safety manager (Samvel Yeritsyan)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Legal department</p>	<p>Contractor risk assessments – July 2013 (these will be reviewed annually and when changes in activities or contractors are experienced)</p> <p>Schedule of audits - August 2014</p>		<p>Pre-Construction</p> <p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
52.	<p>Occupational Health and Safety Management:</p> <ul style="list-style-type: none"> <li>■ Develop and introduce OHS policy</li> <li>■ Develop measures for elimination, mitigation or control of impacts of hazardous industrial factors and substances on workers during construction and operation stages.</li> <li>■ Employ full time manager responsible for H&amp;S issues for on-going supervision over the H&amp;S issues and conduct regular inspections together with the manager</li> <li>■ Identify hazards and assess risks at workplaces according to the international requirements.</li> <li>■ Based on the results of the risk identification to conduct regular trainings on safety requirements at workplaces before the beginning of works.</li> </ul>	<p>Develop and implement an OHS management system according to OHSAS 18001.</p> <p>Undertake a gap analysis / initial review against the current status of performance.</p> <p>Develop an environmental aspects register. This should detail activated with the potential to have impacts on the environment. A significance rating should be assigned to each aspect.</p> <p>Develop a register of applicable legislation.</p> <p>Develop clear objectives and targets.</p> <p>Develop systems and operations procedures.</p> <p>Appoint a management representative to be responsible for the implementation and maintenance of the OHS management system. The responsible person should report on performance and recommended improvement actions.</p> <p>Review the OHS management system regularly to ensure suitability, adequacy and effectiveness.</p> <p>Develop a training matrix, which identifies training needs. Ensure training needs are fulfilled.</p>	<p>OHS systems developed and maintained in line with international standards (ISO 18001).</p>	<p>Specialized organization (WSP)</p> <p>Safety manager (Samvel Yeritsyan)</p> <p>Head of deputy director (Artashes Boshyan)</p> <p>Legal department</p>	July 2015		<p>Construction</p> <p>Operational</p>	
53.	<p>Documentation and reporting on occupational accidents, diseases and incidents.</p> <ul style="list-style-type: none"> <li>■ Introduce procedure on registration of near-misses and cases of hazardous behaviour.</li> </ul>	<p>Develop an accident, incident and near miss reporting form. This should detail the person involved, the date and time it occurred and the nature and significance of the event. A brief description of the event should be documented along with any injuries that have occurred and any corrective actions taken.</p>	<p>Accident, incident and near miss reports.</p>	<p>Safety manager (Samvel Yeritsyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	Completed		<p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
54.	<p>Fire Safety</p> <ul style="list-style-type: none"> <li>■ Conduct risk identification and assessment related to the fire safety at the current stage</li> <li>■ Conduct risk identification and assessment related to the fire safety for construction and operation stages</li> <li>■ Develop fire safety plan as part of Emergency situations plan for construction and operation stages and ensure that there is a sufficient capacity on site to implement the Plan</li> <li>■ Conduct regular trainings on fire safety</li> <li>■ Equip existing objects with fire extinguishers, fire machines and other equipment.</li> </ul>	<p>Identify fire hazards i.e. heat and fuel sources.</p> <p>Identify the people who are at risk.</p> <p>Evaluate the risks and take measures where applicable to minimise the risks. Take actions to protect your premises and people from fire.</p> <p>Keep a record of any fire hazards and have a clear plan of how to prevent fire and how to react in the event of fire. Ensure this is communicated to all staff. Assign fire wardens and ensure they are fully trained and aware of their responsibilities.</p> <p>Ensure this is reviewed on a regular basis to capture any changes. Conduct refresher training on a regular basis.</p>	<p>Fire risk assessment.</p> <p>Fire Safety Plan / emergency plan</p> <p>Training records.</p>	<p>Safety manager (Samvel Yeritsyan)</p> <p>Deputy general director (Ruben Papoyan)</p> <p>Specialized organization (State Fire Inspectorate)</p>	January 2014		<p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
