Independent Environmental and Social Consultant Compliance Monitoring Report

Oyu Tolgoi Mine

September 2024

Report Date: November 28, 2024

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KEY ABBREVIATIONS AND ACRONYMS

AIFR	All-In Frequency Rate
AEMP	Atmospheric Emissions Management Plan
AESR	Annual Environmental & Social Report
AQMP	Air Quality Monitoring Plan
BAP	Biodiversity Action Plan
BMEP	Biodiversity Monitoring and Evaluation Plan
BMP	Biodiversity Management Plan
BRMP	Business Resilience Management Plan
CA	Cooperation Agreement
CAP	Priority Plant Corrective Action Plan
CAO	Compliance Advisor Ombudsman
CBM	Core Biodiversity Monitoring
CEMS	Continuous Emissions Monitoring System
CH	Cultural Heritage
CHMP	Cultural Heritage Management Plan
CHMS	Cultural Heritage Management System
CHP	Central Heating Plant
CHSSMP	Community Health, Safety & Security Management Plan
COS	Coarse Ore Stockpile
CSP	Communities and Social Performance
CSP MS	Communities and Social Performance Management System
DSF	Development Support Fund
EBRD	European Bank for Reconstruction and Development
ECAs	Export Credit Agencies
EDC	Export Development Canada

EFIC	Export Finance and Insurance Corporation
EPRP	Emergency Preparedness and Response Plan
ERP	Emergency Response Plan
ERPr	Emergency Response Procedure
ERT	Emergency Response Team
ESAP	Environment and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMEP	Ecosystem Services Monitoring and Evaluation Plan
ESMP	Environmental and Social Management Plan
PSFA - AA	Power Source Framework Agreement
GH	Gunii Hooloi
GHGs	Greenhouse Gas Emissions
GIIP	Good International Industry Practice
HCRA	Herder Complaints Resolution Agreements
HLIP	Household Livelihood Improvement Plan
HR	Human Resources
HSE	Health, Safety and Environment
HSEC	Health, Safety, Environment and Community
HSEC MS	Health, Safety, Environment and Community Management System
HSESC	Health, Safety, Environment, Security and Communities
IA	Investment Agreement
ICMM	International Council on Mining and Metals
IESC	Independent Environmental and Social Consultant
IFC	International Finance Corporation
IMP	In-migration Management Plan
IWRC	Interim Waste Recycling Center

IMPC	Inner Mongolian Power Corporation
KBWMC	Khanbogd Waste Management Center
KPI	Key Performance Indicator
LMP	Labor Management Plan
MET	Ministry of Environment and Tourism
MIGA	Multi-lateral Guarantee Agency
MLA	Mine License Area
MUST	Mongolian University of Science and Technology
MWMP	Mineral Waste Management Plan
NNL	No Net Loss
NoC	Notice of Change
NPI	Net Positive Impact
NPPC	Native Plant Propagation Centre
OEL	Occupational Exposure Limit
OESMP	Operations Environmental and Social Management Plans
OT	Oyu Tolgoi
OT-GS	Oyu Tolgoi – Gashuun-Sukhait
OT-KB	Oyu Tolgoi – Khanbogd
PAF	Potentially acid forming
PEM	Participatory Environmental Monitoring
PLIMP	Pastureland and Livelihoods Improvement Management Plan
PR	Performance Requirement
PS	Performance Standard
PSFA	Power Source Framework Agreement
RAP	Resettlement Action Plan
REC	Renewable Energy Certificate

RT	Rio Tinto
SCP	Sustainable Cashmere Project
SEP	Stakeholder Engagement Plan
SOPP	State-Owned Power Plant
STRENGTH GEC	Strength Geologic and Environmental Consulting, LLC
SLPs	Sustainable Livelihood Projects
TDS	Total Dissolved Solids
TPC	Tripartite Council
TPD	Tons per day
TSF	Tailings Storage Facility
UB	Ulaanbaatar
US EXIM	Export-Import Bank of the United States
WCS	Wildlife Conservation Society
WRMP	Water Resources Management Plan

1 Executive Summary

The scope of this site-based IESC Audit is to undertake a risk-based review of the environmental, social, health and safety performance of Oyu Tolgoi (OT) mine project operations. This includes providing an update on non-conformances identified in the last desktop-based Independent Environmental and Social Consultant (IESC) Audit Report (*IESC Compliance Monitoring Report, May 2024*), as well as providing a current assessment as to whether agreed mitigation and monitoring measures are being implemented as required by commitments made in Operational-phase Environmental and Social Management Plans (OESMPs). The risk-based approach reflects the history of the IESC in auditing of the Project, a constructive working relationship with OT and Lenders established for over 12 years, and a limited and select number of identified non-conformances with the ESIA and underlying Environmental and Social Management Plan commitments. In situations in which non-conformances are identified an appropriate path forward is identified by the IESC to guide OT in its objective of conforming with all Lender requirements.

This report presents a review of the Project's status as of September, 2024. The site visit included a short tour of Hustai National Park area outside of Ulaanbaatar (to guide potential OT biodiversity compensation planning), a three-day tour of the OT site, meetings in UB with OT and Rio Tinto E&S management, and discussions with numerous stakeholders including non-governmental organizations (NGO's). The IESC has endeavored to visit the site once per year, typically in early fall when the majority of summer field data have been collected and tabulated. In addition to information obtained during the site visit there have also been iterative information requests from the IESC and corresponding responses to these requests from the OT Environment and Communities Teams.

The long history of the IESC in auditing the OT project, and general good performance relative to commitments, has allowed determination of key ongoing environmental, social, and health and safety risk areas. Updates are provided in this report to address key risk areas, including most recently the potential presence of seepage from the TSF into the adjacent Dugat/Khaliv ephemeral river channel, which is located east and immediately adjacent to TSF Cell#1. In general the quality of information provided by OT during this audit is very good, complimented by additional expertise within the broader Rio Tinto organization. In some instances, references are provided to previous IESC Audit Reports for background on project history.

As of Q3 2024 there are one Class III, seven Class II, and one Class I non-conformance identified with the ESIA and underlying management plans. Two non-conformances from the prior Q2 2024 Audit have been closed. These are related to finalization of the Remedial Action Plan Completion Audit and off-site management/disposal of certain hazardous waste streams. There are two new non-conformances related to implementation of the Labour Management Plan and implementation of the OT Disciplinary Procedure. The following summarize key findings and recommendations from this review:

- OT maintains a well-staffed and competent Environment Team and Community Social Performance Team. The Project is subject to a number of domestic and international audits/inspections and in general performs well when evaluated against best practice environmental and social guidance.
- As reported on prior Audit Reports, OT has anticipated expansion of the current Mine License Area (MLA) to accommodate expected subsidence associated with development of underground works. The current MLA encompasses a total of 8,489 hectares. The extent of the additional land required to accommodate a subsidence zone resulting from underground mine development totals 266 additional hectares to the north. In Q3 2023 a Notice of Change was submitted to the Lenders, along with a supporting "Supplementary ESIA", to correspond with the existing 2012 OT Mine ESIA. The Supplementary ESIA was then reviewed by both the Lenders and IESC and a revised draft presented just prior to this Audit.

- A finalized design has also just recently been established for the Dugat River Diversion, which is an important component of the mine zone expansion. This diversion includes redevelopment of the existing Dugat Surface Water Diversion to include a 3.3 km extension beyond the MLA boundary, and to discharge to a location further downgradient of the existing discharge point within the Mine License Area. The planned surface water diversion extension is to a drainage channel that then feeds into the Budaa River ephemeral system.
- OT has just recently informed the IESC that construction of the Dugat Diversion project has been delayed until the 2026 field season. This should allow adequate time to incorporate finalized design of the diversion into the existing Supplemental ESIA. The IESC recommends that the Supplemental ESIA incorporate this final design and be finalized as soon as possible.
- The current version of the Oyu Tolgoi Closure Plan was last updated in 2017 and a revision is required to ensure the Closure Plan aligns with 2019 updates to *Mongolia National Regulation on Mine Closure and Rehabilitation* and Rio Tinto Closure Standard updates from 2021. Under Rio Tinto procedure each asset's closure plan is reviewed on a five-year cycle. For Oyu Tolgoi this last review occurred in 2021, with a conclusion that OT's Closure Plan was outdated. Finalization of an update to the Closure Plan is pending acceptance of a 2023 Feasibility Study, which is delayed. However, the IFC's EHS Guidelines for Mining require regular updating.
- OT is currently performing an update to the 2015 groundwater hydrogeology model which will be used in the re-assessment of the Gunii Hooloi (GH) reserve. This updated modeling is required by the Mongolia Water Authority and the field program was completed in the 2024 field season. From the completed field work a third-party will prepare a Gunii Hooloi Reserve Reassessment. Current plans are to by Q4 2024 have this report submitted to the Water Reserve Council (part of the Mongolia Water Authority). There is a risk that the Water Reserve Council may question the permitted allotment of 918 L/s to OT from the GH aquifer, which is substantially more than OT is currently using. However OT does have the legal right to this allotment under the Long-Term Water Contract.
- High Total Dissolved Solids (TDS) is present in monitoring bores up to possibly 300 m east of Mine License Area. A Detailed Water Review was held in Q3 2023 prior with staff from OT, Rio Tinto, the Lenders and the IESC present. A Remedial Action Plan (RAP) was developed in Q4 2023 following the Detailed Water Review. Details of implementation are presented in this Audit Report.
- OT has implemented a series of Remedial Action Plan mitigations, including additional hydrogeologic study. Mitigations include relocation of the seepage collection pond and pump house, installation of a French drain trench down gradient of the cut-off dam to the east of the TSF Cell#1, and extension of the cutoff trench to the north and adjacent to TSF Cell#2. The IESC has made recommendations in this report for certain areas of RAP implementation that are delayed and/or not providing stated objectives. Although geochemistry studies are ongoing a precise geochemical signature has yet to be identified for TSF seepage that may be escaping into the environment. This makes it difficult to distinguish between potential high-TDS seepage water escaping into the environment and impacts from mounding of the naturally-high TDS groundwaters that occur in the region. Without that it is challenging to determine precise impact, and by extension appropriate remedial systems beyond those already implemented.
- OT has an Independent Tailing Review Panel (ITRP) comprised of world class tailings engineers. In their recent Q2 2024 report the ITRP discusses that the use of the MLA property boundary itself as the point of compliance may not be appropriate. The ITRP recommend that the source of the highly saline groundwater to the south of the seepage collection sump should be investigated to determine whether it is associated with natural groundwater, the clay backfill, or

evapoconcentration of seepage water. The ITRP also recommended that further work be undertaken to identify a reliable indicator of TSF seepage water.

- In Q3 of 2024 a Notice of Change was approved by the Lenders authorizing the offsite disposal of certain hazardous wastes (NoC 2024-004). These include materials that can be incinerated by the contractor Element LLC. The facility operated by Element LLC is fully permitted and a Risk Assessment performed to ensure adequate handling and processing of materials that have been stored at the OT site for an extended period of time. The IESC will continue to report on any offsite disposal of hazardous waste streams, as identified in this report.
- As described in the prior Q3 2023 Audit Report OT has recently made significant revisions to its GHG accounting metrics for years 2018 – 2023. These revisions consider the Chinese national grid factor, which is considerably less than the grid emission factor previously adopted by OT. This has led to downward revisions of approximately 30 – 40 % in total GHG emissions for each calendar year. OT still maintains a goal of significant future reductions based on its revised 2018 baseline year GHG emission metrics. In 2023 Rio Tinto purchased considerable Renewable Energy Certificates (RECs) to offset its equity emission in OT, which has lowered Oyu Tolgoi's reported GHG emission totals. OT is working towards obtainment of RECs that are domestically sourced; however there are challenges to renewable power initiatives as described in this report.
- An option of using rail transport for export of concentrate has recently come under serious consideration. There is already an existing railway line from the nearby Tavan Tolgoi coal mine to a location near the Chinese border. Connection from the OT site to the existing rail line would require a 26 km spur rail line. OT is evaluating this option, including associated environmental/social assessment and mitigation requirements. A Prefeasibility Study (PFS) has been completed for the rail spur, with a full Feasibility Study scheduled for completion by Q4 2024.
- With regards to biodiversity - the emphasis for offsetting impacts to khulan and gazelle may need to be placed on engineered crossings and efforts to entice khulan to cross the Trans-Mongolian Railroad (TMR) in the unfenced 20 km zone at the border with China. The IESC recommends that OT produce a written report evaluating cost and feasibility of constructing wildlife crossings, as well as feasibility analysis of facilitating TMR crossing at the unfenced border with China. If material progress cannot be made, OT will be confronted with the reality that an offset for habitat fragmentation for khulan may not be possible. The IESC also recommends that OT present results on the khulan movement studies, which will improve the understanding of the actual significance of impacts caused by the project. This will inform lenders of the importance of offsetting. The IESC recommends this be a key topic for the Q2 2025 audit, if not for a special session prior to that audit.
- OT will provide immediate support to park rangers in the Small Gobi Special Protection Areas to improve control of illegal livestock grazing in the core zones and limited use areas. OT will also evaluate three additional opportunities for expanding this rangeland offset. OT will develop a draft offset plan with KPIs, timeline, and budget. Based on progress in identifying a new rangeland offset approach, the non-conformance has been reduced to Class II.
- The IESC requested that a study design for evaluating rehabilitation be submitted for Lender review by Q2 2024. OT did not do this and has nevertheless initiated further monitoring work without prior IESC review of the methods. The documents submitted at the time of this audit are lacking technical description of methods. OT should submit the results of this work to the IESC in Q4 2024. If the study design is not satisfactory, the IESC recommends that OT submit a new study design before the next audit.
- OT is behind schedule in meeting its updated timeline for priority plant conservation. OT must accelerate its work in: a) conducting propagation and transplanting trials for priority species, b)

planning the location of transplanting through 2032, and c) determining the number of seedlings needed for transplanting, by year through 2032. This remains a Class III non-conformance until tangible progress is made in adherence with the timeline.

- The OT Town Transformation and Employee Accommodation framework continues to be developed. The pressing need for additional worker accommodation to relieve over-capacity onsite accommodation has led to the submission of a Notice of Change (NOC). The NOC contemplates the further use of temporary rental apartments in KB soum centre, while design, approval, funding and construction of permanent, onsite FIFO accommodation is developed. The NOC is currently under consideration by Lenders. A further NOC is recommended to address issues around updated workforce projections and E&S commitments, to inform how the Environmental and Social Action Plan (ESAP) item on worker accommodation will be progressed.
- The non-conformance on OT's commitment to conduct a Completion Audit of the 2011 economically displaced households has been closed. The consultant team has completed the field work and report; the report makes recommendations for Corrective Actions that focus on good program closure, while shifting to and strengthening engagement through Regional Economic Development (RED) program activities. The CSP team is commended for reaching this milestone.
- A second OT Trade Union has been registered. The Local Employees Trade Union Committee (LETUC) and the existing OT Trade Union Committee (OT TUC) have commenced negotiation with OT LLC on a new Collective Agreement, which all parties aim to conclude by the end of November 2024. Concerns have been raised by OT employees regarding the calculation of salaries and this is expected to be a key topic of negotiation. The IESC observes that a lack of transparency on the calculations of salaries is a non-conformance. The IESC recommends clarity in disclosures to workers on salary calculations, alongside a review that can both simplify calculations and ensure greater predictability in earnings for workers.

2 Project Background and Introduction

The Oyu Tolgoi copper/gold mining Project ("the Project" or "OT Project") is located in the *aimag* (province) of Ömnögovi, in the South Gobi region of Mongolia, approximately 600 km south of the capital city, Ulaanbaatar ("UB"), and 80 km north of the Mongolia-China border. OT currently operates open pit mining at the Southern Oyu deposit and production from block cave underground mining operations in the higher-grade Hugo North deposit. Year-over-year copper concentrate production continues to increase at OT with the March 2023 commencement of mining from the higher-grade underground deposit. This is reflected in a 26% increase in mined coper from Q4 of 2022 to Q4 of 2023. Total ore delivered to the mill thus far in 2024 (January 1 through July 1, 2024) was 20.2 Mt from the open pit (at an average grade of 0.38%) and 3.2 Mt from the underground operation (at an average grade of 1.90%).

Construction of the underground mine involves eventual development more than 200 kilometers of underground tunnels at a depth of up to 1.3 kilometers. Underground tunneling is progressing consistently and the underground operation is expected to be fully ramped up by 2027. At that point in time the Oyu Tolgoi Project is expected to produce more than 500,000 tons of copper concentrate a year. Rio Tinto now has a 66.66% direct interest in Oyu Tolgoi, following the successful December 2022 acquisition of Turquoise Hill Resources Ltd. The balance of 33.33% ownership is with the Government of Mongolia.

2.1 Independent Environmental and Social Consultant Review

The IESC's role is to support the Lenders[1] by providing an external/independent Health, Safety and Environment and Communities (HSEC) monitoring evaluation of on-going operations of the OT Project. The Operational Phase of the Project began in 2013. The IESC periodically reports to the Lender group on conformance with environmental and social planning and commitments contained within the 2012 Environment and Social Impact Assessment (ESIA) and underlying Operational Phase Environmental and Social Management Plans (OESMPs). Commitments and Key Performance Indicators (KPIs) in these and other relevant documents define how OT will implement the mitigation strategies set out in the ESIA. Commitments are also contained in an Environment and Social Action Plan (ESAP) which contains time-bound future commitments developed at the time of finalization of the ESIA. These documents, along with internal Rio Tinto and OT procedures, represent the reference documents used by the IESC to monitor Project environment, social, health and safety performance.

This report presents a review of the Project's status as of September 2024. To consolidate this report in some instances references are provided to previous IESC Audit Reports for background on operational management plans and project history. The reader is referred to those prior Audit Reports for a full history of Project development, details of the 2023 Detailed Water Review, non-conformances, and implemented corrective actions.

Specific activities conducted for this Q3 2024 Site Audit include the following:

- Review of written information and data provided by OT in response to thematic Information Requests submitted by the IESC;
- A visit to the OT site and meetings at OT corporate headquarters during the week of September 16th – 20th, 2024. The meetings included presentations from OT and iterative in-person discussions

1 The Senior Lenders group includes: the International Finance Corporation (IFC), the European Bank for Reconstruction and Development (EBRD), Export Development Canada (EDC), Export-Import Bank of the United States (US EXIM), Export Finance and Insurance Corporation (EFIC), the Multi-lateral Guarantee Agency (MIGA), Standard Chartered Bank (SC) and BNP-Paribas.

regarding specific topics of interest. In addition to a kick-off presentation the following were undertaken:

- Discussion of planned expansion of Mine License Area and construction of the Dugat/Khaliv river diversion system;
- Discussion on potential rail delivery of copper concentrate and heap leach projects (pre-feasibility level concepts);
- Meeting on Water Resources Management Plan (excluding tailings seepage control);
- Discussion on implementation of the Q4 2023 Remedial Action Plan;
- Site tour to TSF, downgradient monitoring array, and environmental receptors;
- Site tour to potential water source locations in the Budaa ephemeral river channel;
- Presentation and meeting on GHG reduction efforts, ambient air quality, CHP stack emission quality, and vibration impacts;
- Presentation and meeting on mineral waste management;
- Presentation and meeting on non-mineral waste management including hazardous waste;
- Presentation and meeting on transportation and logistics including future concentrate export options;
- Update of biodiversity rangeland offset options;
- Update to elm conservation plan;
- Priority Plant Corrective Action Plan Update;
- Discussion on updated Biodiversity Monitoring and Evaluation Plan (BMEP) per agreed changes from 2024 Biodiversity Workshop;
- Site visit to Hustai National Park, near Ulaanbaatar, to discuss rangeland management at the location;
- Update on CSP implementation of social management plans, programs and key implementation documents;
- Update on Regional development including Local Employment and Local Procurement WGs;
- Meetings with stakeholders (TPC, Herders Households with RAP corrective actions, Munkh Nogoon Galba NGO);
- Discussions on Labour MP implementation including trade union relations, strike action follow-up, employee relations;
- Town Transformation and Employee Accommodation Project Taskforce representatives meeting; and
- Meetings with a sample of employees

In addition, specific discussions were held on implementation of key commitments/KPIs contained within the Operational Phase Environmental and Social Management Plans and the ESAP, as well as follow-up of findings and observations from the IESC May 2024 Desktop Audit Report[2].

