HINDUSTAN ZINC
Zinc & Silver of India

Sustainability Framework

TECHNICAL STANDARD

Water Management

Hindustan Zinc Limited

SAFE SMART SUSTAINABLE

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16/08/2025	v.1	Initial issue

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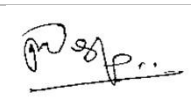
Signature	
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Confidentiality

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1. INTRODUCTION

HZL recognises the social, economic and environmental value of water and the impacts that its operations and activities may have on water resources. Protecting water resources is a priority for HZL and it is integral to our commitment to sustainable development. In recognition of this commitment and in accordance with our Water Management Policy this Standard aims to facilitate the integration of water management into decision making processes for new and existing projects and to help ensure that all necessary measures are taken to avoid, minimize and in some cases compensate for the impacts of our projects. This Standard supports HZL's *Water Management Policy.*

The assessment and management of impacts of new projects shall be considered as part of the overarching environmental and social impact assessment and therefore this document should be read in conjunction with the *Conducting ESIA to International Standards* Technical Standard for such purposes. For existing projects, reference shall also be made to existing environmental management provisions adopted at a Company and site level. This standard has been adopted from the parent company Vedanta 's Sustainability framework.

2. SCOPE

3. This Technical Standard is mandatory and applies to all HZL subsidiaries, operations and managed sites, including new acquisitions, corporate offices and research facilities and to all new and existing employees. This Standard is applicable to the entire operational lifecycle (including exploration and planning, evaluation, operation and closure).

DEFINITIONS

Definitions of key terms used in this document are shown in the following table.

Term	Definition
Affected Communities	Local communities directly affected by the new or existing project.
CAO	The Office of the Compliance Advisor/Ombudsman, an independent post that reports directly to the President of the World Bank Group.
Cumulative Effects	Based on the IFC description, cumulative impacts are those that result from the incremental impact of the project when added to other existing, planned and reasonably predictable future projects and developments. Water-related effects include: cumulative quantity (over-abstraction) and cumulative quality (impairment of water bodies) impacts.
ICMM (International Council on Mining and Metals)	The International Council on Mining and Metals (ICMM) was established in 2001 and seeks to drive performance improvement through its members which comprise mining and metals companies as well as national and regional mining associations and global commodity associations.
WHO Drinking Water Guidelines	The revised Guidelines for Drinking Water Quality were published by the World Health Organisation (WHO) on 4th July 2011 and are typically used in the absence of any local/national standards for drinking water quality. These guidelines establish the quality standards that should be

Term	Definition
	achieved for water to be classified as drinking water, as well as broader water safety considerations.
IFC (International Finance Corporation)	Member of the World Bank that finances and provides advice to private sector ventures and projects in developing countries.
Lifecycle	The phases of a HZL project including exploration and planning, evaluation, operation and closure.
Operation(s)	A location or activity that is operated by a HZL Company and its subsidiaries. Locations could include exploration activities, mines, smelters, refineries, wind farms, offices including corporate head offices and research and development facilities.
Participatory Water Monitoring	Based on the CAO description, this is a collaborative process of collecting and analysing water data, and communicating the results, in an attempt to identify and solve problems as a partnership between the HZL site and its affected communities. It includes a variety of people in all stages of the monitoring process, and incorporates methods and indicators meaningful to the stakeholders concerned.
Stakeholders	Persons or groups that are directly or indirectly affected by a project as well as those that may have interests in a project and/or the ability to influence its outcome, either positively or negatively. This can refer to shareholders, lenders, employees, communities, industry, governments and interested third parties.
Water Accounting	The systematic collation of the water balance information from each site within each Company to enable the Group Sustainability Committee to measure, record and report aspects of water resources management associated with its operations and activities.
Water Balance	A calculation of the total volume of water inputs (for direct and indirect uses) and outputs (i.e. wastewater) for each HZL site.

4. PROGRAMME REQUIREMENTS

This technical standard has been prepared in order to protect water resources from the impacts that its operations and activities may have on them. It describes mechanisms for identifying, evaluating, managing and protecting water resources that may be impacted by an existing or proposed HZL activity or operation.