55.	<ul style="list-style-type: none"> <li>■ The H&amp;S Management System shall comprise detailed instructions on H&amp;S measures to be implemented for on-site construction works, including details for contractors working on-site</li> <li>■ Records of accidents, incidents and near-misses shall be registered and recorded. The OHS management system shall document evaluation of such records and recommendations to the management for improvements.</li> <li>■ Records of supervision inspections and any corrective action plan and their completion shall be filed by the company and disclosed to EKF upon request</li> <li>■ Integrate physical working conditions as part of the work place assessment process and implement such issues in the OHS Management System</li> <li>■ Include machinery safety aspects into the relevant work place assessments</li> <li>■ Integration of Machinery safety procedures into the OHS Management System</li> <li>■ Any fatalities must be reported to EKF immediately</li> <li>■ Integrate the Emergency Response Program in the OHS Management System in accordance with IFC General EHS Guidelines (2007) and IFC EHS Guidelines for Mining (2007)</li> <li>■ Complete work place assessment for main work operations for the remainder of the construction period and for the operational phase</li> <li>■ Develop an OHS management system which is implemented by mid 2015 to a level certifiable according to OHSAS 18001</li> <li>■ The capacity and capabilities of the OHS organization shall be evaluated on a regular basis as part of the</li> </ul>	See Point 19.	<p>Accident, incident and near miss reports.</p> <p>OHS audit reports detailing findings of the audit and the associated corrective actions.</p> <p>A corrective action plan.</p> <p>OHS systems developed and maintained in line with international standards (OHSAS 18001).</p> <p>A grievance mechanism.</p> <p>An Emergency response procedure.</p>	<p>Specialized organization (WSP)</p> <p>Safety manager (Samvel Yeritsyan)</p> <p>Deputy general director (Artashes Boshyan) related to grievance mechanism</p>	July 2015		<p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
	Management's Review under the OHS Management System							
56.	<p>Procedures for introducing Site OHS requirements for contractors to conform to during on-site activities:</p> <ul style="list-style-type: none"> <li>■ The OHS management system shall include a grievance mechanism for employees of Teghout cjsc and third parties working on the Project</li> <li>■ Monthly indoor air quality measurements shall be conducted during the first year of operation and semi-annually thereafter. The measurements shall be implemented such that compliance with IFC General EHS Guidelines (2007) and IFC EHS Guidelines for Mining (2007) can be documented</li> <li>■ The monitoring program shall form part of the OHS Management System</li> <li>■ Noise and vibration issues shall be covered by the OHS supervision and the OHS management system, including review of work operation procedures for blasting.</li> <li>■ Internal noise measurements shall be perform to document compliance with IFC General EHS Guidelines</li> </ul>	See points 19, 32 and 38.	<p>OHS systems developed and maintained in line with international standards (ISO 18001).</p> <p>An internal grievance mechanism.</p> <p>Air quality monitoring reports.</p> <p>Internal noise monitoring reports.</p>	<p>Specialized organization (WSP)</p> <p>Safety manager (Samvel Yeritsyan)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Deputy general director (Artashes Boshyan)</p>	<p>July 2015</p> <p>Monitoring reports to be submitted annually</p>		<p>Construction</p> <p>Operational</p>	
<b>Risk</b>								

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
57.	<ul style="list-style-type: none"> <li>■ Conduct an inventory of highly hazardous materials to be used during the construction stage</li> <li>■ Develop list of major hazardous materials including information about its supply, consumption, temporary storage conditions and amount during the Project operation stage.</li> <li>■ Review the use of hazardous materials and substances hazardous materials subject to international bans or phase outs during the Project construction and operation stages.</li> <li>■ Develop an instruction on management of highly hazardous materials including prevention of leaks during storage, transportation and use of hazardous materials</li> <li>■ The storage areas for hazardous substances should be provided, for example, with the following (as far as this does not contradict to Armenian regulations): <ul style="list-style-type: none"> <li>- Ground cover to prevent leakages from migrating into soil i.e. Proper hydraulic insulation of areas used for unloading/loading of fuel and lubricants for filling of vehicles and machinery and proper hydraulic insulation of fuel and lubricant storage areas;</li> <li>- Lateral control such as berms to contain any spillages. Above ground storage should be bunded with a freeboard capacity, the bunded area base should be impermeable and collected rainwater will be contained and pumped or transported to the wastewater treatment unit.