The information, observations, and opinions presented in this report are those of Strength GEC, LLC and are independent of those of the Project and/or the Senior Lenders. Where topics are not referred to no risks to the Project have been identified.

2.2 Oyu Tolgoi Operating Status

OT currently operates open pit mining at the Southern Oyu deposit and supplemental underground production, using block cave mining techniques, from the higher-grade Hugo North deposit. The open pit mine is a conventional truck and shovel operation. Underground production began in March 2023 following many years of development. Ore from the underground is currently delivered to the surface via the production hoist in Shaft 2 and then via conveyor to surface. Shafts 3 and 4 will provide additional mine access haulage and ventilation, respectively. These infrastructure components are both scheduled for commissioning in the second half of 2024. Both the open pit and underground mines operate 24 hours per day based on two 12-hour working shifts.

Construction of the underground mine involves developing more than 200 kilometers of underground tunnels. In 2023 lateral development tunnels were expanded by almost 15.7 km. Oyu Tolgoi plans to annually produce more than 500,000 tons of copper concentrate when the underground operation is fully ramped up, at the earliest in Year 2028. Filtered concentrate is bagged for transport and currently trucked to the Chinese border. There are studies considering rail transport of concentrate from the OT site. The IESC will report on this option in future reporting as the concept becomes further developed. Planning is currently at the pre-feasibility level.

The concentrator design is based on processing ore at a rate of 35 million tons per year (nominally 100,000 tpd). The process design is based on concentration by conventional milling and flotation/technology using proven equipment. In Q3 of 2022 OT submitted a Notice of Change related to conversion of the concentrator circuit, while maintaining the overall existing processing capacity, to allow for the processing of ore obtained from underground block cave mining (NoC 2022 – 004). This NoC has been approved by the Lenders.

Key components of the NoC included:

- The addition of a fifth ball mill to achieve a finer primary grind;
- Additional rougher flotation capacity to provide higher recovery through increased flotation retention time;
- Additional column flotation capacity to enable recovery of the higher level of concentrate produced when processing the higher-grade Hugo North ore; and
- Additional concentrate dewatering and bagging capacity.

OT is currently completing the concentrator conversion project with commissioning planned for Q4 of 2024 and Q1 of 2025.

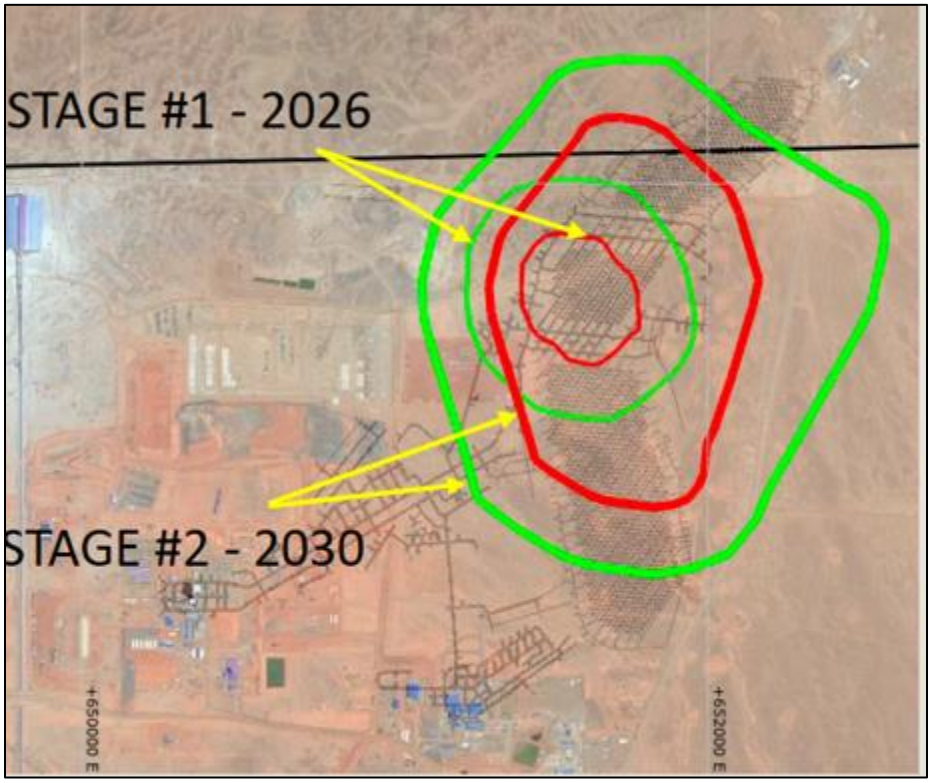
From the concentrator waste sludge (tailings) are filtered in two thickeners to approximately 60% solid content, allowing the recycling of water back into the process circuit. Non-recycled sludge (i.e., tailings) is pumped to the Tailings Storage Facility (TSF) for final disposal. Water from the tailings thickeners and TSF is recycled back to the concentrator, with 85.7% of water recycled in annual 2023 metrics.

[2] Strength GEC LLC, IESC Compliance Monitoring Report, Virtual/Desktop Audit, May 2024

Final copper concentrate is thickened and filtered before storage in sealed bags for ultimate transport, via trucks to the Gashuun Sukhait/Ganqimaodao (GSK/GMD) border crossing with China. In calendar year 2023 a total of 859,905 tons of copper concentrate were shipped to China, an increase of over 22% from the 704,250 tons or copper concentrate shipped in 2022.

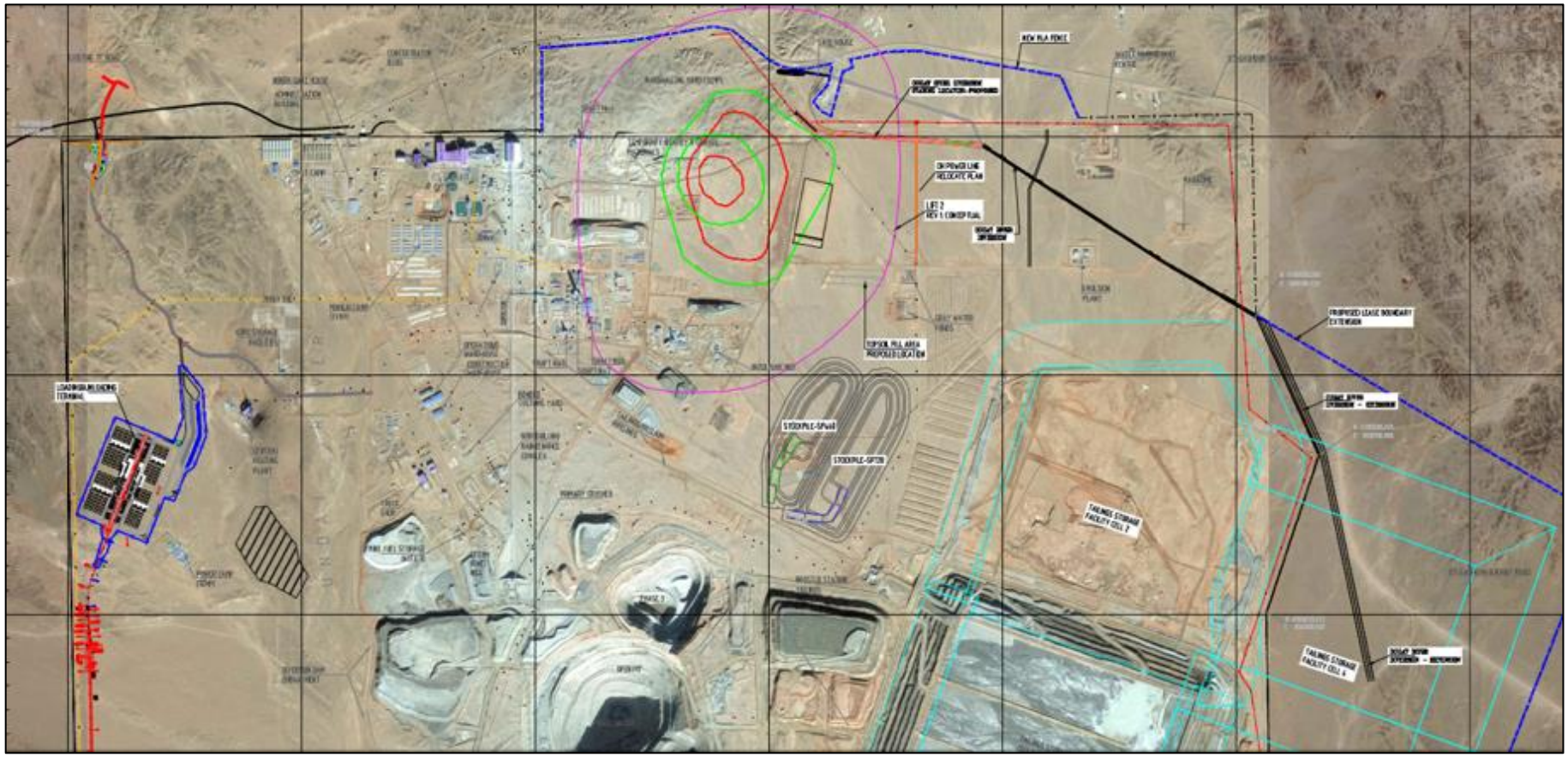
As reported on prior Audit Reports, OT is expanding the current Mine License Area (MLA) to accommodate expected subsidence associated with development of underground works. The current MLA encompasses a total of 8,489 hectares. Predicted fracture limits by the end of mining at Hugo North Life #1 are expected to create some visible surface subsidence that extends beyond the current northern boundary of the MLA. Figure 2-1 shows the expansion of the created subsidence zone by years 2026 (December) and 2030.

Figure 2-1 Subsidence Zone by 2026 and 2030 Relative to Northern Boundary of MLA



This created approximate 3 km^2 subsidence zone will require relocation of the current Dugat ephemeral alluvial channel via a Surface Water Diversion infrastructure feature, which will reroute surface flow of the Dugat and Khaliv ephemeral river alluvial systems and discharge this flow downgradient into the Budaa River system. The extent of the additional land required to accommodate this subsidence zone totals 266 hectares, or an approximate 3.1% increase in area of the MLA. A more detailed map of the planned expansion of the MLA to the north is shown in Figure 2–2. To the north a 2-m high fence has already been constructed, as shown in blue.

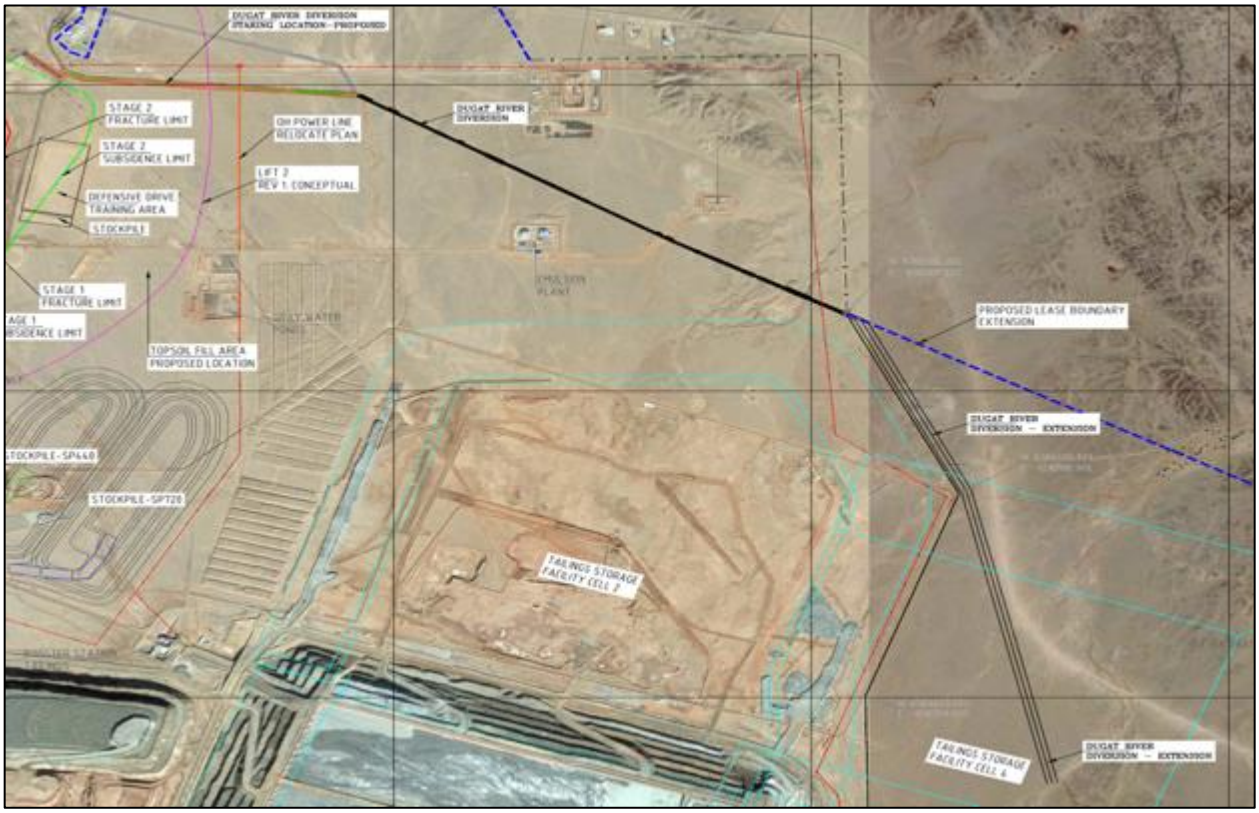
Figure 2-2 Location of New MLA Fence to the North, in Blue



During the prior Q3 2023 audit it was observed that fencing had already been installed for the expanded area of the MLA. This was documented in the Q3 2023 Audit Report as technically a non-conformance with the approved 2012 ESIA, as the Project Description had been modified without prior Lender or IESC evaluation of potential environmental and social impacts and associated planned mitigations of the expansion.

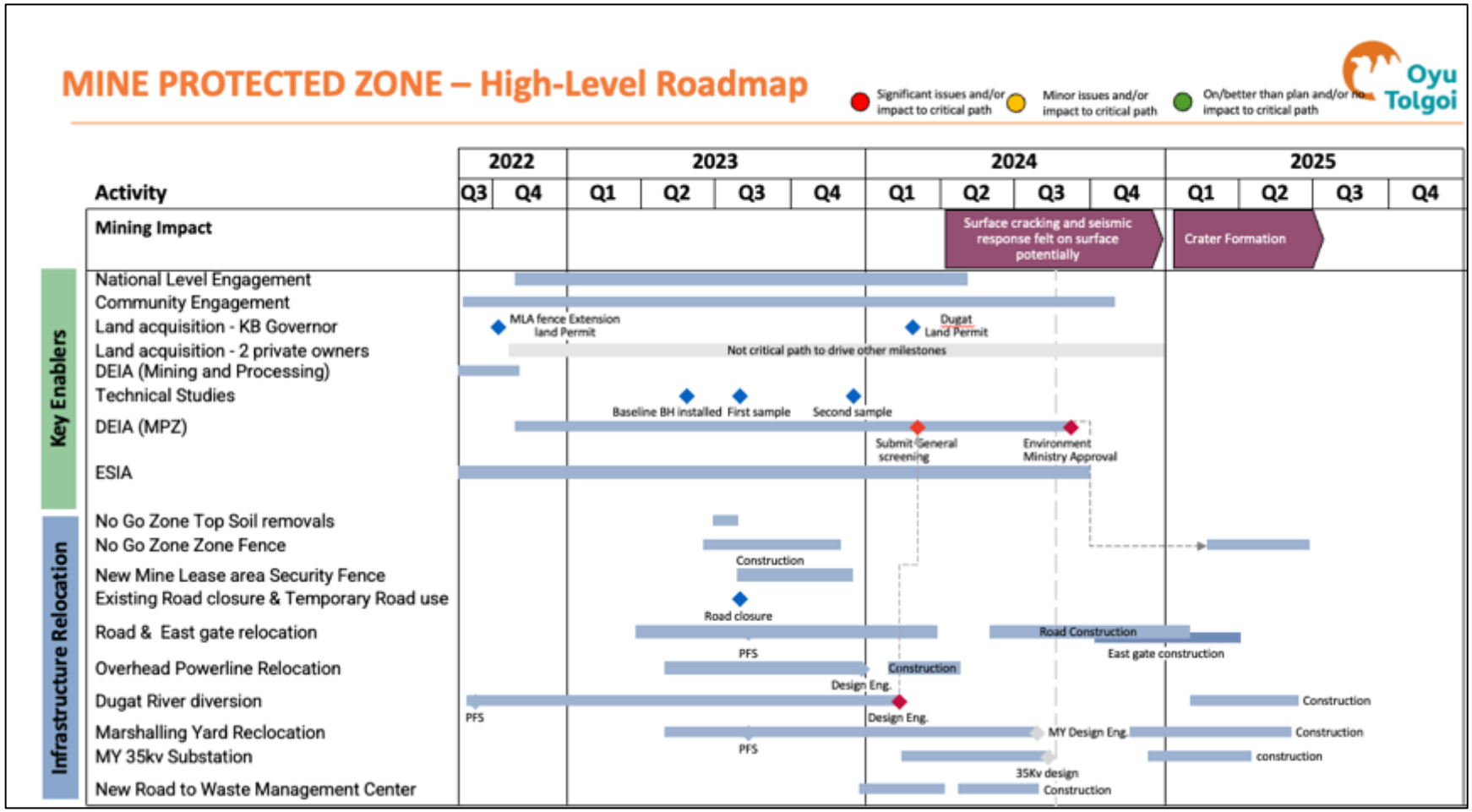
During the site visit OT reported that a finalized design had been established for the Dugat River Diversion. This diversion includes redevelopment of the existing Dugat Surface Water Diversion to include a 3.3 km extension beyond the MLA boundary, and to discharge to a location further downgradient of the existing discharge point within the Mine License Area. The general layout of the planned Surface Water Diversion is shown on Figure 2-3. The planned surface water diversion extension is in black to the east, discharging to a natural drainage channel that then feeds into the Budaa River ephemeral system. Interestingly the figure also shows a “TSF 4” which is indicative of OT long-term plans for TSF Cells #3 and #4 to the east of TSF Cells#1 and #2, respectively.

Figure 2-3 Location of Planned Dugat River Surface Water Diversion



A domestic Detailed Environmental Impact Assessment (DEIA) has been prepared for the overall expansion, but has not yet been approved by the Mongolian Ministry of Environment and Tourism (MET). Per the current update the formal approval is still pending and is a critical path item (Figure 2-4). Stakeholder consultation regarding the mine expansion has been in progress under the existing Stakeholder Engagement Plan.

Figure 2-4 Expansion of Mine License Area Schedule as of Q3 2024



OT has obtained approvals for the expansion of the MLA from regional Khanbogd soum regulators. The project modification required incorporation into the KB Land Management Plan of 2022, as well as a formal KB Governor resolution. There are overall 11 infrastructure projects included as part of the Mine Zone expansion, and OT has focused on those projects within the MLA. Topsoil has been removed from the new marshalling yard and the East Gate relocation subprojects are in progress.

In Q3 2023 a Notice of Change for the proposed Mine Zone Expansion was submitted to the Lenders, along with a supporting “Supplementary ESIA”, to correspond with the existing 2012 OT Mine ESIA. The Supplemental ESIA was submitted to the Lenders as Notice of Change 2023-004. The prepared Supplemental ESIA did not scope an entirely separate project, such as a stand-alone power plant or industrial estate. The overall OT mine project potential environmental and social impacts, and their associated mitigations planning, were addressed in the original 2012 ESIA. The scope of the supplementary ESIA is to adjust to predicted creation of the subsidence zone from underground mining operation. As such the Supplemental ESIA was submitted for review under the established Management of Change process, as described in the ESMP.

The objective of the Supplemental ESIA to assess the direct, indirect and cumulative (where applicable) environmental and social impacts associated with the predicted mine subsidence zone. The subsidence is not expected to create dramatic cliff features; rather a gradual bowl-shaped depression will form at the surface, so access is restricted (Figure 2-5). The Supplemental ESIA seeks to identifies potential impacts for expansion of the MLA, as well as mitigation and compensation measures that are necessary for Oyu Tolgoi to continue to meet its environmental and social commitments, including national legislation and requirements of Project Lenders.