4.1. General Requirements

a) The requirements included in this Technical Standard shall be adhered to by all HZL operations as applicable.

b) Arrangements shall be created, implemented and maintained so that the requirements of applicable local, regional, national legislation are complied with.

c) Arrangements shall also be implemented to ensure conformance to the requirements of the *IFC Performance Standards.*

d) The key IFC provisions are summarised as follows*:*

- *Performance Standard 1 - Assessment and Management of Social and Environmental Risks and Impacts* - The relevant objectives of this standard are to identify and assess social and environment impacts, both adverse and beneficial, in the project's area of influence; to avoid, or where avoidance is not possible, minimize, mitigate, or compensate for adverse impacts on workers, affected communities, and the environment; to ensure that affected communities are appropriately engaged on issues that could potentially affect them and to promote improved social and environment performance through the effective use of management systems. The key considerations in so far as they relate to this Technical Standard are: the need to undertake a risk and impact assessment; the need for a management programme of mitigation and performance improvement measures; community engagement; monitoring and reporting;

- *Performance Standard 3 – Pollution Prevention and Abatement* – The relevant objective of this standard is to avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities. The key considerations in so far as they relate to this Technical Standard are: use of pollution prevention and control technologies and techniques during all stages of the project lifecycle; resource conservation; emergency preparedness and response and existing ambient conditions (of surface and groundwater resources), and

- *Performance Standard 6 – Biodiversity Conservation and Sustainable Natural Resource Management* – The relevant objectives of this standard are to protect and conserve biodiversity and to promote sustainable management and use of natural resources through the adoption of practices that integrate conservation needs and development priorities. The key considerations in so far as they relate to this Technical Standard are: natural resources impact assessment; impact management / mitigation in areas of modified, natural and critical habitats; protection, promotion and enhancement of legally protected areas (all of which may comprise water-based habitats); and sustainable management and use of renewable natural resources.

4.2. Existing Projects and Operations

All existing HZL operations shall create, implement and maintain arrangements for sustainable water management at all locations including but not limited to offices, manufacturing sites, distribution infrastructure, mines, etc.

4.3. Water Resources Risk Screening Assessment

a) All HZL operations shall conduct a basic screening assessment to identify sensitive water resources and aquatic habitats and any known or suspected water resources constraints within and in proximity to each owned/managed operation and facility.

b) Constraints that shall be considered include (but not limited to):

- a naturally water stressed environment, with a high prevalence of droughts and water shortages;

- the presence or planned development of other water intensive industrial and/or agricultural activities, in particular commercial agriculture, agro-processing facilities and power generation and supply;

- any planned infrastructure in the river basin, such as hydropower schemes, river diversions etc;
- a highly polluted water environment, e.g. where there are significant and poorly regulated industrial or agricultural activities upstream of the operation; or
- groundwater resources that may be at risk from induced saline intrusion or other sources of contamination if pumping activities occur.

c) This screening assessment shall be achieved using for example the World Business Council for Sustainable Development Water Tool (or other internationally recognised proprietary) database as well as by referring to other available sources of information as appropriate such as government management strategies or action plans, media and the internet to determine the need and priority to further examine water constraints, biodiversity attributes in so far as they relate to water and aquatic ecosystem services issues.

d) The outcome of this exercise shall be a prioritised list of all sites on the basis of risk. Sites situated in an area of high water resources value and/or with vulnerable aquatic ecosystem services, and sites located outside an area of high water resources value but which impact such an area will be classified as high risk. Medium and low risk sites shall be classified on the basis of distance from such areas, and extent of impact.

4.3.1. Water Resources Management Plan

a) On the basis of the assigned priority rating of each site a Water Resources Management Plan (WRMP) shall be prepared and implemented to eliminate, minimize, mitigate and manage impacts on water resources and shall be commensurate with the level of risk.

b) For operations and facilities that have been identified as high risk, the collection of further information shall be undertaken in order to inform the development of the WRMP.

c) For high risk operations and facilities, the WRMP shall include provision for the following issues. For medium and low risk facilities the following issues may be included as appropriate on the basis of an assessment of local needs and requirements:

- Withdrawals from sensitive water bodies;
- Operational activities and arrangements for preventing the discharge of harmful substances into the soil and groundwater;
- Security of supply and forecasted changes in demand;
- Planning and preparation for potential climate change impacts that could disrupt or change the availability of water resources;
- Societal values and conflicting uses in the context of ecosystem services;
- Affected communities' ownership and access rights to water resources;
- Impacts on landscape / ecological processes as a result of major long term changes in water use arising from site operations and activities (e.g. impact on habitat function of water catchments due to reduced flow);
- Transboundary impacts such as water pollution of international surface waters;

- Cumulative effects and the impacts of mining and minerals processing on operational, local and regional water systems, and
- Strategies that contribute to the improvement of ambient conditions when the project has the potential to constitute a significant source of emissions in an already degraded area.

d) The WRMP shall detail the arrangements for the periodic internal and external measurement and reporting (as required) of the impact management activities.

e) The WRMP shall be integrated into the Company, Operation or Project Social and Environmental Management Plan.