</li> <li>- Roof covering to protect from rainfall;</li> <li>- Controlled access to prevent unauthorized entry;</li> <li>- Signs to indicate hazards (i.e., hazardous materials storage);</li> </ul> </li> </ul>	<p>Develop an inventory of all highly hazardous materials to be used on site; this should detail information of the supply, consumption and storage.</p> <p>Review the potential for the use of alternative materials.</p> <p>Develop and implement a procedure for the management of hazardous materials.</p> <p>Ensure the storage of hazardous materials complies with Armenian regulations and where possible satisfies the details listed.</p>	<p>An inventory of highly hazardous materials.</p> <p>A management plan for handling hazardous materials.</p>	<p>Safety manager (Samvel Yeritsyan)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Security service of Teghout cjsc</p>	<p>Inventory of hazardous materials – September 2013</p> <p>Management Plan – January 2014</p>		<p>Construction</p> <p>Operational</p>	



Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
	<ul style="list-style-type: none"> <li>- Information should be available at this location on the hazards and characteristics of materials stored onsite;</li> <li>- Non compatible materials (such as acids and alkalis) should not be stored adjacent to one another;</li> <li>- Adequate emergency equipment/materials should be available at the site, including eye wash bottles, fire suppression equipment and sorbent materials.</li> <li>- Develop a policy for prohibiting / limiting the use of asbestos-containing materials during the Project construction, operation and closure as well as highly hazardous materials (ozone depleting materials, PCB and PCT).</li> </ul>							
58.	<ul style="list-style-type: none"> <li>■ Develop an inventory of cooling agents used in air conditioner units in connection with on-site building structures and develop a replacement plan for CFC and HCFC containing cooling agents</li> </ul>	Develop an inventory of all refrigerant containing equipment on site. The inventory should detail the model and make of the equipment along with details of the type and quantity of refrigerant present in each unit. Where CFCs and HCFCs are in use develop a phase out plan to introduce f-gases or good practice alternatives such as water based or chemical based systems (e.g. ammonia).	A register of refrigerants is required to be maintained and replacements confirmed to EKF.	Environmental manager (Suren Yeritsyan) Procurement department	January 2015 – this should be reviewed and updated annually.		Construction Operational	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
59.	<p>Risk assessments</p> <ul style="list-style-type: none"> <li>Undertake a risk assessment study in line with the requirements of IFC EHS Guidelines and to develop mitigation/action plans from such an assessment, if this has not already been undertaken. It is recommended that consideration should be given to undertaking a HAZID/HAZOP study and development of mitigation/action plans from such a study</li> </ul>	<p>Undertake a hazard assessment, the level of risk should be established through the following assessment process:</p> <ul style="list-style-type: none"> <li>The types and amounts of hazardous materials present in the project, provide the following information: <ul style="list-style-type: none"> <li>Name and description of the hazardous material</li> <li>Classification</li> <li>Internationally accepted regulatory reporting threshold or national equivalent</li> <li>Quantity used per month</li> <li>Characteristics</li> </ul> </li> <li>Analysis of potential spill and release scenarios, where available</li> <li>Analysis for the potential for uncontrolled reactions such as fire and explosion</li> <li>Analysis of potential consequences based on the physical geographical characteristics of the project site, this should include information such as distance to settlements, water and other environmentally sensitive areas.</li> </ul> <p>According to IFC standards the hazard assessment should be performed by specialised professionals using internationally accepted methodologies. i.e. Hazardous Operations Analysis (HAZOP) and Hazard Identification (HAZID).</p> <p>Develop a Hazardous Materials Management Plan proportionate to the level of risks associated with the production, handling, storage and use of hazardous materials.</p>	<p>Hazard assessments using internationally accepted methodologies i.e. Hazardous Operations Analysis (HAZOP) and Hazard Identification (HAZID).</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Safety manager (Samvel Yeritsyan)</p>	November 2014		Operational	