Figure 2-5 Interior Fence Restricting Access to the Planned Subsidence Zone

The Supplemental ESIA provides an environmental and social impact assessment following an established methodology, resulting in identification of potential environmental and social impacts of high, moderate or low significance.

The Supplementary ESIA was reviewed by the Lenders and IESC with a formal response provided to OT in Q4 2023. In summary the IESC recommended objection to the submitted NoC. This stemmed from some disagreement regarding eventual determination in the ESIA of "minor" residual significance to certain environmental and social receptors. For example more information was required to adequately ensure preservation of surface water flow, and potentially groundwater flow, associated with any rerouting of the Dugat ephemeral river system around the MLA. Additional detail was requested regarding impact to the historic Dugat herding well, as well as potential loss of access to a culturally significant archeologic site (an "ovoo").

This feedback was accepted by OT, who then worked with their third-party consultant to revise the Supplementary ESIA. Since then there have been a series of discussions to finalize the Supplemental ESIA content, with a finalized version of the Supplemental ESIA just issued in Q3 2024. Importantly the finalized design of the Dugat River Surface Water Diversion was also just completed, and this constitutes a major component of mitigation planning. As shown on Figure 2-3 construction of the diversion is scheduled for the field season of 2025. **However, at the time of writing OT has informed the IESC that construction of the Dugat Diversion project has been delayed until the 2026 field season. This should allow adequate time to incorporate finalized design of the diversion into the existing Supplemental ESIA.**

In June 2020 the Government of Mongolia and OT formalized an Amended Agreement to the Power Source Framework Agreement (PSFA – AA). This PFSA-AA prioritized the construction of a state-owned power plant (SOPP) that would provide electricity to the OT site under a Power Purchase Agreement. In February 2021 the Ministry of Energy determined that a SOPP alone cannot reliably supply power to OT LLC and that the power supply should be sourced from the Mongolian national grid. The assessment also highlighted supplementary generation and transmission capacity are required before the Mongolian national grid can reliably supply power to OT.

2.3 Report Organization

Subsequent sections of this report are organized as follows:

- Section 3 – Health, Safety, Environment and Social Performance Management Systems
- Section 4 – Environment
- Section 5 – Social
- Section 6 – Worker Health and Safety
- Section 7 – Cultural Heritage
- Section 8 – Closure Planning
- Section 9 – Non-Conformance Table

The findings of this IESC review are presented in the form of observations, comments and recommendations. Two types of findings are included:

- non-conformances, included in the Non-Conformances Table (Section 9), which refer to issues related to Project commitments included in the ESIA or Operational Management Plans; and

- recommendations, included at the end of each section (3 – 8) which are based on the collective experience of GIIP and expertise of the IESC team members.

The IESC's recommendations are not considered mandatory and therefore their implementation is not required. However the IESC encourages the Project to consider the usefulness of all these recommendations and incorporate them, as appropriate and if technically/economically feasible, into new management activities.

3 Environmental and Social Management System and Planning

Environmental and social management for the OT Project is defined through a series of interlinked documents. The first tier of these is the framework document – Environmental and Social Management Plan[3] (ESMP). Underlying this ESMP are other OESMPs and procedures including the Biodiversity Management Plan (BMP). The Health, Safety, Environment and Community Management System (HSEC MS) framework for the OT Project is governed by the Rio Tinto HSEC MS, which is a mature system aligned with Copper Mark Certificate requirements. The Copper Mark is a leading assurance program for responsible production in the copper industry. Oyu Tolgoi was first certified with the Copper Mark Certificate in 2020 and has since maintained their conformance with the standard. The Copper Mark Assurance Process recognizes existing standards systems, reporting frameworks, and certifications in order to avoid redundancy and to promote the use of these initiatives.

Overall the HSEC MS is intended to manage the Project in compliance with Rio Tinto, Mongolian and Lender requirements of performance. Within the HSEC MS there are the OT Environment Team and the Communities and Social Performance (CSP) Team. The OT Project is subject to a variety of internal Rio Tinto and other external audits and reviews. Calendar Year 2023 internal and external ESHS audits are shown in Table 3-1.

Table 3-1 2023 External ESHS Audits

Origin	Description
Government	Environmental Audit to verify national compliance
Government	DZ Environmental protection agency inspection Environmental management plan 2023
Government	Mongolian Ministry of Environment and Tourism inspection
Government	Ministry of Construction and Urban Development state inspection of mine facilities
Government	OT Feasibility Study 2023 inspection government experts
Government	Prevention Fire and Disaster Management
Rio Tinto	Safety maturity model
Rio Tinto	OT Water Management
Rio Tinto	Copper Mark Certification
Rio Tinto	Business Conformance Audit (BCA)
Rio Tinto	Contractor Management Excellence Assessment
Rio Tinto	Tailings and Water Storage internal Standard Review
SGS Aviation	Audit on Khanbumbat airport

[3] Environmental and Social Management Plan – Doc. No. OT-10-PLN-0003 updated 2021

3.1 Status of Operational Environmental and Social Management Plans

The current ESMP reflects the identification and assessment of impacts and risks detailed in the integrated OT ESIA, and is described in previous IESC reports along with the OESMPs and supporting procedures/other implementation documents. The ESMP goes through a formal review cycle every two years. In 2021 the ESMP was updated via a formal Notice of Change (*NoC 2021- 002).* The ESMP has recently been updated again and was submitted to Lenders for review in Q3 2024. The Lenders recently objected to this recent update pending updating of certain information in the ESMP to reflect the current underground operation and other details. A revised NoC is expected in Q4 2024.

A summary of current OT Operational Management Plans and underlying Key Implementation Documents is provided in Table 3–2. These plans remained mostly consistent in Year 2024 as with the year prior. Overall the IESC has not noted any requirement for significant modification to environmental and social planning of the overall OT project with incorporation of the underground development. Key management practices remain consistent, such as ongoing monitoring of air and water quality, as well as the management of mineral waste (tailings and waste rock).

Table 3-2 Current 2024 Operational Management Plans and Key Implementation Documents

Operational Management Plan	Document Reference	Key Implementation Documents
Atmospheric Emissions Management Plan	OT-10-E12-PLN-0001	• Air Quality Monitoring Plan (OT-10-E12-PLN-0002) • Rio Tinto Air Quality Protection Standard (E12)
Biodiversity Action Plan	OT-10-E16-PLN-0001	--
Biodiversity Management Plan	OT-10-E16-PLN-0002	• Illegal Wildlife, Wildlife Products, and Plant Procedure (OT-10-E14-PRC-0005) • Dead animal and nest inspection procedure along roads and power lines (OT-10-E14-PRC-0004) • OT Site Wide Traffic Management Plan (OT-10-C3-PRC-0005) • OT-GSK Road Mitigation Strategy
Biodiversity Offset Management Plan	OT-10-E14-PLN-0007	--
Biodiversity Monitoring and Evaluation Plan	OT-10-E16-PLN-004	--
Community Health, Safety and Security Management Plan	OT-10-PLN-0001	• Community Outreach Plan (OT-12-PLN-0016-M)
Contractor Management Framework	OT-07-PLN-0001	• OT General Conditions for Goods and Services • OT Procurement Principles (PR-00) • Supplier Qualification Policy (PR-02) • International Strategic Supplier Collaboration Policy (PR-05) • South Gobi Supplier Development Policy (PR-06)

Operational Management Plan	Document Reference	Key Implementation Documents
		• National Supplier Development Policy (PR-07) • OT Procurement Personnel Code of Conduct (PR-08) • Contractor Engagement Handbook for Designated Managers (OT-07-GDL-9007) • Contractor Engagement Handbook for Suppliers (OT-07-GDL-9006)
Cultural Heritage Management Plan	OT-10-PLN-0002	• Land Disturbance Permit Procedure (OT-10-E14-PRC-0003) • Cultural Heritage Management System Procedures • Cultural heritage chance find procedure
Ecosystem Service Monitoring and Evaluation Plan		--
Emergency Preparedness and Response Plan	OT-12-PLN-0011	• Spill Response Procedure (OT-10-E15-PRC-0002) • Incident Management Flow Chart (OT-14-MAP-0002) • OT Emergency Response Plan (ERP) • Hazard Identification and Risk Management Procedure (OT-03-PRC-0001)
Hazardous Materials and Non-Mineral Waste Management Plan	OT-10-E15-PLN-0001	• Hazardous Material Management Procedure (OT-10-E15-PRC-0001) • How to use ChemAlert Guideline (OT-10-E15-GDL-0001) • Incident Management Procedure (OT-14-PRC-0009) • Spill Response Procedure (OT-10-E15-PRC-0002) • Non-Mineral Waste Classification Procedure (OT-10-E15-PRC-0004) • Non-Mineral Waste Collection and Transfer Procedure (OT-10-E15-PRC-0006)
In-migration Management Plan	OT-10-PLN-0004	None

Operational Management Plan	Document Reference	Key Implementation Documents
Labor Management Plan	OT-10-PLN-0005	• HR-A1: Employment Policy • HR-A2.1: Recruitment and Selection Procedure • HR-B-044: Alcohol, Narcotic Drugs and Psychotropic Substance Management Procedure • HR-C3: Language Training Procedure • HR-C4: Trades Training Procedure • HR-D5.1: Service Recognition Procedure • HR-D3: Working Conditions Procedure • HR-D1.1 Allowance Procedure • HR-G2: Equal Employment Opportunity Policy • HR-G6.1: Hours of Work Procedure • HR-G1.1: Human Rights Guidance • HR-G1: Human Rights Policy • HR-G5.2: State Awards and Nomination Procedure • HR-H4: Expatriate Code of Conduct • HR-H7.1: Camp Standard and Code of Behaviour • HR-ST-02: Drug and Alcohol Management Standard • HR-H4: Expatriate Code of Conduct • HR-H2.1: Grievance and Fair Treatment Procedure • HR-H.3.1: Leave Procedure • Human Rights Policy
Land Disturbance Control and Rehabilitation Management Plan	OT-10-E14-PLN-0005	• Topsoil Handling Procedure (OT-10-E14-PRC-0001) • Technical Rehabilitation Procedure (OT-10-E14-PRC-0002)

Operational Management Plan	Document Reference	Key Implementation Documents
		• Land Disturbance Permit Procedure (OT-10-E14-PRC-0003) • Priority Plant Protection Procedure (OT-10-E14-PRC-0007) • Biological Rehabilitation Procedure (OT-10-E14-PRC-0010)
Mine Closure Plan	None	• Mine Closure Plan
Mineral Waste Management Plan	OT-10-E13-PLN-0001	• Integrated Mineral Waste, Acid Rock Drainage and Dump Management Plan OT-10-E13-PLN-0002 • Oyu Tolgoi Material Segregation Procedure (OT-10-E13-PRC-0001-E) • Rio Tinto Chemically Reactive Mineral Waste Control Standard (OT-10-E13-STD-0001) • Rio Tinto Chemically Reactive Mineral Waste Control Standard (OT-10-E13-STD- 0001)
Noise and Vibration Management Plan	OT-10-E00-PLN-0001	• Noise Monitoring and Control Procedure (OT-00-PRC-0001) • Blasting Standard Work Procedures
Pastureland and Livelihood Improvement Management Plan	OT-10-PLN-0013	• Local Agribusiness Support Strategy
Resettlement Action Plan	OT-10-PLN-0006	• Grievance and Fair Treatment Procedure (HR-10) • Pastureland Management Strategy
Stakeholder Engagement Plan	OT-05-PLN-0001	--
Transport Management Plan	OT-10-C3-PLN-0001	• Road Construction and Maintenance Procedure (OT-10-C3-PRC-0001) • Heavy Vehicle Operating Procedure (OT-10-C3-PRC-0002) • Light Vehicle Operating Procedure (OT-10-C3-PRC-0003) • Tire and Rim Procedure (OT-10-C3-PRC-0004) • OT Site Wide Traffic Management Plan (OT-10-C3-PRC-0005)

Operational Management Plan	Document Reference	Key Implementation Documents
Water Resources Management Plan	OT-10-E11-PLN-0001	• Water Monitoring Procedure (OT-10-E11-PLN-0002) • Water Quality Assurance and Quality Control Plan (OT-10-E11-PLN-0003) • Rio Tinto Water Quality Protection Standard (E11)

3.2 Notice of Changes to Operational Environmental and Social Management Plans

A Management of Change process is described in the ESMP, and is intended to allow evolution of the Project over time either due to Project modifications or updated environmental and social procedures. The implementation of the formal NoC process is described in previous IESC reports. In summary there are three categories of NoCs with Category 1 being significant changes to the Project Description or Project Standards and Category 3 being temporary modifications within the Mine License area that have no or limited environmental or social impact.

A rolling list of NoCs over the last several years is provided in Table 3-3, including their formal titles, date of submission, and approval status as of Q3 2024.

Table 3-3 Category 2 Notice of Changes for Year 2022 – 2024

Notice of Change Number	Notice of Change Title	Date of Submission to Lenders	Status
2022-01	Copper Concentrate Shipment Through OT-TT-ZB	March 2022	Approved
2022-02	Revisions to the OT Community, Health, Safety and Security Management Plan	April 2022	Approved
2022-03	Update and Revisions to the Pastureland and Livelihood Improvement Management Plan	June 2022	Approved
2022-04	OT Concentrator Conversion Project	July 2022	Approved
2022-05	Copper Concentrate Shipment through OT-TT-ZB Railway Erlain	November 2022	Conditionally approved for pilot shipment
2022-06	Revisions to Contractor Management Framework	December 2022	Approved
2023-01	Changes to Mineral Waste Management Plan	January 2023	Approved
2023-02	Changes to Oyu Tolgoi Material Segregation Procedure	January 2023	Approved
2023-03	Changes to -Biodiversity Management Plan	January 2023	Approved
2023-04	Changes to OT-10-E16-PLN-0004-E-Biodiversity Monitoring and Evaluation Plan	January 2023	Approved
2023-05	Changes to HR-10- PLN-0001-E- Labour Management Plan	January 2023	Approved
2023-06	Revision to the Water resource management plan and updates in relevant documents on E11 Water Quality Protection Standard	February 2023	Approved
2023-07	To accommodate FIFO employees in KHB Soum rental apartment	March 2023	Approved
2023-08	Mine Subsidence Zone Environmental and Social Impact Assessment	September 2023	Pending. Revised Supplemental ESIA provided Q3 2024
2024-01	Changes to Priority Plant Corrective Action Plan Timeline	August 2024	Approved
2024-02	Periodic update and revision to the Environmental and Social Management Plan	August 2024	Objected to pending revisions
2024-03	To accommodate FIFO employees in Khanbogd (KB) soum rental apartment	August 2024	Objected to pending revisions

Notice of Change Number	Notice of Change Title	Date of Submission to Lenders	Status
2024-04	Change of approach for hazardous waste disposal	September 2024	Conditionally Accepted
2024-05	Changes to OT-10-E16-PLN-0004-E Biodiversity Monitoring and Evaluation Plan	September 2024	Accepted

3.3 Environmental and Social Action Plan

Table 3-4 contains a summary of the Project Environmental and Social Action Plan (ESAP), as well as a current Q4 2024 implementation status. The ESAP was developed at the time of ESIA finalization and Lender financing commitment (2012). This ESAP is disclosed at the following link:

https://disclosures.ifc.org/project-detail/ESRS/29007/oyu-tolgoi-llc

Table 3-4 Environmental and Social Action Plan

ESAP Item	Action Plan Item	Implementation Status
1	Power Plant Environmental and Social Impact Assessment (ESIA)	An ESIA for a potential power plant at Tavan Tolgoi, to be owned and operated by OT, was reviewed by the IESC in Q4 of 2018. The Government of Mongolia then announced that any power plant will be state-owned, but that it may take some time for this project to develop. As such in 2022 an Electricity Supply Agreement (ESA) was established between OT and the Government of Mongolia. The ESA describes that power to the project will continue to be provided by the Inner Mongolian Power Corporation until a domestic state-owned source becomes available.
2	Biodiversity Action Plan (BAP)	Implemented and generally in progress as planned. However there is one key Class II non-conformance identified in this report regarding offset to rangeland impacts. As discussed in Section 4.9 in Q1 of 2024 a Biodiversity Workshop was held between OT, the Lenders, and the IESC, with a path forward identified. Progress on development of an alternative offset to rangeland impacts is described in this report.
3	Operational Phase Environmental and Social Management	Completed as detailed in Table 3–2 of this report
4	Mine Closure Plan	**See Section 8.** The current version of the Oyu Tolgoi Closure Plan was last updated in 2017 (AMEC). A revision is required to ensure the Closure Plan aligns with 2019 updates to *Mongolia National Regulation on Mine Closure and Rehabilitation* and Rio Tinto Closure Standard updates from 2015 and 2021. OT has previously prepared a Gap Assessment of the current Closure Plan with these requirements. OT has previously represented that the updated Closure Plan would become available in Q4 of 2022. From the Q3 2022 Audit Report the tendering of bids to update the Closure Plan was described as “in progress”. In Q2 2023 OT reported that procurement has been delayed but that an external consultant had eventually been retained to update OT’s Closure Plan referencing overall OT closure requirements as detailed above. From the prior Q3 2023 Audit it was reported that an updated draft Closure Plan would become available for review by Q4 2023. This over-arching Closure Plan is still in development. An updated 2023 Feasibility Study has not yet been finalized, and this will drive updated closure costs. Overall OT closure lability lies within Rio Tinto’s over-arching closure provisioning. The current overall OT Closure Plan is outdated, although TSF Cell#1 is under progressive reclamation. This reclamation is being undertaken following a specific Oyu Tolgoi TSF Cell#1 Closure Plan. The TSF Cell#1 Closure Plan covers a five year closure period beginning in 2024 and extending into 2029. A 10 m NAF cover layer has already been emplaced as part of progressive reclamation. Rock mulch and other revegetation trials are in progress.

5	Worker Housing Development	**See Section 5.1.3.** Worker accommodation is at capacity, and some of the existing camps are at the end of their life expectancy. The 2012 ESIA described that OT is developing and implementing a long-term worker housing strategy (Section 4.12.4); however a strategy, incorporating both current and anticipated future demand, is not yet evident. The IESC finds that this commitment has not been met by OT in planning for worker accommodation, and recommends that a strategic plan be developed to demonstrate that potential E&S risks have been fully considered. In Q3 2024 an NOC was submitted specific to the use of KB rental apartments for temporary worker accommodation. While there has been some work on progressing the OT Town Transformation (TT) and Worker Accommodation framework, the IESC recommends that a separate NOC be developed about the TT program, which provides an update on workforce projection and what this means for long term worker housing.
6	Industrial Estate	OT currently has no plans to develop an industrial estate outside of the site, however is a key stakeholder in the development and implementation of the Khanbogd Masterplan, which includes an industrial zone.
7	Pastureland Livelihood and Improvement Management Plan	The PLIMP was revised in 2022 and current performance is described in this report.
8	Concentrator Expansion Reports	A concentrator conversion project is in construction to accommodate the processing of higher-grade underground ore (Approved NoC 2022—04). There is no expansion of throughput through the concentrator. The concentrator conversion project should be completed by 2025.
9	Independent E&S Monitoring Program	Ongoing with role of IESC
10	Environmental and Social Reports	Most recent 2023 Annual Environmental and Social Report provided by OT in Q2 of 2024
11	Transmission Line from OT to Khanbogd soum	Completed
12	OT – GSK Road Diversion	Completed
13	Update of Resettlement Action Plan	Completed

4 Environmental Performance

4.1 Water Management

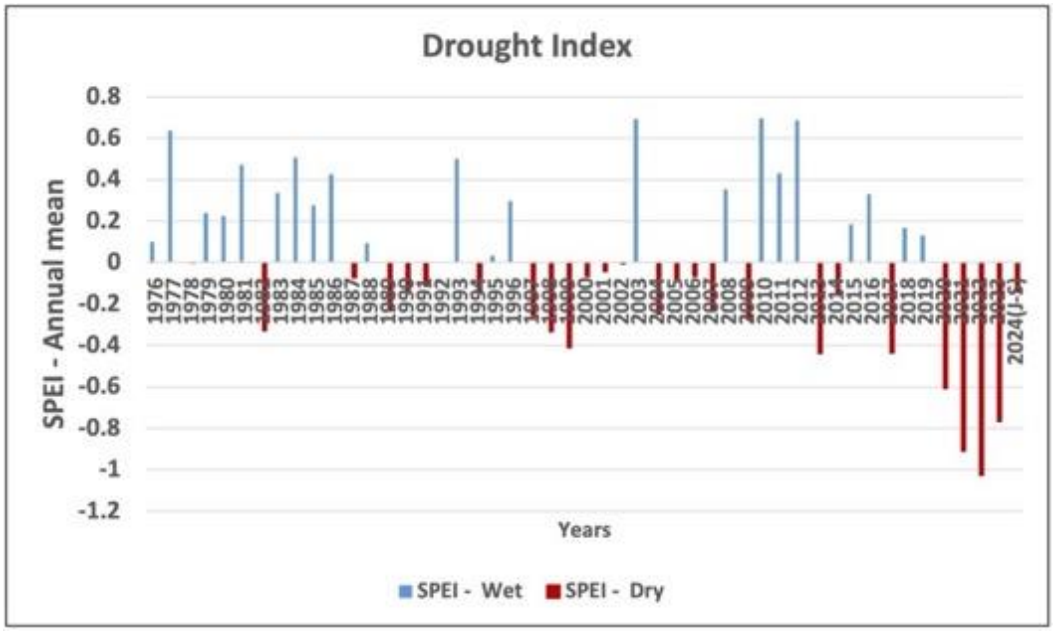
Calendar year 2024 precipitation through mid-September totaled 120.6 mm at the OT weather station. Even more precipitation fell following the IESC site visit, leading to flooding conditions in the Undai River, Dugat and Budaa River ephemeral channels. In late September 2024 there was a substantial precipitation event at the OT site in which 52 mm of rain fell over 35 hours. In Khanbogd 74 mm of rain fell over the same event, leading to flooding and power outages. This year's precipitation is already over twice that of calendar year 2023, which totaled 67.6 mm.