4.3.2. Legal and Other Requirements

a) All HZL operations shall identify all relevant local, regional and national legislative requirements on water management and biodiversity conservation that are relevant to each of its owned and/or managed operations and facilities.

b) Arrangements shall be established to ensure compliance with all such requirements, and to surpass them where practicable.

c) All applicable international conventions shall be identified and complied with in all jurisdictions in which it operates.

d) HZL shall consider opportunities to protect and enhance water resources and aquatic environments in modified and natural habitats beyond the scope of legal compliance and the requirements of international standards.

4.3.3. Provision of Drinking Water and Sanitation

a) All HZL operations shall ensure that all sites and facilities (including contractor camps; refer to the *Supplier and Contractor Management* Technical Standard TS06) are supplied with a secure supply of drinking water and with adequate sanitation facilities.

b) Where drinking water is provided by the Company, it shall be treated to conform with WHO and / or national standards, whichever are the more stringent.

c) In the absence of a municipal sewerage connection alternative infrastructure for sanitary waste disposal shall be established such as piped connection to septic tanks and provisions for appropriate disposal of waste.

d) Documentation shall be maintained that details the sources of the site's water supply, the drinking water and sanitation network, the quantity and quality of water abstracted for use and the quality of the wastewater discharged by the site.

e) Arrangements shall be established to maintain the water and sanitation infrastructure.

4.3.4. Water Balance

a) A water balance shall be calculated and maintained by each location. This shall consider the following:

- Identification of the total volume of water withdrawn from any water source (surface waters, groundwater, rainwater, waste water from another company, municipal water);

- Water withdrawn directly by the Company or through intermediaries such as water utilities;
- Volumes used for each different purpose (e.g. drinking water, sanitation, process);
- Volume of returns to the environment through leakage, treated wastewater discharges, evaporation etc, and
- Volume of reused / recycled water and as a percentage of the total water used or withdrawn.

b) The water footprint shall be reviewed on an annual basis and updated as required and reported to the Company head office.

c) Each unit shall collate the annual water balances from all its facilities and use these to determine Company-level performance goals and water resources targets for the forthcoming year.

d) The water balances collated by each Operation shall be submitted to the Corporate Sustainability Committee for the purposes of the annual management review, performance reporting and continual improvement in accordance with the *Management Review and Continual Performance* Management Standard MS14.

4.3.5. Water Use Reduction

a) As part of the annual sustainability performance improvement review, an annual assessment shall be conducted to identify opportunities for minimising the amount of water consumed including direct reduction of freshwater demand by using alternative supplies (such as recycled process water).

b) Identify and act upon opportunities to upgrade the design of site infrastructure to enhance water conservation measures (such as replacement of old pipe work to reduce leakage) as part of the planned preventative maintenance programme.

c) Identify and act upon opportunities to assist the local communities to better manage their water consumption (such as through maintenance of storage and distribution infrastructure) such that additional water becomes available for use by the site (referred to as water consumption offsetting).

d) All HZL operations shall identify and implement measures for recycling and reuse of wastewater such as recirculation of process water for cooling or rain water harvesting.

e) The findings of the assessment shall be incorporated as appropriate into the proposed improvement plan for the forthcoming reporting year in the form of objectives and targets.

f) For sites that extract water (ground and surface water), measures shall be implemented where possible to promote groundwater recharge in order to counter the impact of water removal and augment supply (referred to as rainwater harvesting).

4.3.6. Wastewater Treatment and Discharge

a) All process waste water shall be treated to international best practice standards through the application of best available techniques (BAT) before being discharged to the environment.

b) Surface water runoff shall be controlled so as to prevent soil erosion, protect water bodies and aquatic biodiversity from impact due to sediment loading and pollutants, and to prevent localised flooding.

c) Sanitary waste shall be treated in such a manner that it does not present a risk to the environment or to human health.

d) Prior to discharging any water to the environment, the quality of the water shall be verified to ensure that it meets any applicable legal, corporate and permitting obligations.

e) A zero discharge philosophy shall be applied at all sites.