<b>Public Health and Safety</b>								

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
60.	<ul style="list-style-type: none"> <li>Arrangement of areas of sanitary protection of sources of drinking water supply of local people (villages Teghout and Shnogh) with effective control over protection of water supply sources.</li> </ul>	Ensure the safety of drinking water supply through the use of a comprehensive risk assessment and risk management approach that encompasses all steps in water supply from catchment to consumer.	Implementation of arrangements to provide adequate protection of the drinking water sources of the two villages. Agree the proposed arrangements with EKF.	Deputy general director (Artashes Boshyan)	November 2013		Pre-Construction	
61.	<ul style="list-style-type: none"> <li>Noise survey be performed as part of the updating of the E(S)IA and future monitoring</li> <li>Based on the survey define a noise monitoring program that includes sensitive residential areas and natural habitat locations</li> </ul>	See point 32.	<p>An updated noise chapter that forms part of the ESIA.</p> <p>A noise monitoring programme.</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p> <p>Environmental protection unit of Lernametalurgiai institute cjsc</p>	<p>ESIA chapter – March 2014</p> <p>November 2013</p>		Pre-Construction Construction	
<b>National Compliance</b>								
62.	<ul style="list-style-type: none"> <li>Confirmation of which party is responsible for maintaining environmental permitting documents and then confirmation of availability and validity of these documents. Should lack of permitting documents be identified, these will need to be addressed to ensure compliance with national regulation.</li> </ul>	Identify the environmental permits that should be obtained for the Project and ensure these have been attained from the relevant authority.	Identify the organisation/unit which is required to maintain all permitting documents. Officially agree this in writing, if another party is responsible, along with an agreed record of the documents which must be maintained, provided and to what frequency.	Environmental manager (Suren Yeritsyan)	June 2013		Pre-Construction	
63.	<ul style="list-style-type: none"> <li>Develop an overall waste management plan outlining the principles for waste management and organizational structure and capacities needed for an appropriate waste management throughout the project lifetime. The overall waste management plan shall be in place and approved prior to financial close.</li> <li>The overall management plan should include principles and standards for storage of potentially acid generating materials to be temporarily stored in the waste dump site area.</li> </ul>	<p>Develop a waste management plan which includes:</p> <ul style="list-style-type: none"> <li>Description of waste categories;</li> <li>Descriptions of onsite storage areas for individual waste categories;</li> <li>Mitigation measures for preventing sub-surface impacts of hazardous substances;</li> <li>Waste management practices such as handling requirements, roles, responsibilities and training;</li> <li>Health and safety measures; and</li> <li>Waste disposal routes.</li> </ul>	An approved Waste Management Plan.	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p>	April 2013		Pre-construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
64.	<ul style="list-style-type: none"> <li>To prevent location of the open parking lots at the office area within the water protection zone of the Shnogh River.</li> </ul>	Ensure the car park for the office is not located within the river protection zone.	Open parking lots situated outside of the water protection zone.	Deputy general director (Ruben Papoyan) Head of department for supervising construction works (Alik Gavjyan)	May 2014		Construction	
65.	<ul style="list-style-type: none"> <li>Road crossings of creeks should be equipped with bridges to avoid and prevent pollution of water bodies with oil products.</li> </ul>	Ensure road crossings of creeks are equipped with bridges with suitable drainage to prevent pollution of water courses in the event of a spillage.	Bridges implemented, for all river crossings of the road, with suitable drainage to prevent pollution.	Deputy general director (Ruben Papoyan)	February 2014		Construction	