In Year 2022 and 2021 total precipitation totals were 53.3 mm and 95.3 mm. The mean value for the site of 100.1 mm/year [4]. Precipitation patterns at the site have varied greatly over the last several years, leading to direct impacts on pasture quality. Although in sum total limited precipitation can occur in some years, such as 2023, exceptional precipitation events due occur leading to flooding events. This occurred in July 2023 in which 28 mm of precipitation fell in just 20 minutes. This led to a substantial flood event, as discussed in the prior Q3 2023 Audit Report.

In 2021 Oyu Tolgoi issued an original paper examining long-term climate trends in the South Gobi region (*Observed Climate Change at Local Scale – Southeastern Gobi in Mongolia, 2021).* This paper was co-authored by OT Environment Team staff and climate professionals at the National University of Mongolia. In the study climate data from 1976 – 2019, and collected from four different soums in the southeastern Gobi region, were critically evaluated to determine long-term trends. This was the first study of its kind for the region. Figure 4–1 summarizes the resultant drought index trends determined in the study, with data through Year 2024 added. As can be seen the drought index has become increasingly severe over the last several years.

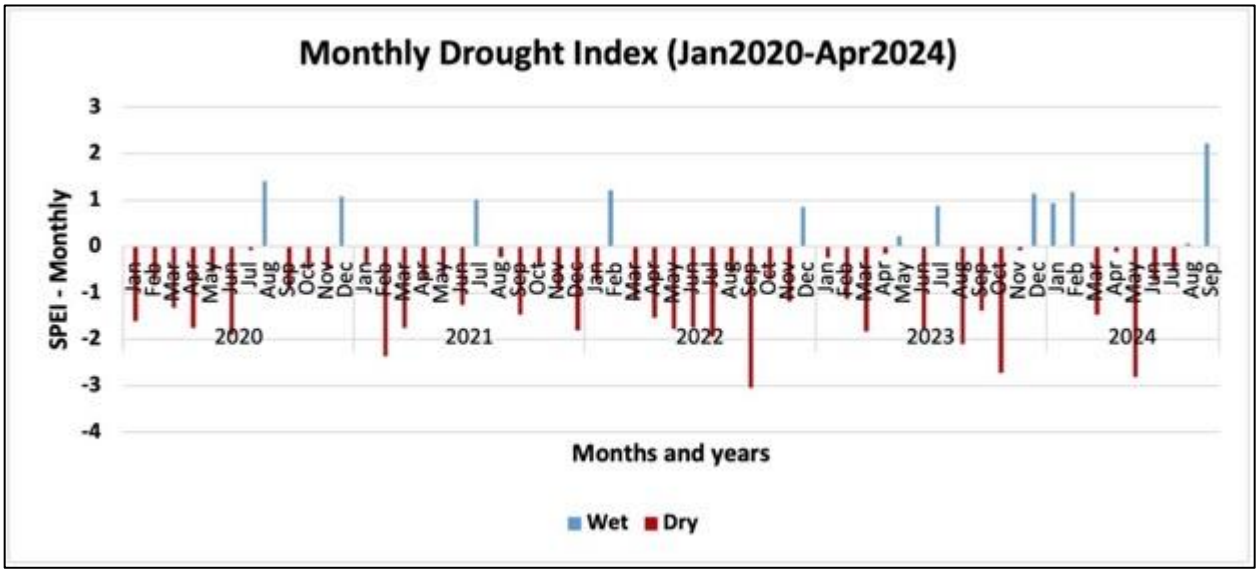
[4] Oyu Tolgoi Mine Site General Condition Report. 2020. Document Number: OT-10-E12-COM-0001-D-Communication.

Figure 4-1 Long-Term Annual Drought Index in Southeastern Gobi Region 1976 – Q3 2024



The scant rain that has fallen over the last decade has increasingly occurred over short, intensive torrential events. These events do not evenly distribute moisture over the range in the summer season, leading to a higher drought index. Higher temperatures in the region have exacerbated the drought index, as what precipitation does fall quickly evaporates. This has also limited forage growth and caused water stress to livestock and herders in the region. The limited number of "wet" months over a four year time period from 2020 - 2024 is shown in Figure 4-2. This figure also shows the September 2024 precipitation event. Figure 4-2 also shows the winter of 2023-2024 "Dzud" snow events which led to the deaths of over 10 million livestock across the country.

Figure 4-2 Monthly Drought Index in Southeastern Gobi Region 2020 – 2024



4.1.1 OT Water Usage and Efficiency

The OT Project is permitted to withdraw groundwater from 28 production wells installed in the regional Gunii Hooloi (GH) aquifer, which contains brackish and non-potable water also not suitable for livestock watering, at a rate of 918 L/s (approximately 79,315 m^3/day). Permitting for this water abstraction is contained in a Long-Term Water Contract with the Government of Mongolia, issued in 2016. The Long-Term Water Contract is valid through Year 2040, and discussed later in this section.

In calendar year 2024, through August, a total of 9.47 million m^3 of water has been withdrawn from the GH aquifer (equivalent to 442.1 L/s on average). In calendar year 2023 a total of 16.74 million m^3 of water was withdrawn from the GH aquifer. In year 2022 a total of 15.81 million m^3 of water was withdrawn. The overall 2023 water usage was just over 57.8% of the permitted amount approved by the Ministry of Environment and Tourism (MET) under the Long-Term Water Contract.

OT target raw water usage rate is 700 L/s (60,480 m^3/day). The project has been below this target pumping rate since the beginning of operations. In Year 2023 the total annual consumption rate of 530.7 L/s was 75.8% of the target usage rate (WR-KPI-02). This compares with 2022 consumption of 501 L/s, which was 71.5% of the target usage rate. Maximum monthly water raw water usage is highest in winter when much of available water at the TSF is locked up as ice. The concentrator circuit is by far the biggest use of water at the site, using almost 90% of all make-up supply, and as such is the focus of water recycling efforts.

In calendar year 2023 OT achieved an 85.7% water recycling efficiency rate. In calendar Year 2022 the water recycling efficiency rate was 86.6%, and in 2021 the recycling rate was 88.3%. Over the last several years, and historically, water recycling efficiencies have been well above the 80% threshold minimum criteria recycling rate included as a key performance indicator in the ESIA (WR-KPI-03). In calendar year 2024, through August, OT is achieving an average 87.9% recycling rate. Water usage stabilized over Q2 to Q3 2024 with the transition to the use of TSF Cell#2.

In 2023 raw water usage rate was 433 L of water consumed/ton of ore produced. In Year 2022 the water usage rate was approximately 406 L of water consumed/ton of ore produced. These rates are all well below the ESIA Key Performance Indicator target of 547 L/ton-ore (WR-KPI-04). The IESC reports that OT has historically performed well in water consumption assessment criteria relative to ESIA commitments.

With respect to overall tailings density – the mean value of tailings density sent to the TSF in calendar year 2024 thus far is 59.8%. The Tailings Operation Manual, which is a component of the original 2012 ESIA, discusses the thickening of tailings using a conventional thickener prior to deposition at the TSF at 60 to 64% solids by weight. There is no KPI related to tailings density.

Oyu Tolgoi is one of the most water-efficient large copper mines in the world, ranking in the 1st quartile of raw water consumption per ton of ore produced. This has been benchmarked with the widely-used database maintained by Skarn Associates, which tracks this metric across 157 other copper operations. Average water consumption across this large data set is approximately 1,200 L/ton-ore. Specific to Oyu Tolgoi it is also very important to recognize that the deep groundwaters of the GH aquifer are brackish, non-potable, and not of sufficient quality for agricultural use or the watering of livestock (i.e., the water is naturally high in dissolved salts). In 2023 there were no community complaints related to potential impacts associated the withdrawal of brackish groundwater from the GH aquifer.

4.1.2 Regional Groundwater

In 2023 approximately 90% of the water sourced from the GH basin was from Clusters 1, 2 and 3, located in the northeast of the aquifer basin, with Clusters 4 and 5 to the southwest making up the additional 10% of supply. To date in calendar year 2024 (through August) approximately 87%of supply has been sourced

from Clusters 1,2 and 3. Maximum drawdowns in the GH aquifer are located at the centers of the NE and SW bore fields. Drawdowns in water levels are monitored at two key deep aquifer piezometers: Site A1 and A2 (Figure 4-3). Results from monitoring are currently compared with 2015 modeling predictions. Water levels in the GH are responsive to pumping cycles, and as a result water levels can fluctuate between 3 – 8 meters due to variation in the chosen abstraction regime. Generally, water levels are significantly above authorized drawdown limits.

At Site A1 (GHMB11-02) observed water level drawdowns generally conform with the 2015 model predictions for a “Base Storage Scenario” (Figure 4-4). However, at site A2 the observed water levels are consistently below model predictions for even the low storage scenario (Figure 4-5). An aquitard is present at site A2 which extends the radius of impact from pumping farther (i.e., a wider “cone of depression”). Again it is noted here that only about 10% of overall GH supply to OT in year 2023 was sourced from the SW region of the borefield.

Figure 4-3 Map of Gunii Hooloi Aquifer Production Bores (Blue) and Monitoring Bores (Red)

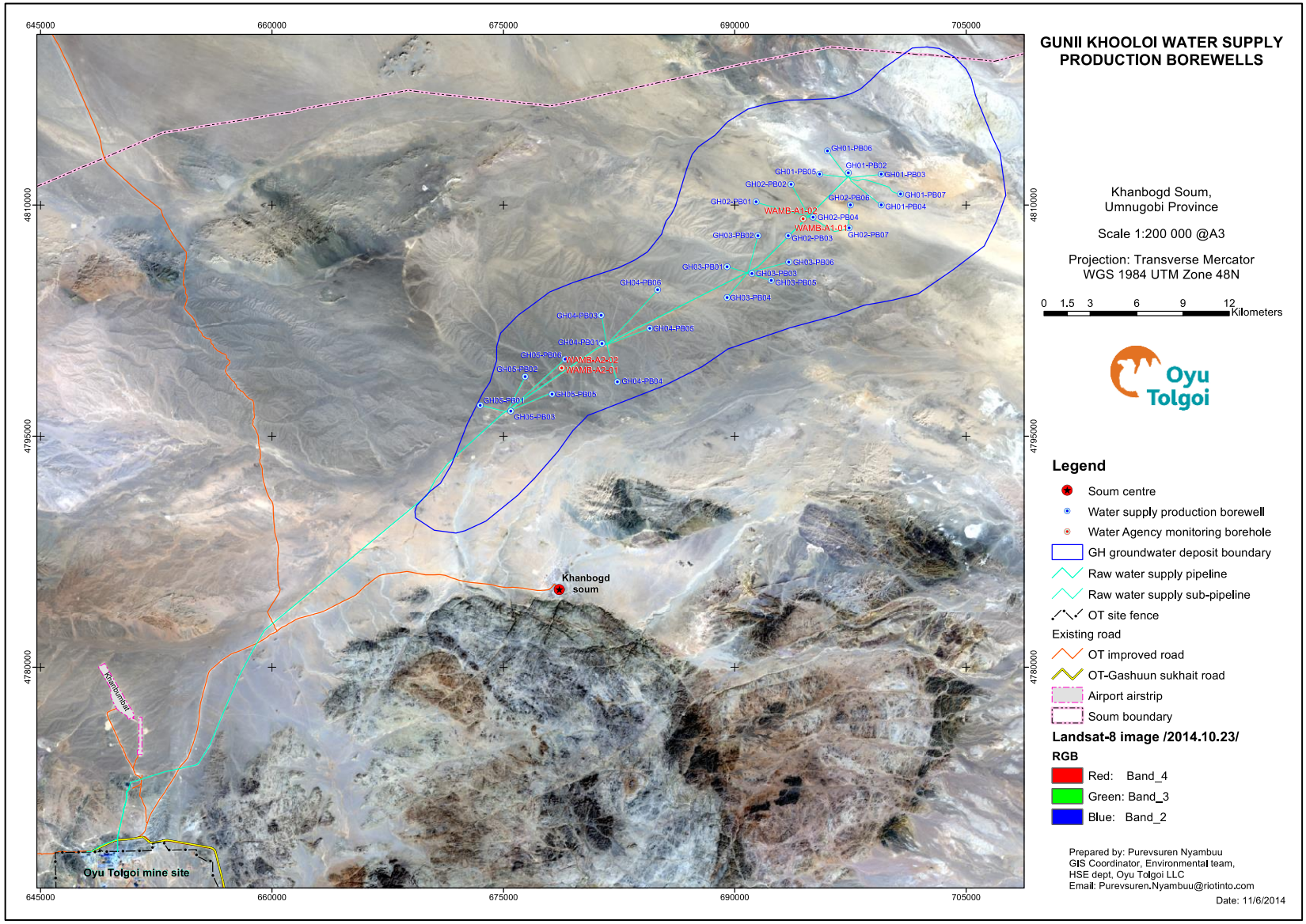


Figure 4-4 Observed Gunii Hooloi Aquifer Drawdown at Site A1 Relative to 2015 Model Predictions

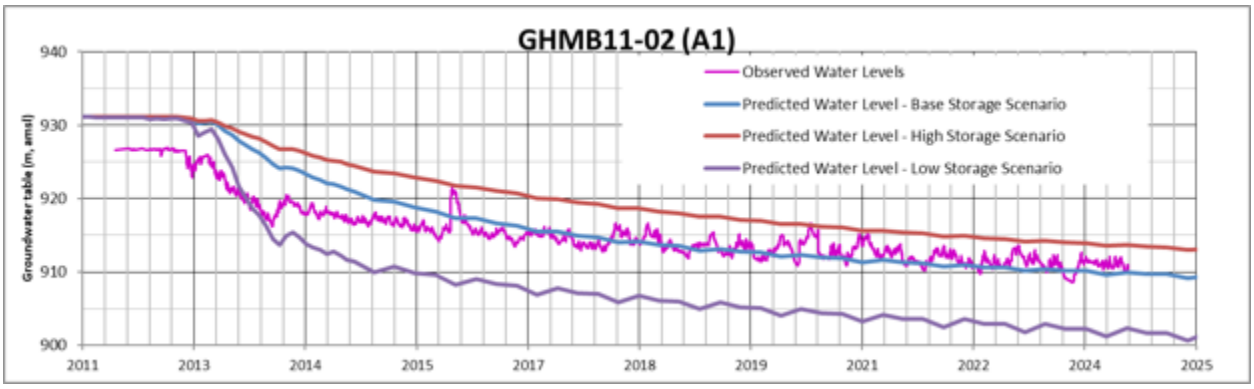
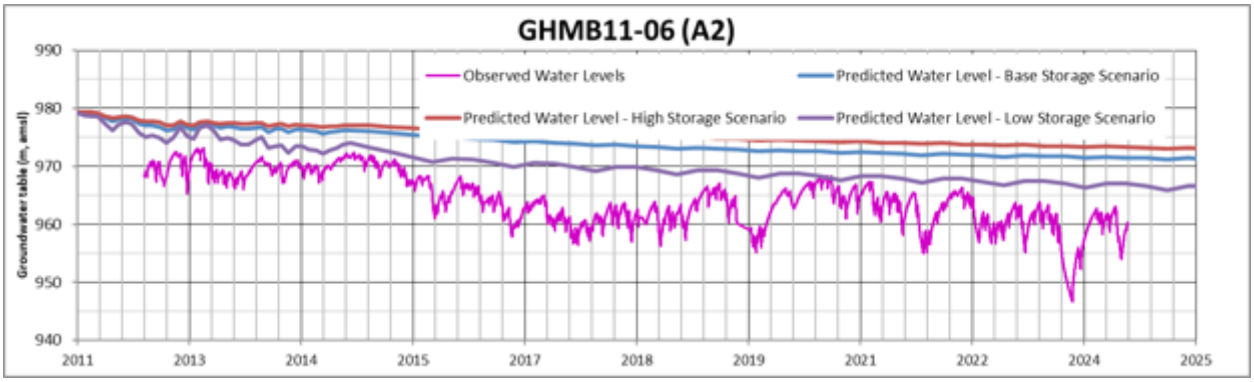


Figure 4-5 Observed Gunii Hooloi Aquifer Drawdown at Site A2 Relative to 2015 Model Predictions



OT is currently performing an update to the 2015 model which will be used in the re-assessment of the GH reserve. This updated modeling is required by the Mongolia Water Authority and the field program was completed in the 2024 field season. From the completed field work a reserve reassessment report will be prepared by a combined team from Ochi Us, Water Management, SRK and OT. Current plans are to by Q4 2024 have this report submitted to the Water Reserve Council (part of the Mongolia Water Authority). There is a risk that the Water Reserve Council may question the permitted allotment of 918 L/s to OT from the GH aquifer, which is substantially more than OT is currently using. However OT does have the legal right to this allotment under the Long-Term Water Contract. There are many permitting issues in limbo pending authorization of the 2023 Feasibility Study.

Once completed the Concentrator Conversion Project will require an approximately 40 L/s of additional supply. If enacted a heap leach project would require an additional 100 L/s. Thus, the precise water requirements of the overall OT project are somewhat in flux, and the IESC will continue to report on the water permitting landscape as it relates to overall OT operations. Regionally OT has already delivered a bulk water supply system to Khanbogd town (in 2017 and reported on in prior IESC reporting). This system provides enough water supply for approximately 12,000 people. This year OT is developing a Khanbogd agricultural water supply study. However, it is very important that OT not obligate to providing this type of water supply without also demonstrating sustainability in the south Gobi region.