4.3.7. Emergency Preparedness and Response

a) Each HZL operation and facility shall, on the basis of an assessment of risk, include in its emergency response plan a section designed to prevent, mitigate and control the unplanned or uncontrolled release of waste water into the natural environment.

b) Each HZL operation and facility shall establish the necessary arrangements for ensuring adequate and appropriate training, resources, responsibilities, communication, procedures and other aspects are available to effectively respond to emergency situations.

4.3.8. Participatory Monitoring

a) Arrangements shall be established to facilitate participatory water monitoring with affected communities in order to constructively monitor and manage any conflicting water use issues that may arise during the project lifecycle. Reference shall be made to relevant guidance provided by the CAO.

b) Arrangements shall be established for the regular reporting to stakeholders on the Company's management of water resources and the progress towards water conservation achievements.

c) HZL operations shall participate in local or regional water catchment planning activities to secure sustainable water resources for operations and the activities of other users outside of the organisation.

d) All engagement with affected communities shall be conducted in line with the *Stakeholder Engagement* Technical Standard TS05 and issues shall be managed in accordance with the *Grievance Mechanisms* Technical Standard TS04.

4.3.9. Measuring and Monitoring

a) Using the GRI Mining and Metals Sector Supplement each HZL operations shall monitor performance in managing water resources issues.

b) Each HZL operation shall develop performance indicators on the basis of corporate and legal requirements and using the following GRI Mining and Metals Performance Indicators:

- Disclosure 303-1 Interactions with water as a shared resource
- Disclosure 303-2 Management of water discharge-related impacts
- Disclosure 303-3 Water withdrawal
- Disclosure 303-5 Water consumption.

c) On the basis of the risk classification, each operation or facility shall also establish arrangements for monitoring its performance against the relevant indicators established by the Company.

d) Every facility shall regularly monitor water flows and compare these against performance targets to manage abstraction and consumption and to identify opportunities to reduce it.

e) Every operation shall establish and monitor performance against targets for water consumption reduction and for improving the quality of produced waste water. Targets shall be set in accordance with the *Data Management, Performance Monitoring and Reporting* Management Standard MS 10.

4.3.10. Knowledge and Awareness

a) Arrangements shall be implemented to support water resources, aquatic environments, ecosystem services and conservation research efforts carried out by local, regional and national research groups in order to further knowledge and understanding of such attributes in HZL's areas of operation.

b) Mechanisms shall be created and implemented to provide information and raise awareness among employees, customers and suppliers and other stakeholders to enhance knowledge and understanding of water resources, aquatic environments and conservation issues.

4.4. New Projects

4.4.1. Impact Assessment

a) For any new project that is planned, an initial assessment shall be undertaken to determine if it will be necessary to undertake a formal international standard Environmental and Social Impact Assessment (ESIA). Reference shall be made to the provisions of local legislative requirements and to the IFC Performance Standard PS1 on the Assessment and Management of Social and Environmental Risks and Impacts.

b) For projects that require an ESIA the *Conducting ESIAs to International Standards* Technical Standard TS08 shall be followed.

c) For projects that do not fall within the scope of an ESIA, a water resources risk screening assessment shall be undertaken as described in 4.3 and the potential impacts subsequently managed as required in accordance with the provisions of a water resources management plan as described in Section 4.3.1.

4.4.2. Impact Assessment

a) The scope of the ESIA will depend on the nature and scale of the project and sensitivities of water resources attributes in the project area but in any case, shall include:

- Desktop study and consultations;
- Baseline water resources survey;
- Assessment of ecosystem services;
- Impact and dependency assessment;
- Reporting, and
- A Management Plan.

b) For all new projects water resource attributes and ecosystem services in the proposed area shall be identified and potential project impacts and dependencies assessed.

c) HZL shall ensure that the Baseline Water Resources Survey establishes a core set of assessment criteria (indicators) which will form the basis of impact analysis and the definition of mitigation and management measures.

4.4.3. Water Resources Management Plan

a) A Water Resources Management Plan (WRMP) shall be prepared that details the actions that are identified during the impact assessment to prevent, minimise and mitigate impact to vulnerable water resources during the project lifecycle.

b) The WRMP shall include as appropriate those considerations detailed in Section 4.3.1 (for water resources management associated with existing projects) as well as other considerations that arise out of the impact assessment and mitigation planning for the new project.

c) The WRMP shall also include all items as necessary to ensure conformance with HZL's Water Management Policy.

d) The WRMP shall be integrated into the Social and Environmental Management Plan described in the *Conducting ESIAs to International Standards* Technical Standard TS08.