66.	<ul style="list-style-type: none"> <li>To prevent leaks of petroleum products on the soil surface at the temporary fuel and lubricant store near the mine office building; places of storage of machinery and equipment, in the course of the storage of construction debris</li> <li>To arrange secondary containment at storage tanks and no hydraulic sealing of the soil surface inside the bunding.</li> </ul>	<p>Fuels and lubricants should be stored on an impermeable material e.g. concrete hardstanding.</p> <p>Tanks should be stored on a concrete hardstanding. Storage tanks should be located within a secondary containment system or 'bund' which is capable of holding at least 110% of the container's capacity. If two or more tanks are located within the same bund the bund should be capable of holding either 110% of the maximum capacity of the largest tank or 25% of the total capacity of all the tanks, whichever is the greatest.</p>	Bunding which is capable of holding at least 110% of the container's capacity.	Head of department for supervising construction works (Alik Gavjyan)	<ul style="list-style-type: none"> <li>April 2014</li> </ul>		Construction	
67.	<ul style="list-style-type: none"> <li>Conduct inventory of wastes for the construction phase;</li> <li>Equip appropriate areas for short-term waste accumulation;</li> <li>Identify opportunities for waste removal, processing and disposal;</li> <li>Ensure separate storage of waste;</li> </ul>	Develop a Waste Management Plan to include an inventory of wastes for the construction phase. The plan should also describe the storage of waste and options for waste treatment and/or disposal.	<p>An approved Waste Management Plan.</p> <p>A developed and implemented procedure detailing waste segregation (e.g. hazardous and non-hazardous waste) and storage.</p>	<p>Specialized organization (WSP)</p> <p>Environmental manager (Suren Yeritsyan)</p>	<p>Waste Management plan – April 2013</p> <p>Procedure - December 2013</p>		Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
68.	<ul style="list-style-type: none"> <li>■ Ensure that the storage of fertile topsoil from the area on the right-hand slope of the Dukanadzor gorge is performed in compliance with the requirements set forth in the project design documentation</li> <li>■ The slopes of the permanent roads are recommended to have terraces as prescribed in the project design documentation to reduce the volume of surface runoff and protect the open soil area against washing out.</li> </ul>	Ensure the project design is followed with regards to the storage of topsoil and road terraces.	Fertile top soil to be stored in the designated area.	Road construction and service department (Hamlet Titanyan) Landscaping department Head of mining works (Robert Derdzyan) Mapping specialist (Vardges Tovmasyan)	May 2013, ongoing.		Construction	
69.	<p>Requirements to atmospheric air pollution:</p> <ul style="list-style-type: none"> <li>■ It is recommended to ensure that all the mitigation measures prescribed in the EIA are implemented.</li> </ul>	Implemented all the mitigation measures that are specified in the EIA.	An approved plan and schedule to implement all mitigation measures defined in the EIA.	Environmental manager (Suren Yeritsyan)	October 2014		Construction Operational	
70.	<ul style="list-style-type: none"> <li>■ Conduct air quality monitoring at the Company's zone of responsibility at the borders of residential areas (Shnogh, Teghout);</li> <li>■ Conduct monitoring of vegetation and wildlife conditions during the construction phase;</li> <li>■ Analyze the quality of wastewater released from the crushed stone cleaning area to the Shnogh River</li> </ul>	<p>Conduct air quality monitoring as per the monitoring plan developed by WSP.</p> <p>Monitor the vegetation and wildlife conditions and report the results to the Ministry of Nature Protection.</p> <p>Conduct wastewater monitoring as per the monitoring plan developed by WSP.</p>	<p>Air quality monitoring reports and results.</p> <p>Progress reports on vegetation and wildlife conditions.</p> <p>Wastewater monitoring reports and results.</p>	<p>Environmental manager (Suren Yeritsyan)</p> <p>Environmental protection unit of Lernametalurgiai institute cjsc</p>	October 2013 and periodically as per the monitoring plan		Construction Operational	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