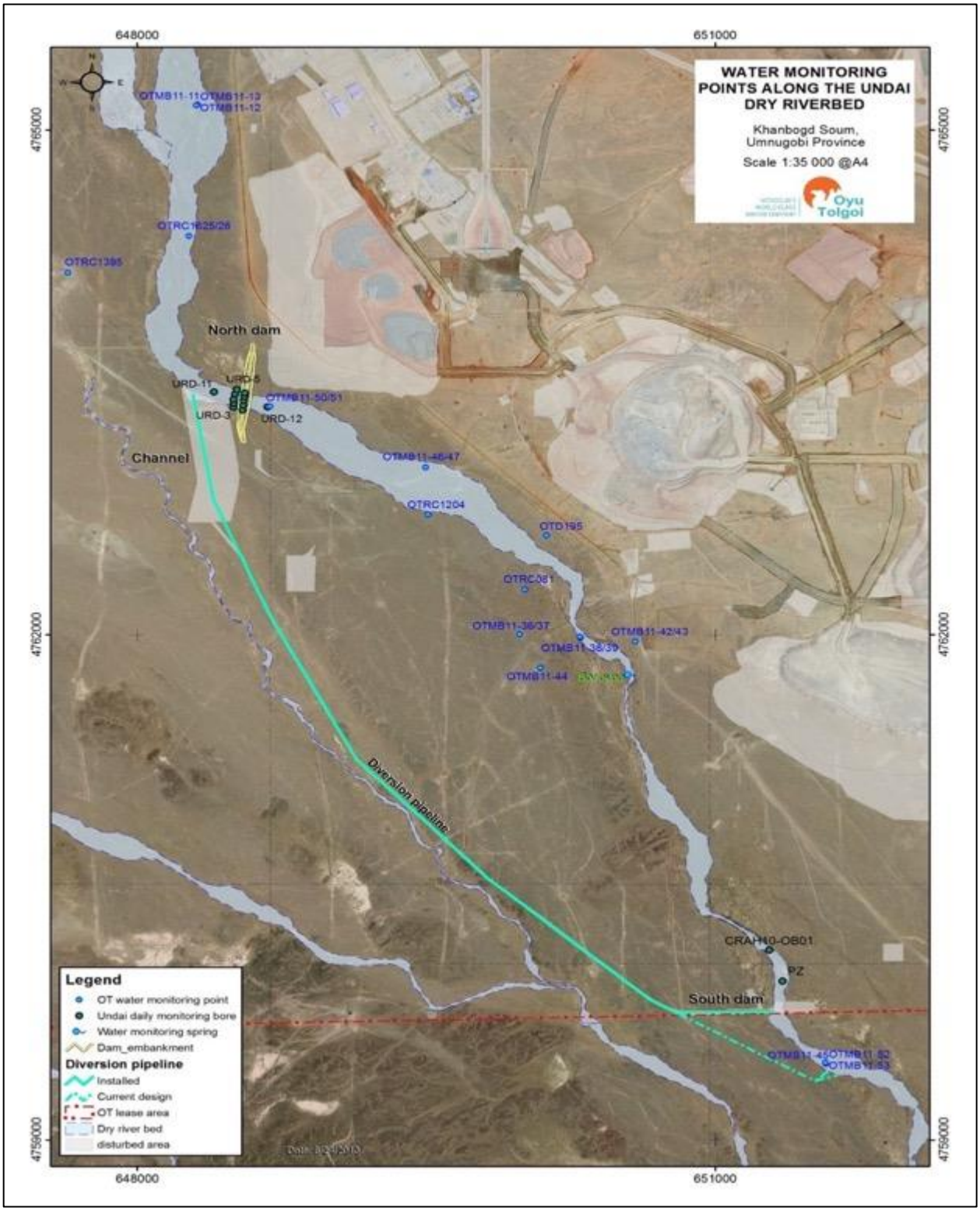
4.1.3 Undai River Diversion Performance

Findings regarding the current performance of the ephemeral Undai River Diversion are based on the most recent Undai River Biannual Report (#59), issued in Q3 2024. This is the 59th iteration of Undai River Diversion system reporting. The Undai River status reports were originally developed on a fortnightly frequency, then quarterly, and, since 2019, biannually. This reflects the gradual stabilization of the system following 2013 construction of the Undai River Diversion system, which bypasses the open pit. As discussed in previous reporting the Undai River Diversion system has the capacity of diverting up to ~ 700 m^3/day of groundwater flow from the northern cut-off dam through a subterranean tunnel system to an ultimate discharge point just south of the MLA.

Diverted groundwater flow creates a large artificial spring that is heavily used by wildlife as well as herders and their livestock. This artificial spring is referred to as the “New Bor Ovoo spring” to reflect replacement of the historic Bor Ovoo spring, which was previously located along the Undai River in the vicinity of the open pit. The historic Bor Ovoo spring was a relatively small feature with average annual surface of area of approximately 40 m^2. The morphology of the New Bor Ovoo Spring has been measured by OT since 2013 construction of the Undai River Diversion. The surface area of the new spring fluctuates as a function of freezing and gradual thawing from ambient air temperatures; however in all circumstances there is greater water availability in the New Bor Ovoo Spring.

The Undai River Diversion is a mature system with a 12-year operating history. An established monitoring network of 14 nested boreholes allows monitoring of water levels in shallow alluvial sediments as well as deeper aquifers. The constructed Undai Diversion system, location of the old Bor Ovoo Spring, and location of the New Bor Ovoo Spring are shown in Figure 4-6.

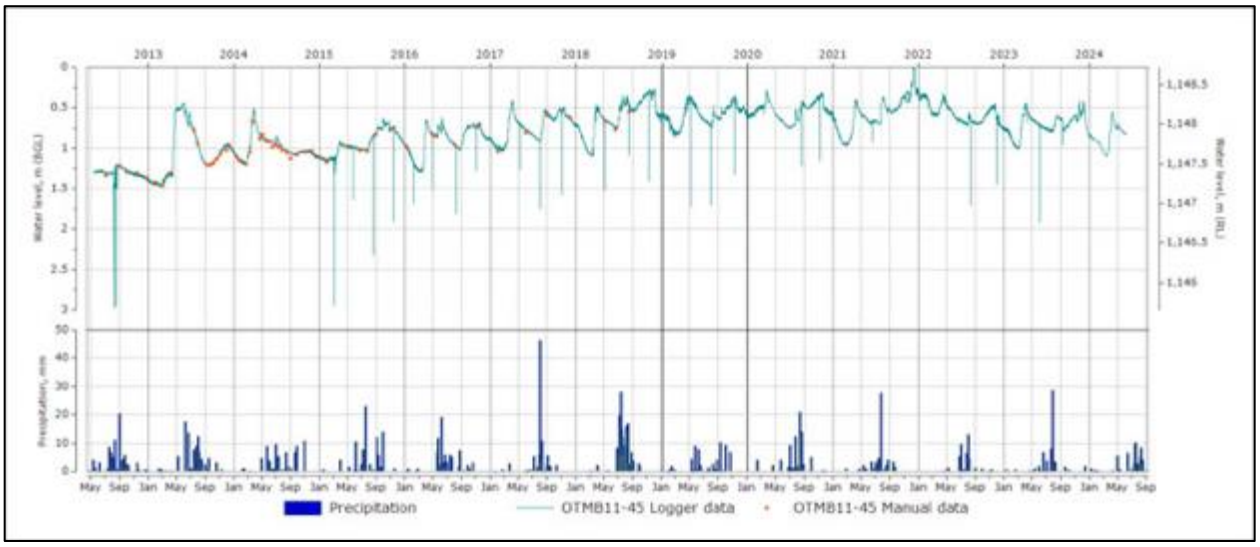
Figure 4-6 Monitoring Points Along Undai River Diversion System



The New Bor Ovoo Spring has an established pattern of growing during the winter freezing season, then gradually decreasing in size through the summer months. The replacement spring has regularly had some water presence through the summer months, with the exception of the summer of 2015 which followed consecutive years of below-average precipitation. The New Bor Ovoo spring area expands greatly in winter months, allowing some tourists to even ice skate on the surface. In the spring there is a gradual reduction in surface saturation area.

In addition to tracking morphology of the replacement spring there is key monitoring point OTMB11-45 approximately 400 m down gradient of the New Bor Ovoo spring in the shallow alluvial sediments of the Undai River. Data from post-construction (i.e., post 2013) monitoring reflect a general rising trend in water level, with current water levels ranging from 0.0 – 1.0 m below ground surface (bgs), as a function of precipitation and the seasonal freezing and melting of the ice sheets (Figure 4 – 7). In general, the depth to water is shallower than from before construction of the Undai River Diversion. There are also monitoring points at this location installed in the weathered bedrock and fractured bedrock units underlying the Undai River alluvium (OTMB 11-52/53), and data from monitoring of these units also show a water level trend above historic value. These impacts are noted up to 2 km downgradient of the New Bor Ovoo location.

Figure 4-7 Response of OTMB 11-45 Over Undai River Surface Water Diversion Completion



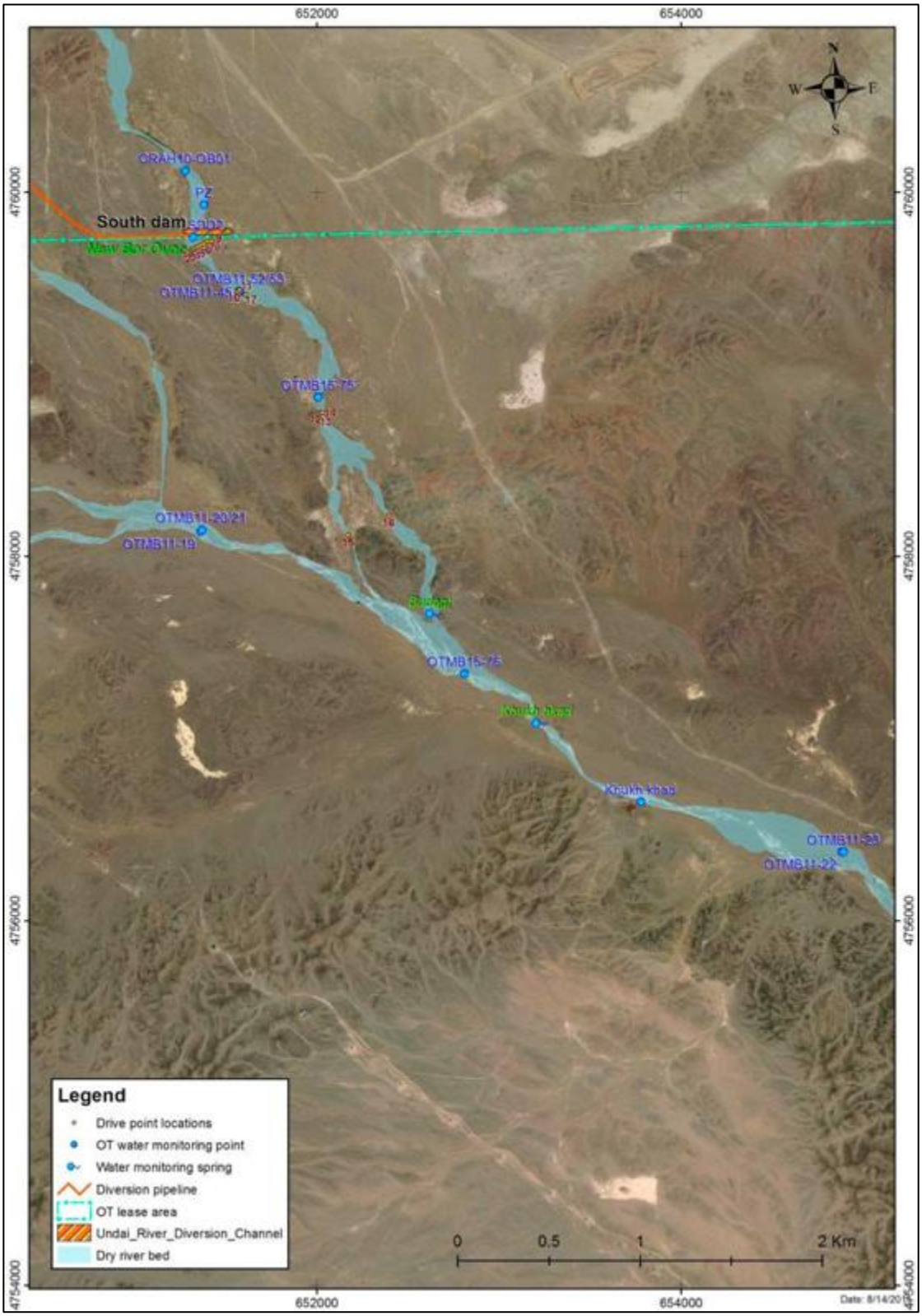
The trend of higher water levels suggests a greater volume of groundwater availability below the MLA than before construction of the Undai River Diversion. This is caused by the bypassing of the Diversion around faults that crosscut the Undai River system in the vicinity of the open pit. These cross-cutting faults historically caused leakage from the system, decreasing water availability in the Undai River alluvial sediments downgradient of the faulting. Despite the prolonged drought in the region in calendar Year 2023, the surface flow rate at the New Bor Ovoo has averaged 1.1 L/s. The New Bor Ovoo spring does have the potential to dry up if diverted rates of groundwater below fall below 50 m^3/day (0.6 L/s); however, in general this does not occur even during dry years.

The IESC toured the New Bor Ovoo during this field audit. The water quality of the New Bor Ovoo spring is typically very good and the spring received a lot of use from domestic animals and wildlife. TDS values ranging around 250 - 500 mg/L, approximately one-quarter to one-half of the Mongolian potable drinking water standard of 1,000 mg/L (MNS 900 – 2018). Occasionally regional herders have accessed the fenced New Bor Ovoo spring outlet to obtain a potable water supply.

4.1.4 Downgradient Herder Well and Spring Performance

The ultimate success of the Undai River Diversion is continuously assessed on long-term depth to groundwater data provided from Undai River monitoring points and the long-term viability of the closest springs located down gradient of the OT site. This is also true of the Dugat/Khaliv ephemeral river system. The success of the Project must also be evaluated against the backdrop of climate variations - for example normal episodic drought years and flooding events. Figure 4-8 shows the OT water monitoring network immediately downgradient of the MLA and within the Undai River channel.

Figure 4-8 OT Water Monitoring Network Immediately Downgradient of the New Bor Ovoo



The springs downgradient and closest to the OT Mine License Area in the Undai River channel include Budagt and Khukh khad (Figure 4-8), with Buural and Maanit located further downgradient (Figure 4-9 below). OT monitors monthly the surface area and depth of all springs and herder wells in its area influence. The most likely possibly impacted environmental receptor down gradient of the site is Budagt spring, which is located above the confluence of the Undai River Diversion (i.e., the “Western Channel”) with the main Undai River channel. This specific location receives limited recharge with the exception of direct precipitation and diverted groundwater flow (i.e., floods are diverted to just below this location in the Western Channel).

The surface area expression of the Budagt spring varies widely in monitoring events, as does the morphology of other springs in the south Gobi region. In fact during this Audit the OT has just received a significant rain event, leading to flooding of many of the ephemeral channels in the region. During this Q3 2024 site visit the IESC toured key springs down gradient of the site including the Budagt. The IESC has reviewed historic as well as Q3 2024 current photography and not discerned any impact.

The down gradient and relatively minor Khuk khad spring had historically been dry for much of the year, but in recent years has had increased water availability. In long-term monitoring data the spring had standing visible water for generally two months of the year. However, in 2022 the spring had standing water for eight months of that year. In 2023 the Khukh khad spring had water for approximately five months. This appears to indicate greater overall water availability in the Undai River system at this location, despite generally lower precipitation totals over the last several years. In general there appears to be greater water availability at this spring location and also at the associated Khukh khad herder well. Depth to water measurements at OTMB11-23, adjacent to the Khukh khad herder well, reflect general rising water level trends in weathered bedrock (Figure 4-10). The trend is also apparent in historic monitoring at the Khukh khad herder well, which has become buried in sediment and is no longer in use.

The Buural spring has had mostly continuous water availability, having standing water present in all months of calendar years 2022 and 2023 with the exception of winter months. In 2024 thus far the spring has had water every month.

Figure 4-9 Herder Wells and Springs Further Downgradient in Undai Channel (Buural and Maanit)

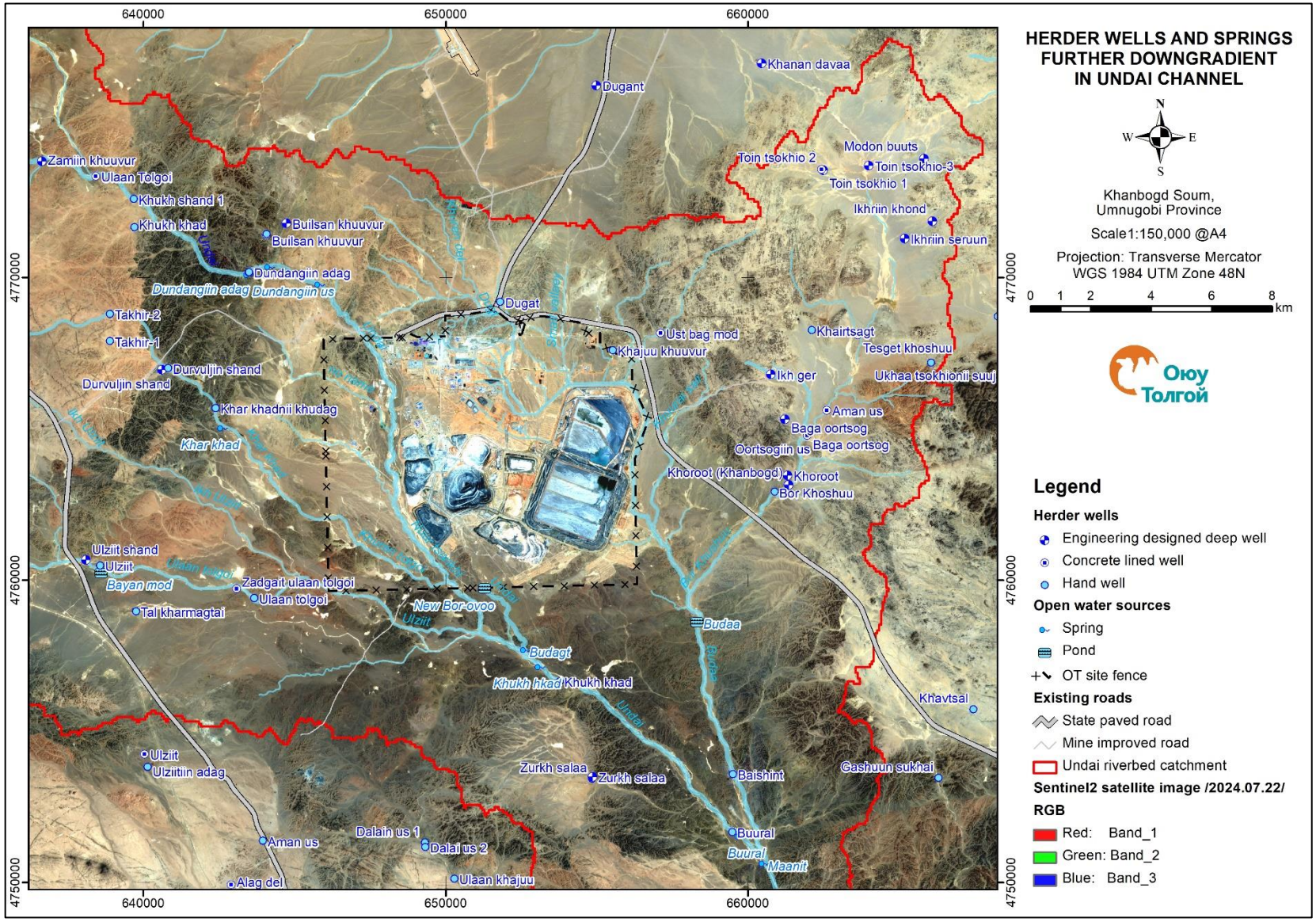
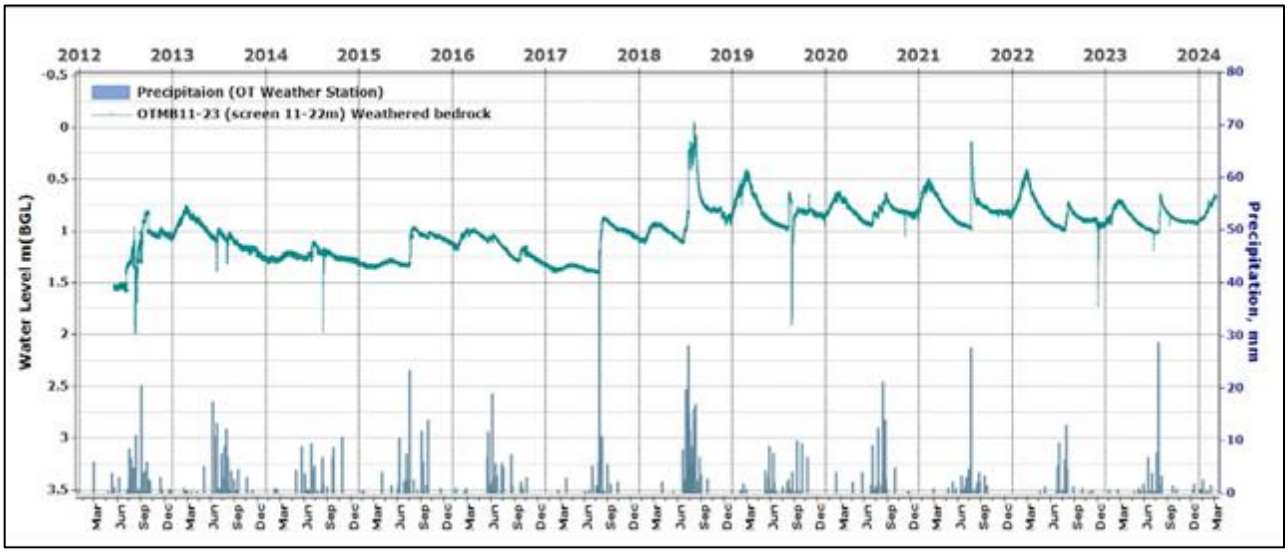


Figure 4-10 Depth to Water at OTMB11-23 (adjacent to Khukh khad Herder Well)



Of particular focus during this Audit was review of potential environmental receptors in the Dugat/Khaliv ephemeral river systems, which cross-cut the site in the area of the TSF before forming the larger Budaa ephemeral river system. Recently some NGO commentary has suggested that springs downgradient of the site and within this system have gone dry as a result of OT operations, and beginning in approximately year 2020. Specifically, these “springs” were identified as Budaa, Ulaan khoshuu, Baishint and Buural.