5. ROLES AND RESPONSIBILITIES

HZL operations and sites shall ensure that roles and responsibilities for implementing and complying with this Standard are allocated. Key responsibilities shall be included in job descriptions, procedures and/or other appropriate documentation.

6. COMPLIANCE AND PERFORMANCE

Each HZL operation shall ensure they comply with the requirements of this standard. Performance against meeting the requirements of this Standard shall be assessed periodically, documented and, where required, reported to HZL Corporate. The assessment of performance shall include setting and reporting on key performance indicators (KPIs) where these have been established at HZL Company or local level. The evaluation of performance shall include, as a minimum, confirmation that:

- All existing projects have arrangements in place to ensure safe drinking water and sanitation services are provided at all sites and facilities.
- A water balance is prepared annually by each site and is reported to the Company Head Office.
- A water account is prepared annually by each unit and reported to the Corporate Sustainability Committee to enable it to fulfil its duties for data reporting and continual improvement.
- Clear, transparent and formal arrangements are implemented and followed for participatory water monitoring and evidence is available to document consultations with affected communities and implementation of actions to address issues and concerns as part of this process.
- Evidence is available to demonstrate the actions taken to reduce and monitor sustainable water management initiatives regarding water consumption reduction, water reuse and recycling, water treatment, and minimum or zero discharges.
- Regular monitoring of company-supplied drinking water and of waste water discharges is conducted to ensure that local/national or international standards are complied with as appropriate, and that any non-conformances are managed appropriately.
- A water resources impact assessment is incorporated into the ESIA conducted for all new projects.

7. SUPPORTING INFORMATION

Reference	Description
ICMM (International Council of Mining and Metals)	The ICMM has recently produced and published a good practice guidance document 'Indigenous Peoples and Mining' which whilst it is written for indigenous peoples and therefore may not be relevant

	to all projects, contains useful guidance and references to cultural heritage. The ICMM has also produced many other best practice documents on a range of health, safety, environment and community issues relating to mining. http://www.icmm.com/library
Global Reporting Initiative (GRI)	The Global Reporting Initiative (GRI) is a network-based organization that produced an internationally applicable sustainability reporting and disclosure framework. The GRI periodically updates the framework and also provides sector-specific guidance on its application to environmental, social and governance performance. http://www.globalreporting.org/Home
IFC Performance Standards Guidance Notes	Provides detailed guidance for adopting and implementing the requirements of the different Performance Standards. http://www.ifc.org/ifcext/sustainability.nsf/Content/PerformanceStandards
The Office of the Compliance Advisor/Ombudsman (CAO)	An independent post that reports directly to the President of the World Bank Group. The CAO reviews complaints from communities affected by development projects undertaken by the private sector lending and insurance members of the World Bank Group, the International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA). The CAO also offers advice and guidance to IFC and MIGA, and to the World Bank Group President, about improving the social and environmental outcomes of IFC and MIGA projects. The CAO has issued an advisory note on preventing and managing water conflict through participatory water monitoring (see Section 9 below for reference).
World Business Council for Sustainable Development (WBCSD) Water Tool	The WBCSD has created a tool which is freely available online to enable companies and organisations to map their water use and assess risks relative to their global operations and supply chains. http://www.wbcsd.org/work-program/sector- projects/water/global-water-tool.aspx
World Health Organisation (WHO)	WHO is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence- based policy options, providing technical support to countries and monitoring and assessing health trends. http://www.who.int/en/

8. REVIEW

This Technical Standard shall be periodically audited and reviewed to determine its accuracy and relevance with regard to legislation, education, training and technological changes. In all other circumstances, it shall be reviewed no later than 12 months since the previous review.

9. RELATED DOCUMENTATION

A summary of the references and supporting documents relevant to this document is provided in the following table.

Doc. Ref.	Document name
	HZL Code of Conduct
POL 07	Water Management
MS 10	Data Management, Performance Monitoring and Reporting
MS 14	Management Review and Continual Performance
TS 04	Grievance Mechanisms
TS 05	Stakeholder Engagement
TS 06	Supplier and Contractor Management
TS 08	Conducting ESIA to International Standards Technical Standard
CAO Advisory Note	Participatory Water Monitoring – A Guide for Preventing and Managing Conflict
GRI version 3	Indicator Protocols Set – Environment - Mining and Metals Sector Supplement