71.	<p>Requirements to the protection of surface water:</p> <ul style="list-style-type: none"> <li>■ It is recommended to ensure the Project compliance with the requirements of the License for wastewater discharge,</li> <li>■ To ensure that sanitary wastewater treatment facilities are available for the facilities under construction; and the wastewater from the crushed stone cleaning at the Construction Base which released to the Shnogh River are adequately treated.</li> <li>■ To equip the belts of the sanitary protection zone of drinking water sources (water springs) that have not been properly equipped;</li> <li>■ To prevent migration to the ground and groundwater of sanitary wastewater from the filtering cesspools.</li> </ul>	In order to minimise the risk of polluting surface water ensure that the points listed are satisfied.	Wastewater monitoring results and reports.	<p>Environmental manager (Suren Yeritsyan)</p> <p>Head of pumping station, water supply and sewerage system department (Hovik Mosinyan)</p>	February 2014		<p>Construction</p> <p>Operational</p>	
<b>Recommendations from the water management plan</b>								
72.	<p>Management of the high water table in the initial mine development.</p> <p>Diversion of local watercourses crossing the mine footprint.</p>	Develop a strategy for the interception, treatment and disposal of these waters.	An approved strategy along with implementation of the strategy.	<p>Lernametalurgiai institute cjsc</p> <p>Environmental manager (Suren Yeritsyan)</p>	June 2013		Pre-construction	
73.	Finalise the treatment of surface water drainage from roads.	Develop pollution control measure for un-surfaced roads with an appropriate level of treatment for contaminants. This could include simple measures such as the provision of filter strips / grassed ditches adjacent to the roads to slow down the rate of discharge, reduce erosion and remove hydrocarbons prior to discharge.	Implementation of pollution control measures.	Lernametalurgiai institute cjsc	October 2013		<p>Pre-construction</p> <p>Construction</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
74.	Finalisation of the water treatment of the plant.	<p>Once design aspects have been finalised review and finalise the following points:</p> <ol style="list-style-type: none"> <li>1. Details on how residual run-off waters from the overburden stockpile, oxidised ore and turquoise rock overburden stockpiles be contained within the holdings ponds are to be treated and how treated waters will be disposed.</li> <li>2. Confirmation of the effluent standard that will be achieved by the sand and gravity filters at Akhtala Station and whether an alternative secondary treatment system is necessary.</li> <li>3. Confirmation of the treatment strategy for run-off from site roads.</li> </ol>	Finalisation and implementation of water treatment facilities.	Head of pumping station, water supply and sewerage system department (Hovik Mosinayn)	October 2014		Pre-construction Construction	
75.	Develop a leachate mitigation strategy to ensure that the tailings management is appropriate in terms of preventing any adverse environmental and economic impact.	<p>Leachate mitigation strategy to be developed, in order to ensure the most appropriate tailings management is implemented, further studies should be undertaken. These studies should include:</p> <ul style="list-style-type: none"> <li>Depth to groundwater</li> <li>The geochemistry (particularly the net acid generating potential) of the likely tailings material</li> <li>Static and kinetic tests of the tailing material to determine the acid generating potential</li> <li>The potential for fractures in the bedrock</li> <li>The connectivity and extents / widths / rate of movement of the groundwater beneath the tailings dam and the primary dam</li> </ul>	<p>Results from the mentioned tests and finalisation of the most appropriate management for tailings.</p> <p>Acid leachate mitigation strategy developed and implemented</p>	<p>Specialized organization (WSP) Environmental manager (Suren Yeritsyan) Lernametalurgiai institute cjsc</p>	January 2014		Pre-construction Construction	



Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