Of these four locations the Baishint and Buural are already included in the OT water monitoring program. The Buural location is actually a spring with long-term water presence, often exceeding 200 $m^{2.}$ The Baishint is a herder well that has also historically been included in the water monitoring program. The IESC is providing a photograph of this location taken during the audit, with the herder well clearly located just outside the main Budaa channel (Figure 4-11). Note in this photograph the alluvium of the Budaa channel is saturated following a storm event. Another photograph is shown of the same location just one week later during an additional summer storm which completely saturated the Budaa system (Figure 4-12).

Figure 4-11 Baishint Herder Well Adjacent to Ephemeral Budaa River

Figure 4-12 Baishint Herder Well One Week Later

The two additional alleged new “springs” that have gone dry were the Budaa and Ulaan khoshuu. Neither of these features are included in the current water monitoring program, as they were not recognized as herder wells or springs during baseline studies including the ESIA of 2012, as well as Mongolian domestic Detailed Environmental Impact Assessments from 2006, 2012, 2016 and 2022. These two locations are located 4.2 km (Budaa) and 5.6 km (Ulaan khoshuu) downgradient of the MLA boundary near TSF Cell#1. These locations were visited by OT Environment staff in Q3 2024 with their locations pinned on Figure 4-13

Figure 4-13 Locations of Budaa and Ulaan khoshuu

At both locations water was found in alluvial sediments below ground surface. The visit to these locations was nine (9) days after a precipitation event. Depth to water was 23 cm at the Budaa location. A photograph of the location is provided as 4-14. Note the presence of bedrock outcropping which constricts the channel, potentially leading to shallower depths to groundwater

Figure 4-14 Budaa Location in Budaa Ephemeral River System

Depth to groundwater following the rainstorm was 18 cm at Ulaan khoshuu. Interestingly the TDS at Ulaan khoshuu was measured at 1,380 mg/L, with 690 mg/L at the Budaa location. A photograph of this location is provided as 4-15. As is often the case the location of standing water in topographic lows can lead to the short-term appearance of a spring, with actual depth to waters dependent on the reference point.

Figure 4-15 Ulaan khoshuu Location in Budaa Ephemeral River System

The presence of standing water in alluvial sediments of the region heavily influenced by precipitation events and shifting morphologies during flood events. Even when a location appears “dry” there is often evidence of livestock/endemic species use via digging of shallow surface sediments to access near-surface groundwater as shown in Figure 4–16.

Figure 4-16 Evidence of Shallow Groundwater Accessed by Wildlife in Otherwise "Dry" Location

Both of these locations were visited several weeks later during this Audit. Photographs of the Budaa and Ulaan khoshuu locations are shown on Figures 4-17 and 4-18, respectively. Note these photos were taken on September 19, 2024, only a few days following a major flood event from 43 mm of precipitation that occurred on September 15 – 16th. Even when alluvium are “topped off” with recharge the surface expression often quickly recedes.

Figure 4-17 Budaa Location Following Major Flood Event

Figure 4-18 Ulaan khoshuu Location Following Major Flood Event

4.1.5 Water Abstraction Impact and Well Rehabilitation

Overall OT maintains a mature water monitoring network which encompasses a total of 399 points including 325 groundwater monitoring wells/boreholes, 64 herder wells and 10 natural springs. The monitoring network includes locations in the Khanbogd, Manlai and Tsogttsetsii *soum*s of the Ömnögovi *aimag.*

In both 2022 and 2023 there were no community complaints regarding perceived negative impact to herder wells as a result of OT water abstraction from the GH aquifer, or other OT mining activities. Over several years of monitoring no direct or indirect OT Project impacts to herder wells or natural springs have been identified in OT Environment Team analysis, although the department is continuously monitoring water level data to identify any possible correlation (WR-KPI-01).

In 2021 a 5-year external review, discussed in detail in the May 2022 IESC Audit Report, did not identify any discernible impacts in shallow alluvial units, including those in the Gunii Hooloi basin. Any prolonged water level decrease or change to water quality at a herder well triggers an OT Hydrogeological Assessment, including an investigation and organization of a meeting with the well owner. OT has been monitoring water levels in the region for 20 years now (since 2003). As a result of this extensive research it has been determined that in general the main factor influencing the performance of herder wells is the condition of the wells themselves and outdated operating modes.

OT has over many years implemented well rehabilitation and new herder well installation programs in its broad area of influence. The intent of this program is to ensure long-term sustainable yield of existing wells, thereby preserving the pastoral livestock breeding tradition that has been practiced in the region for centuries. Many of the existing wells are of inferior construction quality and have poor hygiene elements. Details were provided in recent Audit Reports on four herder wells recently rehabilitated in the Dund khaliv, Togoot shand, Bayan and Gashuun Sukhait regions. In 2023 an additional five herder wells were rehabilitated in the Khanbogd soum (wells Khukh shand, Builsan khuuvur, Bagsukhai, Elgen, Khulsan). Rehabilitation of historic herder wells is coordinated by the Communities Team.

4.2 TSF Cell #1 Environmental Performance

The Tailings Storage Facility (TSF) Cell#1 is 2 km east of the open pit and 5 km southeast of the concentrator plant. The TSF was designed to contain a total of 720 M tons of tailings within two adjacent approximately 2 x 2 km size cells. The Cell # 1 structure consists of 70-meter high perimeter dams built of waste rock and is now no longer in active use. Cell # 1 was in operation from 2013 – 2023. TSF Cell # 1 is now undergoing progressive reclamation trials for closure. Current freeboard at Cell#1 is approximately 6 meters, enough for six month short-term use in the event Cell # 2 is not available. The Cell # 2 pond reclaim system is now in use, replacing the former Cell # 1 reclaim pond.

During project construction in 2013 a “cut-off dam” was constructed just to the east of the TSF Cell#1 in the Khaliv River alluvial channel. This dam (the “East Toe Collection Dyke”) was installed specifically for the purpose of collecting any seepage from the TSF so that it can be contained on the site. The IESC has extensively discussed seepage at the TSF in prior Audit Reports. Seepage water from three locations, including waters collected from depressurizing bores, has historically been collected by OT in a Seepage Collection Pond and either used for dust suppression on surface roads or recycled for use in the concentrator. In the ESIA it was expected that eventual seepage rates would be approximately 20 – 40 L/s; however this seepage was to be fully contained on site.

In 2018 an Independent Tailings Review Panel (ITRP) recommended that the seepage collection system be moved from a low point in the alluvial stream bed, behind the cutoff embankment, to a replacement geomembrane-lined sump adjacent to the already-constructed seepage pump system.

In November 2021 OT formally identified an Environmental Incident at the TSF related to seepage collection. In summary it was theorized that the relocated seepage collection system had not sufficiently contained collected waters, and a preferential pathway had developed that allowed this water to migrate past the East Toe Collection Dyke (i.e. the "cut-off embankment") and enter the Dugat/Khaliv ephemeral drainage. The Environmental Incident was detected through the specific monitoring of shallow alluvial bore OTMB 16–79, which identified high TDS concentrations. The preferential pathway by which these collected water are bypassing the East Toe Collection Dyke (cut-off embankment), was initially identified by OT in Figure 4-19. In the figure the collection sump is shown, as well as hypothesized preferential pathways in red by which seepage entered the flood diversion trench. In the Q2 2022 Audit Report the IESC described that "…*It is likely that this high TDS water has migrated off the site (i.e., the Mine License Area) as the boundary is very close to the OTMB 16 – 79 monitoring bore location*".

As discussed later in this section it was hypothesized that seepage from the TSF could be bypassing the cut-off embankment. A potential migration pathway is at the interface of the Cut-off Dam and underlying weathered bedrock. To mitigate this potential OT has installed a French drain system below the cut-off embankment, as discussed later in this section.

Figure 4-19 Cut-off Dam to the East of the TSF, Location of Historic TSF Seepage Pond/Sump

Higher TDS levels to the east of the TSF were first recognized by OT in 2019 monitoring of shallow alluvial monitoring bore OTMB 16 – 79; however levels decreased the following year following flood events. In 2021 the repetition of high TDS values in monitoring triggered the formal identification of an Environmental Incident. The follow-on Incident Investigation Report was prepared by OT in November 2021 which summarized root causes of the Environmental Incident as follows:

- High TDS values in a critical monitoring point, OTMB 16 – 79, were not identified as material and no “owner” was assigned;
- There were no “trigger” action levels for high TDS values; and
- There was no formal plan for communicating environmental incidents of this nature with community members.

OT subsequently identified a series of corrective actions to avoid another repeat of the Environmental Incident, including the following:

- Preparation of a presentation and events to communicate findings with stakeholders;
- Preparation of a formal Trigger Action Response Plan (TARP); and
- Development of a publicly available monitoring data platform to allow for stakeholder tracking.

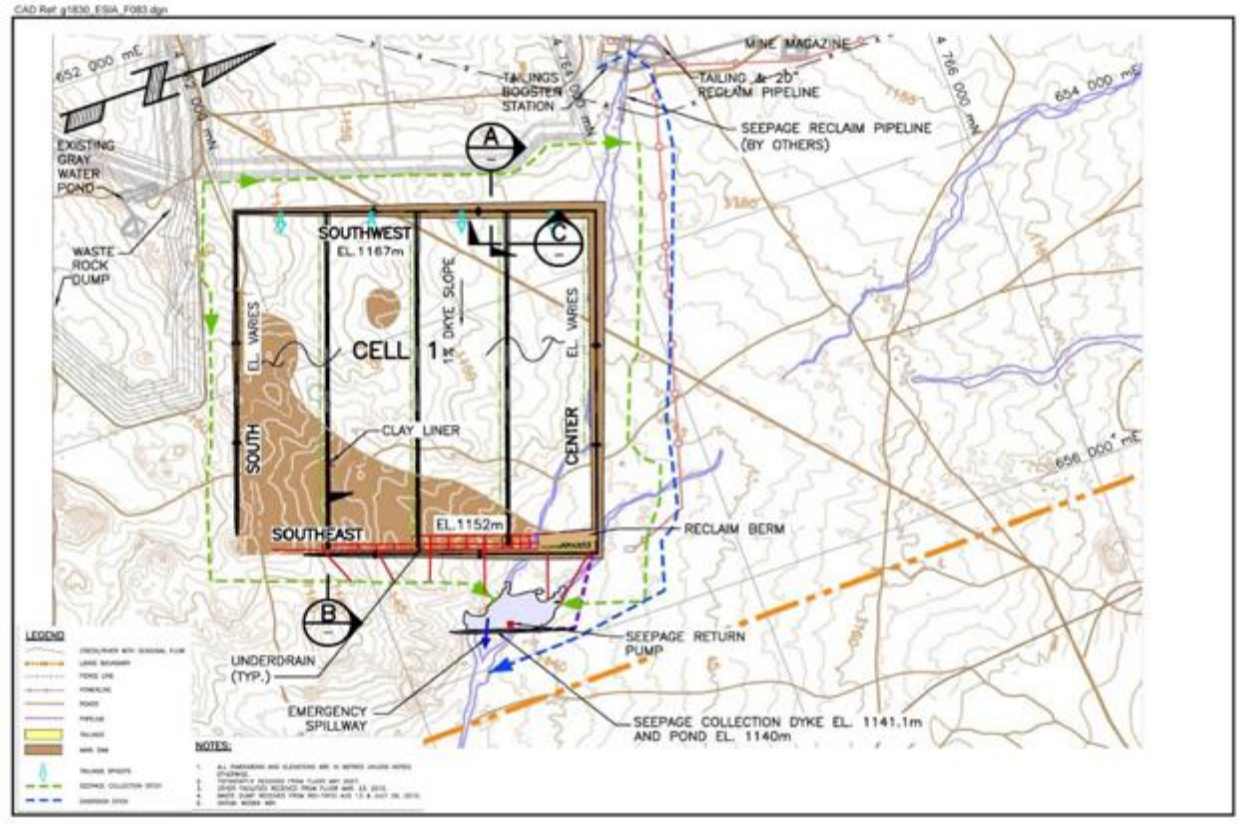
4.2.1 TSF Cell # 1 Design and Cell # 2 Transition

TSF Cell # 1 foundation to the north and west overlies thick natural clays; however an engineered 1 m thick compacted clay liner was constructed in the southeast corner of Cell #1 at a location with little to no naturally-occurring clays. Figure 4–13 shows the extent of the compacted clay liner that was engineered prior to usage of Cell#1.

The northeast corner of Cell #1 is a topographic low where the ephemeral Dugat, and tributary Ust bag mod and Khaliv ephemeral river systems, historically crossed the TSF footprint. Episodic rain events causing surface flow currently report to an engineered trench that conveyed non-contact runoff water around the TSF. Flows collected in this trench are now discharged back to the Dugat/Khaliv River alluvial system just down gradient of the TSF. This Surface Water Diversion channel is shown as a dashed blue line in Figure 4-20, including the discharge location just within the Mine License Area.

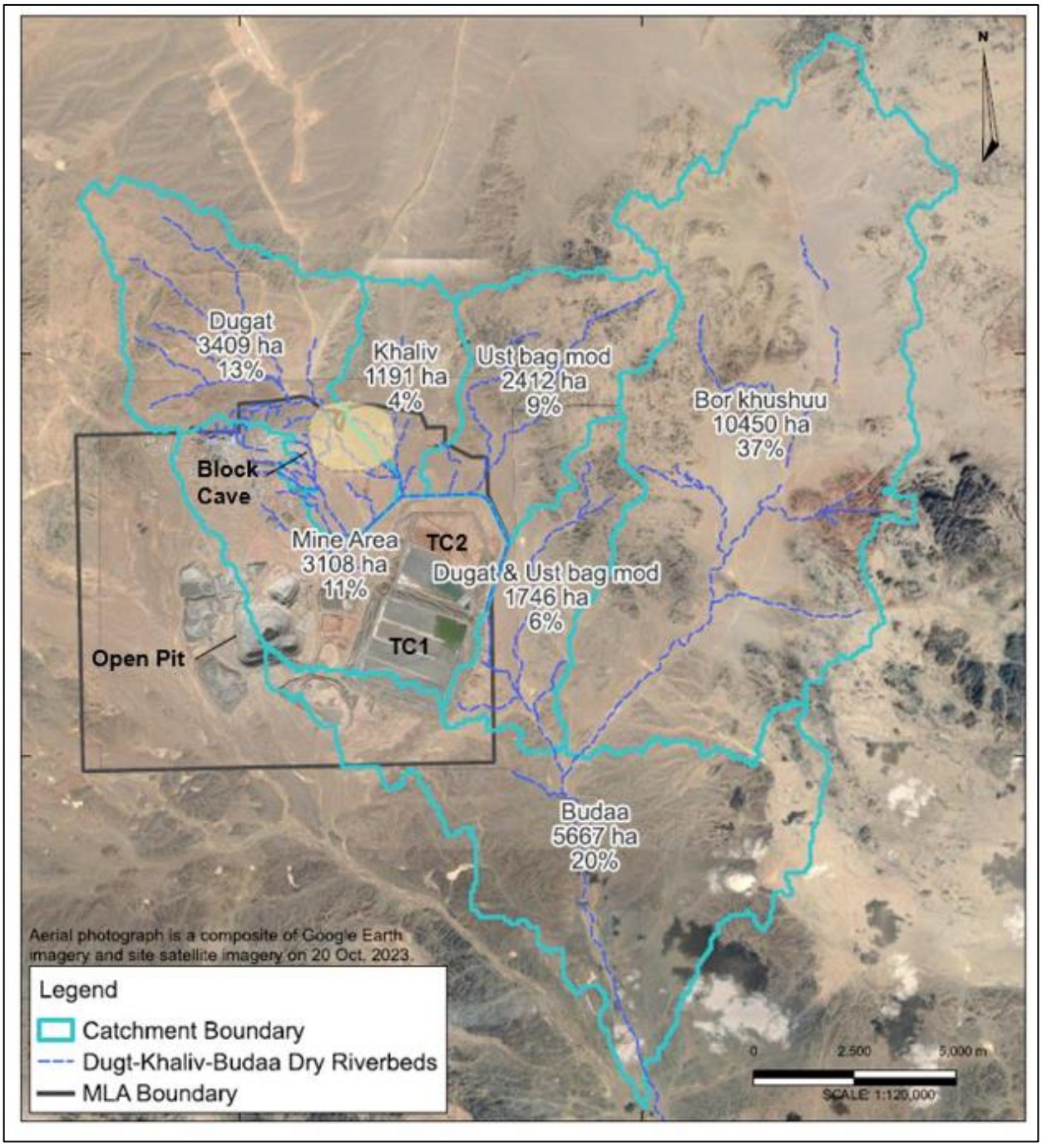
Figure 4-20 Area of Engineered Compacted Clay Liner in Southeast Co

rner of Cell #1



The Khaliv drainage eventually joins the Bor Khoshuu riverbed for a short distance before joining the Budaa River and ultimately the Undai River. A map of the watersheds in the region of the OT Mine License Area is shown as Figure 4-21. In summary the Budaa River system, which is ephemeral, consists of seven subcatchments with three upgradient of the site (Dugat, Khaliv and Ust bag mod). In sum total the Budaa catchment consists of almost 28,000 hectares.

Figure 4-21 Watersheds of the Budaa Ephemeral River System



An aerial photograph of the current TSF Cell#2 is shown as Figure 4-22. The existing Dugat diversion is shown around the perimeter of the cell, with the current reclaim pond in the southeast of Cell#2. As described previously a new diversion will soon be constructed from north of the MLA around the future underground subsidence zone and then to the north and east of combined TSF Cells #1 and #2. The intention is to have the new Surface Water Diversion discharge to the Dugat River some distance downgradient of the MLA, clearly separating diverted Dugat River flows from any potential seepage waters emanating from the TSF. This revised diversion design discharges surface flow to the east of the site, as shown in green on the figure. The revised diversion design must be reviewed and approved by Lenders, as part of the proposed Mine Zone Expansion previously discussed.

Figure 4-22 Aerial Photograph of TSF Cell#2 with Reclaim Pond to the Southeast

A view from the top of TSF Cell#1, looking east, is shown in Figure 4–23. In the 2023 photograph the cut-off dam is shown with the Surface Water Diversion shown just a short distance to the east. The Surface Water Diversion discharges into the alluvial channel of the Khaliv alluvial sediments in the vicinity of OTMB 16–79. From the picture one can also see the migrating pathway of the Khaliv alluvial system, including two

prominent elm trees. The Khaliv system joins the Budaa alluvial system beyond this point. Not yet present is the French drain system downgradient of the cut-off dam, installed in 2024.

Figure 4-23 Aerial View of Cut-off Dam East of TSF Cell#1

Another photograph is shown in Figure 4–24, this time looking westward from the Dugat/Khaliv alluvial channel in the vicinity of OTMB 16 – 79. In the photograph the East Toe Collection Dyke (i.e., the “cut-off dam”) is visible to the west, with the approximately 70-m TSF Cell # 1 eastern wall in the background.