76.	Undertake further studies / investigations to resolve the outstanding issues with regards to water balance.	<p>It is recommended the following studies and investigations are undertaken:</p> <ul style="list-style-type: none"> <li>- Confirmation of how the recommended borehole water supply to the Teghout community will be supplemented to meet demand requirements should this proposal be implemented by the community)</li> <li>- Confirmation on the gravity tailings line design and whether the predicted 3.2m<sup>2</sup> of water per ton will be adequate to convey the tailings product.</li> <li>- Clarification on the water balance for the tailings return system including sensitivity on the predicted 30% water losses due to evaporation and infiltration. This should also include an assessment of precipitation / runoff into the tailings and how this affects the seasonal water balance.</li> <li>- Confirmation on how water levels within the tailings and water pond are to be monitored so that mitigation measures can be implemented to prevent overflows occurring from the water pond to Kharatanots River</li> <li>- Confirmation on any (seasonal) limitations on abstraction from the River Debed for the process water secondary supply.</li> <li>- Confirmation on surface water run-off containment and treatment (as mentioned above) to include the basis for the sizing of any holding ponds and dewater regime.</li> </ul>	Results / conclusions from the listed surveys / investigations	Lernametalurgiai institute cjsc  Environmental manager (Suren Yeritsyan)	October 2013		Pre-construction Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
77.	Development and implementation of site water management strategies.	Appointment of Projects Environment and community Co-ordinator and / or Project Engineer responsible for all water management issues. This person will also be responsible for the implementation of contingency and response plans.  Implementation of prescribed controls and mitigation measures identified in the water management plan.	Appointment of a responsible person to manage water strategies and mitigation measures.  Implementation of the contingency responses as detailed in the water management plan.	Deputy general director (Ruben Papoyan)  Head of pumping station, water supply and sewerage system department (Hovik Mosinyan)  Environment manager (Suren Yeritsyan)	March 2014		Pre-construction Construction	
78.	Implementation of erosion and sediment control measures.	Erosion and sediment control measures have been identified in the water management plan; these should be implemented for the construction and operational phases.	Implementation of the specified control measures.	Head of mining works (Robert Derdzyan)  Road construction and service department (Hamlet Titanyan)	March 2014		Construction	
<b>Recommendations from the waste management plan</b>								
79.	Adoption of the waste hierarchy and development of a waste training programme.	The adoption of the waste policy has been set out and formalised in the waste management plan. The Waste Hierarchy should be used as a guiding principle for all waste management decisions. To ensure compliance it is also recommended that:  1. Management procedures include details on the waste policy  2. Waste training and communication should include the details of the waste hierarchy.	Approved procedures and training courses.	Environmental manager (Suren Yeritsyan)  Department of long term sustainable development (Avetik Ghazaryan)	July 2014		Pre-construction Construction	
80.	Adoption of the waste reduction programme. Waste minimisation review.	In order to implement the waste reduction programme the following should be undertaken:  1. Implement, with immediate effect, the design stage waste review; and  2. Develop waste reduction procedures for the operational phase of the project.	Conclusions from the design stage waste review.  Approved procedures.	Environmental manager (Suren Yeritsyan)	Waste review – November 2013  Procedures – July 2014		Pre-construction Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
81.	Overburden extraction modelling Hydrogeological investigation of tailings dam	Testing of drilling cores from the daily blasting of material to be undertaken on site. This would assist with homogeneity and placement records and would also identify instances where unexpected oxidised ores are found that may require separate disposal to the lined oxidised ore dump.  A detailed understanding of the geochemistry and baseline site conditions is critical in confirming the most suitable mitigation options.	Results from the testing. Specified dumping areas for oxidised ores. Acid leachate mitigation strategy.	Head of mining works (Robert Derdzyan)  Lernametalurgiai institute cjsc	Results from testing – January 2014  On-going		Construction Operational	
82.	Tailing Monitoring	Implement a periodic monitoring scheme to determine the quantity of pollutants such as heavy metals present in the discharge to the tailings dump. This will include the positioning of piezometers below the tailings dam to detect flows from tailing dam.	Undertake monitoring as per the monitoring plan.	Environmental protection unit of Lernametalurgiai institute cjsc  Environmental manager (Suren Yeritsyan)	On-going		Construction Operational	
83.	Development of a Turquoise Management plan.	There is limited information available with regards to the turquoise arisings, further assessments could potentially be required. A turquoise management plan should be developed as an addendum to the waste management plan. This should seek to identify and quantify the potential turquoise and should set out suitable arrangements for the construction of a turquoise waste dump taking account of comments in the 2010 ESDD report on historical land contamination from turquoise extractions.	A Turquoise Management plan.	Deputy general director (Gagik Arzumanyan)	January 2014		Construction	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
84.	Creation of hardstanding for waste storage areas	<p>The review of proposals for the consolidation and storage of individual waste streams has identified that the majority will be stored in appropriate areas. Two specific waste streams where the construction of hard standing areas is required to provide adequate protection of soil and groundwater includes:</p> <ul style="list-style-type: none"> <li>■ The area provided for the storage of waste rubber; and</li> <li>■ The area provided for the consolidation and storage of solid waste from administration, welfare and accommodation activities.</li> <li>■ It is recommended that these areas are fabricated from in-situ cast concrete and that appropriate drainage provisions are provided.</li> </ul>	A designated area of hardstanding for waste storage.	<p>Lernametalurgiai institute cjsc,</p> <p>Head of department for supervising construction works (Alik Gavjyan)</p>	August 2014		Construction	
85.	Explore the options for 'take-back' arrangements with suppliers.	<p>On several aspects of the project it is noted that Teghout cjsc will enter into commercial supply agreements for the provision of plant, equipment and materials. As part of the waste reduction programme it is recommended that Teghout cjsc will explore potential material 'take-back' options with these suppliers. Two examples where this approach could be deployed are:</p> <ul style="list-style-type: none"> <li>■ In the supply of plant and vehicles. Redundant components, or scrap resulting from unplanned maintenance could be removed by the supplier as part of an exchange arrangement; and</li> <li>■ In the construction of the containment liner for the oxidised ore dump.</li> </ul>	<p>Records of communication with suppliers.</p> <p>Agreements with suppliers for 'take-back' schemes</p>	<p>Procurement department</p> <p>Legal department</p>	On-going		<p>Construction</p> <p>Operational</p>	

Ref No.	Item	Recommended Action	Output Required	Responsible Person	Target Date of Completion	Date made available	Phase	Comments
86.	Review of waste reprocessing capacity	It is recommended that Teghout cjsc will explore, through discussions with their waste contractor and the Ministry of Nature Protection, future opportunities for the recycling of individual waste streams that may result from the development of local waste management facilities. Upon identifying alternative waste management routes (that promote the Waste Hierarchy) Teghout cjsc should, in partnership with their appointed waste contractor, introduce an appropriate waste segregation strategy that enables waste to be diverted into recycling and recovery management routes.	Records of communication Agreements with waste contractors / Ministry	Environmental manager (Suren Yeritsyan) Deputy general director (Artashes Boshyan)	On-going		Construction Operational	
87.	Update waste passports	Update the waste passports in line with the waste management plan and notify the changes to the Ministry of Nature Protection.	Updated waste passports Records of communication	Environmental manager (Suren Yeritsyan)	December 2013 – to be reviewed periodically		Construction Operational	
88.	Ecosystems services assessment	An ecosystem service assessment should be undertaken within six months of the adoption of this plan to identify opportunities for local communities to benefit from deforestation activities involved in the project.	An ecosystem service assessment report	Specialized organization (WSP) Environmental manager (Suren Yeritsyan)	November 2013		Construction	
89.	Dam safety risk assessment	A dam safety risk assessment for the tailings dump will be undertaken on completion of the mine processing plant. A monitoring regime will be developed following the risk assessment.	A dam safety risk assessment. A monitoring regime and schedule.	Lernametalurgiai institute cjsc	April 2015 May 2015		Construction Operation	

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Document Ends.

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