Figure 4-24 View West of TSF Cell # 1 from the Dugat/Khaliv channel just within Mine License Area

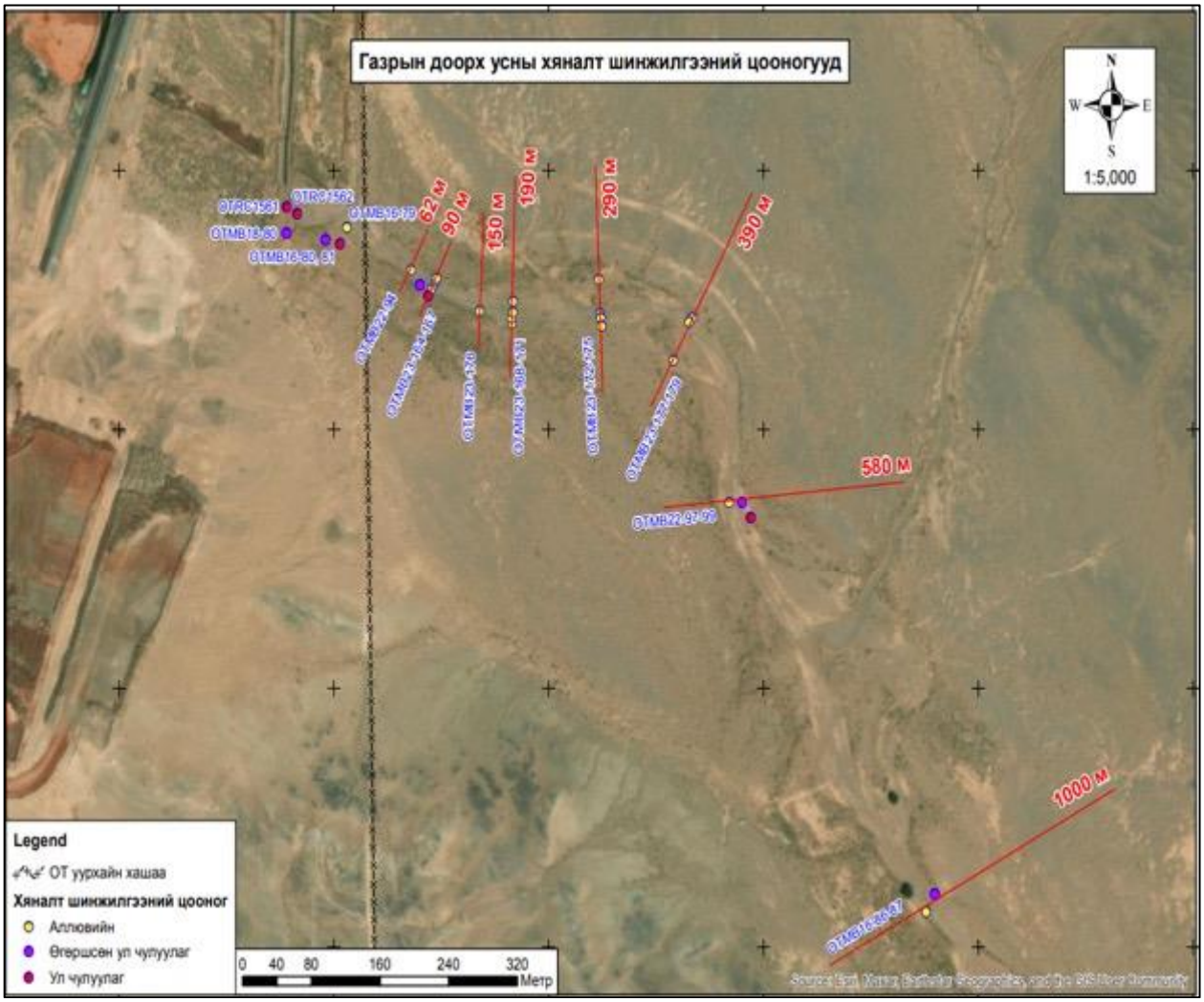
4.2.2 TSF Monitoring Network

There are a total of 71 water monitoring points associated with the TSF. An additional 16 monitoring points were installed in 2023 in alluvial sediments of the Dugat ephemeral channel, and other monitoring points installed in weathered bedrock, cretaceous clays, and other units downgradient of the TSF. These monitoring points are further detailed in Table 4-1. The nearest environmental receptor downgradient of the TSF, and within the Budaa River channel, is the Baishint herder well, located approximately 7 km downgradient of the MLA. Beyond this the Budaa River joins the Undai River system in the vicinity of the Buural spring. Figure 4-25 shows the location of key additional monitoring points installed in Q4 2023 just downgradient of the MLA, and transecting the Dugat alluvial channel.

Table 4-1 Water Monitoring Network at TSF as of Q3 2024

Monitoring Point	Number of Monitoring Points	Specifics	Water Levels	Field Water Quality	Laboratory Water Quality
Monitoring bores in weathered bedrock	22	Onsite (11)	Fortnightly – monthly	Fortnightly – monthly	Monthly
		Offsite downgradient within 0.5 km (3)			
		Offsite downgradient further (3)			
		Offsite Around TSF Cell #2 (5)			
Monitoring bores in alluvium	20	Downgradient of TSF Cell#1 since 2016 at OTMB16-79 (1)	Weekly – monthly	Fortnightly – monthly	Monthly
		Downgradient offsite since 2016 (1)			
		Downgradient onsite since 2023 (2)			
		Downgradient offsite since (16)			
Monitoring bores in bedrock	11	Onsite (9)	Fortnightly – quarterly	Fortnightly – monthly	Monthly - Quarterly
		Offsite (2)			
Monitoring bores in Cretaceous	10	Onsite (6)	Monthly - quarterly	Monthly - quarterly	Monthly - Quarterly
		Offsite around Cell #2 (4)			
TSF Seepages	3	VN#4 and #9 (2)	N/A	Monthly	Monthly
		Seepage Combined (1)			
Tailings Reclaim (Barge Pond)	1	N/A	Monthly	Quarterly	Quarterly
Herder's wells	3	Upstream Dugt, downgradient Baishint, far downgradient Khar kadna hudag	Fortnightly – monthly	Fortnightly – monthly	Monthly
French Drain Pump	1	N/A	N/A	N/A	N/A
Total	**71**				

Figure 4-25 Monitoring Points in Vicinity of TSF Including 2023 Newly Installed Alluvial Locations

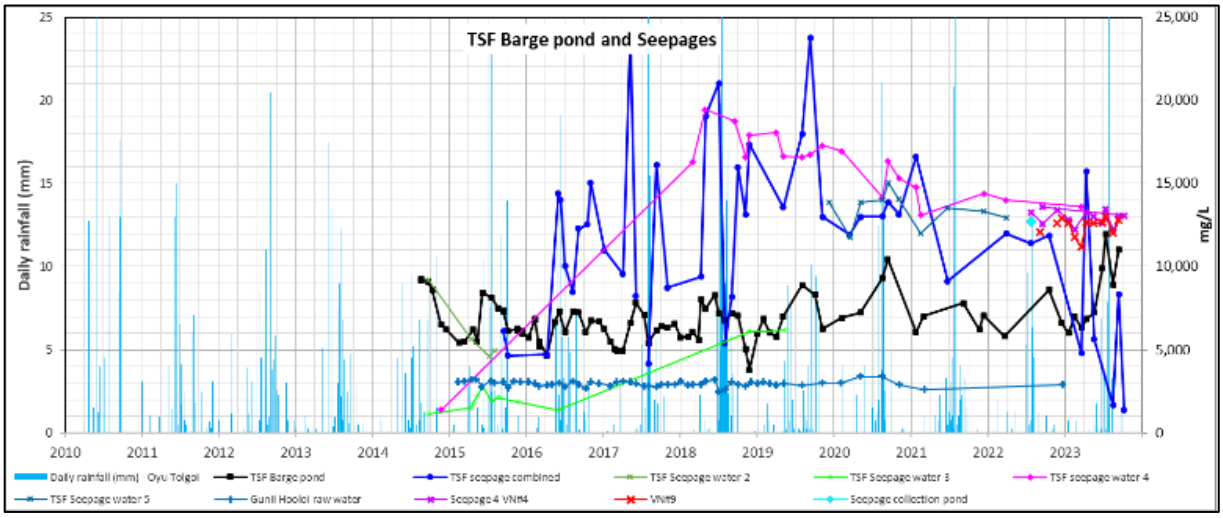


4.2.3 TSF Barge Pond and Seepage Water Quality

TSF barge pond water quality parameters exceed Australian New Zealand Environment and Conservation Council (ANZECC) Guidelines for Livestock Water for total dissolved solids, sulfate, fluoride, molybdenum, boron and selenium. As a result OT constructed a fence around the seepage collection area as domestic livestock and native fauna had in the past accessed this available water source. The fencing, which is 2 m high, covers 100,000 m^2 of area.

Figure 4-26 below shows barge pond water quality at TSF Cell #1 for total dissolved solid (TDS), as reflected in monitoring results from 2014 – current. Over that time period barge pond water quality varied from a low of approximately 3,800 mg/L to a high of 10,500 mg/L, with values typically falling in the 6,000 – 8,000 mg/L range (shown in black). However measured TDS from 2023 at some test pit locations surrounding the TSF often show much higher TDS values of up to 25,000 mg/L, and often in the 15,000 mg/L range.

Figure 4-26 Barge Pond TDS Concentrations (Black) and Combined TDS in Seepages (Blue)

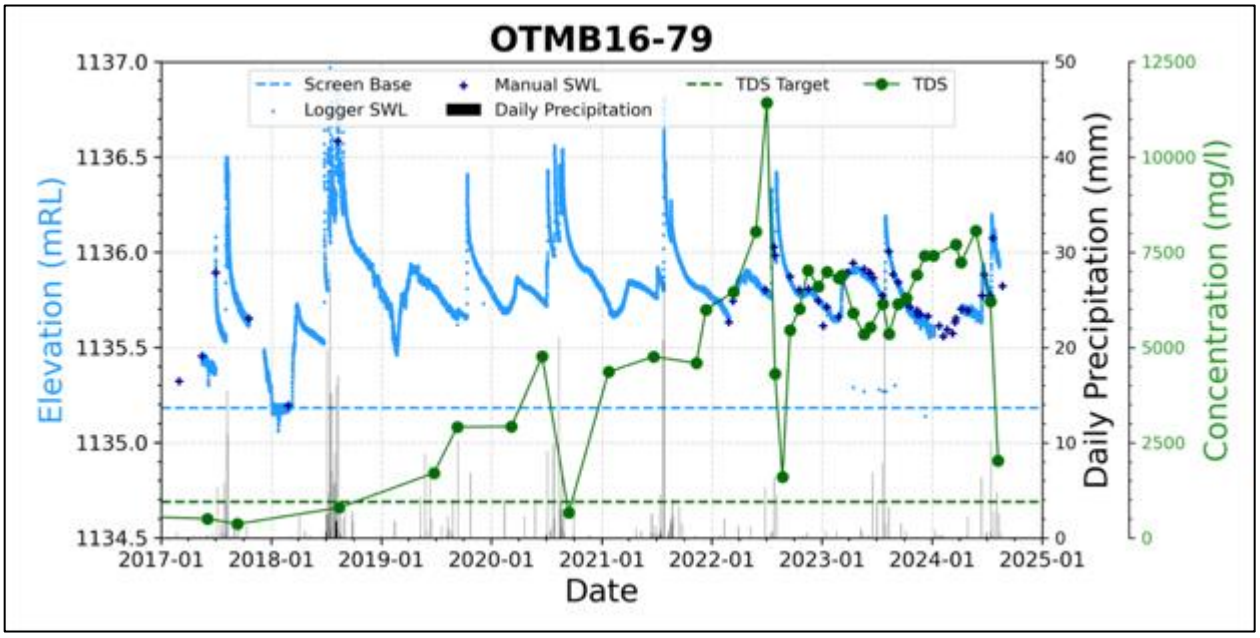


With respect to other contaminants, concentration of sulfates (SO_4) in the TSF Barge Pond are up to 4,000 mg/L but are typically in the 2,000 mg/L range. Strontium (Sr) ranges up to 15 mg/L in barge pond water quality, typically averaging around 9 mg/L. Both SO_4 and Sr levels have been recorded in downgradient monitoring bores above background concentrations and action response levels, as discussed in the following subsection.

4.2.4 Water Quality Downgradient of TSF Cell # 1

TDS concentrations first increased since 2018 at monitoring bore OTMB 16–79, when the seepage collection pond/sump was first moved to the north, and then have since varied. The location of this monitoring point is shown on Figure 4-18. Locations of monitoring points installed in Q3 2023 and further downgradient of TSF Cell # 1 are also shown on Figure 4-18. Original baseline values at the OTMB 16–79 location were approximately 550 mg/L in 2018, then rising to 11,424 mg/L by Q3 2022. Values quickly declined following a precipitation also in Q3 2022. TDS values have since fluctuated between 5,000 mg/L to 8,000 mg/L. However rainfall events in 2024 have led to a recent decrease of TDS to around 2,000 mg/L (Figure 4-27). This rapid lowering of TDS concentrations likely reflects episodic dilution from periodic flood events.

Figure 4-27 TDS Levels from 2017 – 2024 at OTMB 16-79



The most water quality monitoring east and downgradient of the TSF, in alluvial sediments, is provided in the following tables. Table 4-2 presents data from just within the MLA to outside of the fence line at 60m. Table 4-3 then presents available data from 100 – 500 m downgradient of the site. Lastly Table 4-4 provides data for alluvial monitoring points 1.5 km and further down gradient, including the nearest environmental receptor (the Baishint herder well). The tables demonstrates TDS, SO_4 and Sr values at OTMB 16-79 above Level 3 response levels in the developed Trigger Action Response Plan (TARP). Elevated values are also present just 60 m to the east of the Mine License Area at OTMB 22 – 94. Additionally installed monitoring points in alluvium 100 m to the east of the MLA reflect elevated TDS, SO_4 and Sr (OTMB 23 – 164, 166, and 167). There are also slightly elevated TDS levels at new monitoring points 160 m and 300 m to the east (OTMB 23-176 and OTMB 23-174, respectively) but not elevated SO_4 or Sr concentrations. There are no discernable impacts to groundwater quality at monitoring points 400 m downgradient (OTMB 23-178), 500 m downgradient (GHMB 22-97), 1 km downgradient (OTMB 16-86), or at the Baishint herder well which is 7 km gradient from the MLA.

Table 4-2 Water Quality Data Within and Outside of MLA through Q4 2023

TARP trigger ranges		Type	Test type	pH	TDS (mg/L	SO_4^{2-} (mg/L)	Sr^{2+} (mg/L)
	Normal State	Normal	-	>6.8	<800	<400	<1.6
		Level 1	-	6.6-6.8	800-900	400-450	1.6-1.8
	Reportable incident	Level 2	-	6.5-6.6	900-950	450-475	1.8-1.9
	Reportable Incident	Level 3	-	<6.5	>950	>475	>1.9
Location	Sample point	Sample date		Downstream groundwater monitoring points			
within MLA	OTMB16-79	8/23/22	Lab	9.55	1600	504	0.83
		9/17/22	Lab	8.22	5460	1436	5.24
		10/18/22	Lab	6.68	6012	1081	5.65
		11/15/22	Lab	7.50	7028	1878	5.18
		12/20/22	Lab	6.63	6600	1773	4.93
		1/17/23	Lab	8.60	6986	1608	4.33
		2/25/23	Lab	7.54	6821	1626	5.18
		3/8/23	Lab	7.46	6896	1667	5.32
		4/14/23	Lab	7.66	5901	1139	2.97
		5/20/23	Lab	7.47	5350	1089	2.71
		7/21/23	Lab	7.59	6140	1043	3.95
		8/11/23	Lab	7.69	5360	1052	3.38
		9/10/23	Lab	8.13	6140	1225	4.06
		10/8/23	Lab	7.65	6296	1255	3.98
		11/12/23	Lab	8.12	6910	1318	4.95
		12/8/23	Lab	7.60	7408	1474	5.35
		1/5/24	Lab	7.53	7410	1326	5.82
		3/20/24	Lab	7.91	7700	1528	7.28
		4/6/24	Lab	7.89	7230	1389	5.53
		5/25/24	Lab	7.94	8060	1466	7.53
		7/12/24	Lab	7.35	6208	1619	4.22
		8/7/24	Lab	8.44	2030	625	0.65
~60 m downgradient of MLA	OTMB22-94	10/10/23	Lab	7.89	3972	1041	2.90
		10/10/23	Lab	7.98	4522	1438	3.02
		11/24/23	Field	8.17	3532	not enough water for sampling	
		12/8/23	Field	8.09	2111	not enough water for sampling	
		1/1/24	Field(CTD)			Frozen	
		2/21/24	Field(CTD)			Frozen	
		3/20/24	Field(CTD)		1152	not enough water for sampling	
		4/22/24	Field	8.24	3876		
		5/15/24	Field	8.15	3558		
		6/21/24	Field(CTD)	7.91	1179		
		7/19/24	Field	8.18	360	broken due to flooding	
		8/1/24	Field(CTD)		920	not enough water for sampling	

Table 4-3 Water Quality Data in Alluvial Sediments 100 m – 500 m Downgradient of MLA

TARP trigger ranges		Type	Test type	pH	TDS (mg/L	SO_4^{2-} (mg/L)	Sr^{2+} (mg/L)
	Normal State	Normal		>6.8	<800	<400	<1.6
		Level 1		6.6-6.8	800-900	400-450	1.6-1.8
	Reportable incident	Level 2		6.5-6.6	900-950	450-475	1.8-1.9
	Reportable Incident	Level 3		<6.5	>950	>475	>1.9
Location	Sample point	Sample date		Downstream groundwater monitoring points			
100 m from MLA	OTMB23-164	10/29/23	Lab	8.04	1340	350	1.24
		11/26/23	Field	8.87	1130		
		12/10/23	Field	8.60	1330		
		1/30/24	Field	7.18	1870		
		4/6/24	Lab	8.09	1322	316	1.33
		9/16/24	Field(CTD)		164		
	OTMB23-165			Dry, no water			
	OTMB23-166	10/29/23	Lab	7.93	2212	533	1.87
		11/26/23	Field	8.41	2050		
		12/10/23	Field	8.29	2200	Frozen	
		6/21/24	Field	7.60	1350		
		9/16/24	Field	8.13	320		
	OTMB23-167	10/29/23	Lab	7.61	2190	657	1.65
		11/26/23	Field	8.49	1840	not enough water for sampling	
		12/10/23	Field	8.25	2000		
		1/30/24	Field	7.62	1850		
		2/5/24	Field	7.12	1630		
		3/16/24	Field	7.57	1800		
		8/22/14	Field(CTD)		167		
160 m from MLA	OTMB23-176	10/29/23	Lab	8.46	1104	324	1.01
		4/6/24	Lab	8.35	960	89	0.52
		6/21/24	Field	7.96	700		
200 m from MLA	OTMB23-168			Dry, no water			
	OTMB123-169			Dry, no water			
300 m from MLA	OTMB23-172			Dry, no water			
	OTMB23-173			Dry, no water			
	OTMB23-174	10/28/23	Lab	10.80	1206	269	1.24
		12/10/23	Field	11.50	1110	moist, not enough water for sampling	
		6/21/24	Field	7.47	1310		
		7/11/24	Field	7.79	1220		
		9/16/24	Field		434		
400 m from MLA	OTMB23-177			Dry, no water			
	OTMB23-178	10/28/23	Lab	8.69	692	187	0.51
	OTMB23-179	7/11/24	Field	7.70	580		
500 m from MLA	OTMB22-97	6/21/24	Field	7.74	780	moist, not enough water for sampling	
		7/19/24	Field	8.27	530		
		9/16/24	Field	8.62	310		

Table 4-4 Water Quality Data in Alluvial Sediments 1.5 km and Further Downgradient of MLA

TARP trigger ranges		Type	Test type	pH	TDS (mg/L	SO_4^{2-} (mg/L)	Sr^{2+} (mg/L)
	Normal State	Normal		>6.8	<800	<400	<1.6
		Level 1		6.6-6.8	800-900	400-450	1.6-1.8
	Reportable incident	Level 2		6.5-6.6	900-950	450-475	1.8-1.9
	Reportable Incident	Level 3		<6.5	>950	>475	>1.9
Location	Sample point	Sample date		Downstream groundwater monitoring points			
1.5 km from MLA	OTMB16-86	1/18/23	Lab	8.60	580	134	0.32
		3/24/23	Lab	9.73	468	133	0.30
		4/15/23	Lab	7.96	708	119	0.31
		5/18/23	Lab	8.13	535	117	0.27
		7/8/23	Lab	7.91	626	94	0.22
		8/27/23	Lab	8.27	460	118	0.27
		9/15/23	Lab	8.26	522	126	0.24
		10/10/23	Lab	8.32	464	95	0.20
		12/11/23	Lab	7.98	516	140	0.18
		1/14/24	Lab	8.22	502	121	0.18
		10/10/23	Lab	8.31	481	112	0.24
		11/10/23	Lab	8.42	722	238	0.20
		12/11/23	Lab	7.98	516	140	0.18
		1/14/24	Lab	8.22	502	121	0.18
		4/20/24	Lab	8.47	500	117	0.19
		5/14/24	Lab	7.88	550	189	0.16
		8/7/24	Lab	7.81	446	129	0.24
~7km from MLA	Baishint (Herder's well)	8/22/22	Lab	8.26	350	41	0.30
		9/11/22	Lab	7.96	482	97	0.37
		10/17/22	Lab	8.08	512	100	0.41
		11/19/22	Lab	8.11	584	127	0.48
		2/18/23	Lab	7.79	602	117	0.57
		3/10/23	Lab	7.80	506	104	0.46
		4/15/23	Lab	8.18	874	121	0.47
		5/19/23	Lab	7.80	540	104	0.42
		6/6/23	Lab	8.04	540	114	0.42
		7/27/23	Lab	7.82	550	106	0.43
		8/10/23	Lab	8.03	604	116	0.51
		9/10/23	Lab	8.62	534	112	0.37
		10/7/23	Lab	8.13	524	99	0.37
		11/10/23	Lab	8.62	676	189	0.43
		12/8/23	Lab	8.27	580	143	0.42
		4/6/24	Lab	8.38	500	117	0.43
		5/11/24	Lab	8.10	578	143	0.46
		7/11/24	Lab	8.40	560	159	0.38
		8/7/24	Lab	7.69	344	91	0.20
Buural and Burkhant	OTMB11-33	6/7/23	Lab	8.15	698	208	0.51
		12/9/23	Lab	7.98	712	193	0.38

As mentioned previously recent study indicates a bedrock exposure in the Khaliv channel downgradient of the site, creating discontinuity in the alluvial system. The location of this bedrock exposure, approximately 300 m downgradient of the MLA boundary, is shown on Figure 4-28. A photograph of the bedrock exposure in the field is shown as Figure 4-29.

Figure 4-28 Location of Bedrock Outcrop Downgradient of Site Below Key Monitoring Points

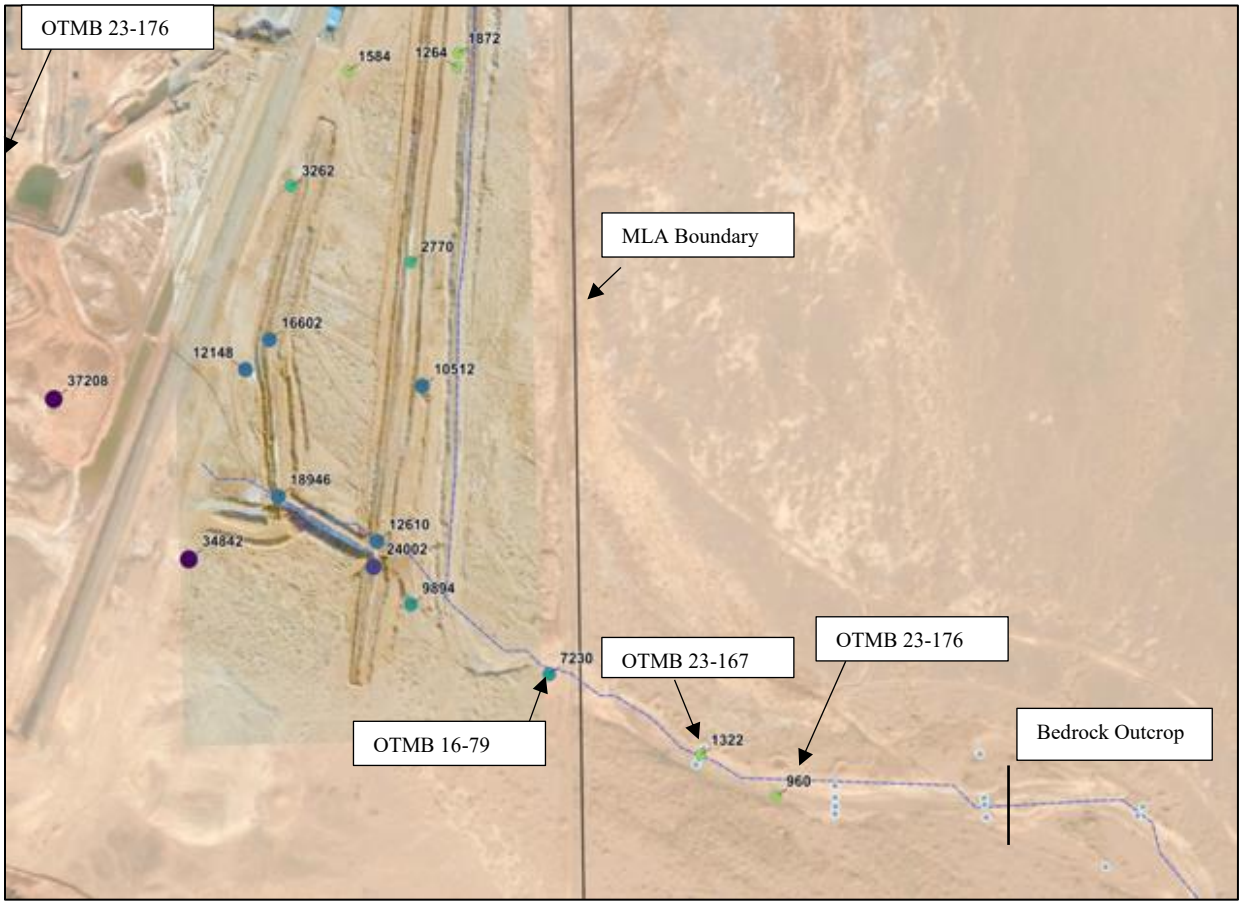
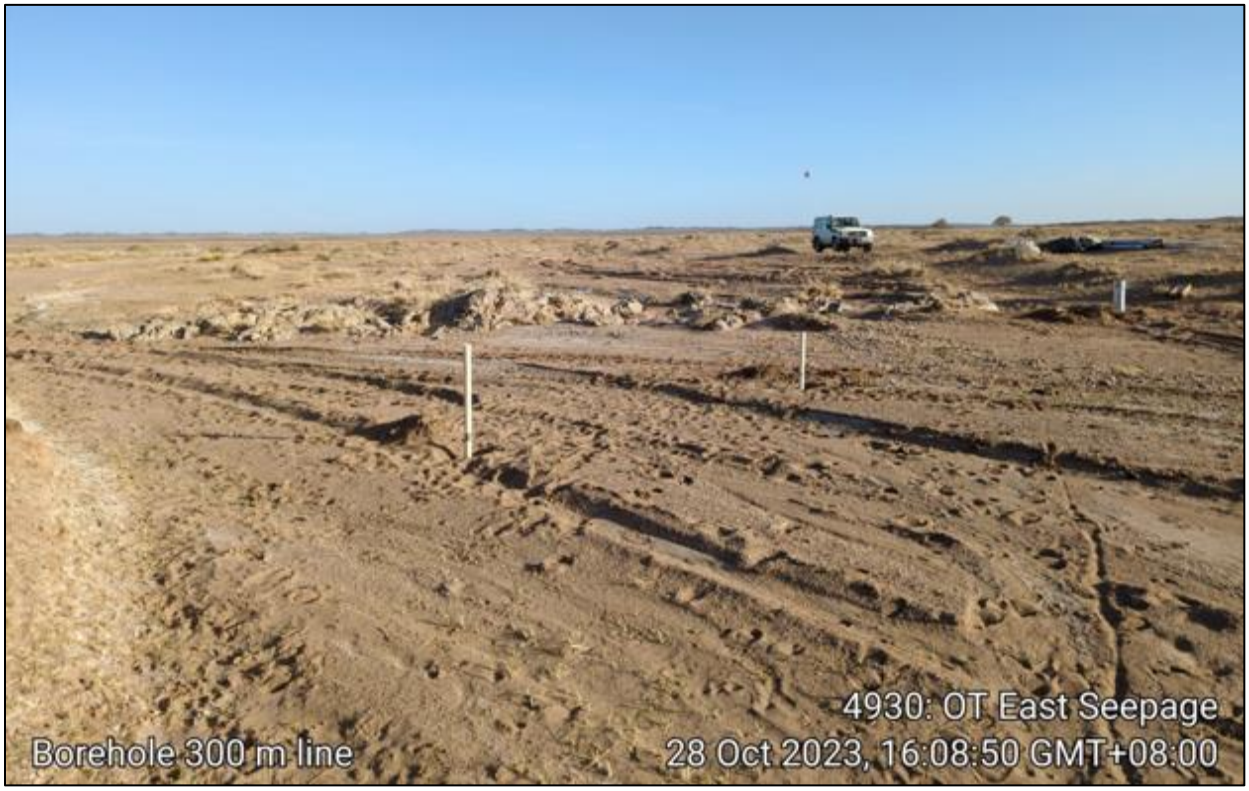


Figure 4-29 Location of Bedrock Outcrop Downgradient of Site Below Key Monitoring Points



4.2.5 2023 Detailed Water Review

In prior IESC Audit Reports it was recommended that a Detailed Water Review, as described in the Water Resources Management Plan Section 8.2, be undertaken as it was unclear if implemented mitigations were adequate to protect the down gradient Dugat/Khaliv alluvial drainage from infiltration of seepage water. Water Resources Management Plan commitment WRM – 02 of the OT ESIA references a commitment to preserving groundwater quality in the mine area of influence. This commitment in turn references Section 6.3 of the Water Monitoring Plan, which sets out analysis protocol and trigger levels for remedial action.

The Detailed Water Review took place in Q3 2023 to coincide with the IESC/Lender visit to the OT site. At the completion of the three-day discussion, points of agreement were established between meeting participants, including those from OT, Rio Tinto, the Lenders and the IESC.

The following were conclusions established during the Detailed Water Review related to the monitoring network:

- Total Dissolved Solids (TDS) concentrations in TSF barge pond ranged from a low of 5,060 mg/L to 11,940 mgL, with most results in a range of approximately 6,000 to 8,000 mg/L;
- Investigations to date have used elevated TDS, derived from electrical conductivity (EC) readings, as a general indicator, or “signature”, of seepage. This general indicator does not allow discernment between seepage water and other naturally occurring high-salinity waters present in the immediate area from the leaching of Cretaceous-era clays;

- The investigation to date of seepage downgradient of TSF Cell #1 has recorded TDS levels up to 21,557 mg/L. These values were detected in standpipes installed in clayey sediment downgradient of the TSF and adjacent to the Dugat alluvial channel. Such elevated levels cannot possibly be solely attributed to uncontrolled seepage from the TSF;
- TDS values significantly above 8,000 mg/L are likely to be attributed to the geochemistry of the units of Cretaceous age. Therefore monitoring points completed in these units should be noted, or even disregarded, when assessing potential escape of seepage into the environment;
- The shallow geology in the area downgradient of the TSF should be mapped in detail to understand the influence of geology on the geochemistry of the system;
- The sensitive environmental receptor from TSF seepage is groundwater contained within shallow alluvial sediments including that of the Dugat/Khaliv ephemeral river channel. These are the units accessed by herder wells and wildlife. Therefore any investigation of seepage from the TSF should focus on this hydrogeological unit;
- TSF seepage has migrated into the alluvial sediments of the Dugat/Khaliv ephemeral river channel, as evidenced by elevated TDS concentrations, and beyond all barriers installed to contain such migration. This seepage has been detected in the shallow alluvium directly beyond the MLA in an overall increasing trend;
- The full extent of the impact of this elevated TDS downgradient of the site is not known. There is no indication of seepage impacting the shallow groundwater at OTMB 16-86 (approximately 1km downgradient) or the Baishint herder well, approximately 7km downgradient from the site

The Detailed Water review also highlighted the need for more alluvial groundwater monitoring bores downgradient of the MLA as there were no such monitoring locations between OTMB22-94 (~60 m downgradient of the MLA) and OTMB22-97 (~500 m downgradient). This was undertaken in Q4 of 2023 with the additional monitoring points installed.

The following were conclusions established during the Detailed Water Review related to evaluation of the TSF monitoring data available to date:

- OT's working hypothesis for seepage migration through the East Toe Collection Dyke (the Dyke) is through a weakness related to the pipeline installed connecting the old seepage collection pond (the membrane pond) to the adjacent pump house. However a more diffuse pathway from TSF Cell#1 through the Dyke cannot be ruled out
- It is now recognized that some of the upper horizons of the Cretaceous clays on site contain fissures which could provide vertical or sub-vertical fluid migration pathways. For this reason the TSF Cell # 2 design has been modified to ensure removal of any clays which contains such fissures prior to construction of the installation of the embankment for this cell (see discussion below on changes to TSF Cell#2 design)
- As mentioned above the sensitive receptor in terms of seepage is any potential groundwater contained in shallow alluvial sediments. This has been recognized since the ESIA and work on the Undai River Diversion. It is important to preserve the quantity and quality of this resource;
- The Dugat/Khaliv Surface Water Diversion has been constructed to transfer storm water from upgradient drainages around TSF Cells #1 and #2, back into the Dugat/Khaliv ephemeral channel immediately downgradient of the TSF. It is noted that Dugat/Khaliv Surface Water Diversion is

currently being redesigned to a location further upgradient of the TSF to accommodate subsidence related to underground mine development.

4.2.6 Remedial Action Plan Implementation

During the Q3 2023 Detailed Water Review the path forward was discussed, dividing these efforts into both short-term and long-term objectives. OT then retained the expertise of third-party consultants (Piteau Associates and Seureca Veolia) to help develop these efforts. OT also developed with Lenders a Remedial Action Plan (RAP) that specifies objectives and corresponding tasks to meet these objectives. Periodic updates on implementation of the RAP are provided to the Lenders. Table 4-5 provides a summary of implemented RAP items at the end of year 2023. Table 4-6 then provides a summary RAP items completed or still in progress as of Q3 2024.

Table 4-5 Implemented Remedial Action Plan Items in 2023

No	Issue	Action	Start Date	Completed Actions
1	Define the depth and extent of the alluvial sediments downgradient of the Dike and north TSF Cell#2	Investigation - Undertake surface geophysical surface between TSF Cell#1 and the Baishint herder well	Q4 2023	Geophysical survey completed in Q4 2023. Results included in the geological model update to help identify weathered bedrock contacts. The survey covered over 26 km of longitudinal and transverse geophysical lines. Results presented in the document: *Shallow Frequency Domain Electromagnetic and Electrical Resistivity Imagin Surveys at TSF Areas of Oyu Tolgoi Copper Mine,* 2023.
2	Conduct a site investigation within the area of the Dike to define short term remediation system	Investigation – Test pits, monitoring bore construction, clay salinity measurement and water quality sampling within area of the Dike	Q4 2023	Site investigation completed in Q4 2023. A total of 49 test pits excavated with field salinity tests. Data returned from these test pits, along with other monitoring data, were used to guide development of a French drain seepage intercept system. Results presented in the document: *Oyu Tolgoi Trench Design,* 2023.
3	Confirm the presence, or absence, of any groundwater contained in the Dugat/Khaliv alluvial system to identify any pockets of discontinuous flow and to define the extent of the seepage migration downgradient from the MLA	Investigation – Install transects of shallow monitoring bores across the Dugat/Khaliv alluvium at locations 100m, 200, 300m and 400m downgradient of the MLA	Q4 2023	Additional monitoring bores installed in Q4 2023, both within and outside MLA. Four transects were completed downgradient of the TSF in the Dugat/Khaliv channel downgradient of the TSF. The installed monitoring boreholes are now included in the OT water monitoring program.
4	Implement short term solution to mitigate risk of further migration of elevated TDS groundwater	Remedial – Construction of a passive seepage collection trench system (i.e., a “French Drain”) downgradient of the Dike, but upgradient of the Dugt/Khaliv Surface Water Diversion Channel	Q4 2023	French drain installed in Q4 2023, consisting of a total of 805 m of excavation and emplacement of perforated drainage pipe. This drainage pipe is located at the top of the weathered bedrock interface and graded to the south to a collection sump. The drainage network was left uncovered for summer 2024 to assess performance, and will be backfilled by the end of 2024.

No	Issue	Action	Start Date	Completed Actions
5	French Drain system effectiveness	Verification – Install an array of alluvial monitoring points downgradient of the Dike, and upgradient of the Dugat/Khaliv Surface Water Diversion	Q4 2023	Completed in Q4 2023. Flow and field monitoring data collected on a daily basis. Additional alluvial monitoring points installed in the trench.
6	Community requested to be involved in Government of Mongolia commissioning process for Cell#2	Consultation- Involve community representation as an observer for state commissioning process for Cell#2	Q3 2023	OT communicated the commissioning approach at the Tripartite Council (TPC) meeting in Q4 2023. Following this an environmental officer from Khanbogd soum was a participant in the formal commissioning of TSF Cell#2 in later Q4 2023.

Table 4-6 Remedial Action Plan Items Completed or In Progres for Year 2024

No	Issue	Action	Objective	Start date	Planned end date	Responsible OT Department	Q3 2024 Update
Tailings Design and Operation							
1	Cretaceous clays prevalent downgradient of the Dike may be leaching dissolved solids leading to observed elevated TDS values of over 35,000 mg/L	Investigation – Identify and define a reliable geochemical and conservative "signature" for seepage	Define a reliable geochemical and conservative "signature" for seepage besides TDS.	Q3 2023	Q2 2024	Tailings and Hydrogeology and Environment	**In progress but delayed.** 14 clay samples were collected from trenches east of TSF and delivered to the University of Queensland to understand salinity release mechanisms under different hydrogeological conditions. Early indications are electrical conductivity levels are not very high, suggesting this is not a root cause of high TDS in monitoring bores. OT and its external consultants have theorized that high TDS in the Seepage Collection Area is predominantly caused by naturally occurring high-salinity groundwaters in weathered bedrock, which has been forced to the surface as a result of pressure loading from the TSF Cell#1 dam walls and deposition. These waters could also be undergoing evaporative dissolution **As the IESC has indicated in prior Audit Reports, the use of TDS is a poor absolute indicator of seepage escaping of TSF Cell#1 past containment systems. A conservative "signature" has not yet been established to identify actual seepage present in downgradient monitoring bores. This makes it difficult to distinguish if elevated TDS is caused by seepage, migration of naturally-occurring groundwaters with high TDS in weathered bedrock, evapoconcentration phenomena, or some combination of these factors.**

No	Issue	Action	Objective	Start date	Planned end date	Responsible OT Department	Q3 2024 Update
2	Removal of the potential seepage pathway along the pipeline between the membrane sump and the pumphouse	Remedial – Pumphouse relocation work program - remove the approximate 0.1m diameter pipe connecting the membrane sump to the pumphouse and backfill alignment with compacted clay after cleaning high permeability material under supervision of experienced construction supervisor and other technical personnel.	Removal of the pipeline connecting the membrane sump to the pumphouse	Q1 2024	Q1 2024	Tailings and Hydrogeology	**Completed.** Removal of the pipeline between the old seepage membrane pond and the pump house was completed in Q1 of 2024 with removal of 8 m of the pipeline from the old sump (pond) leading to the old pumphouse. The old membrane pond was backfilled with compacted clay in Q2 of 2024, removing the remaining pipeline as a migration pathway for contained seepage.

No	Issue	Action	Objective	Start date	Planned end date	Responsible OT Department	Q3 2024 Update
3	Removal of the membrane sump located immediately upstream of the Dike and adjacent to the pumphouse as potential source of seepage	Remedial – Pumphouse relocation work program - infill the membrane sump with compacted clayey material to remove this feature as a topographic low in the seepage collection area. Before backfilling the area, the soil geology will be inspected and low permeability materials will be removed for compacted clay backfilling.	Completion of infill of the membrane sump with compacted clayey material	Q2 2024	Q2 2024	Tailings and Hydrogeology	**Completed.** Approximately 30k tons of clay material was used to fill the old membrane pond during the Q2 2024 summer construction season. An extension to the cutoff dyke has been constructed in the location and also backfilled with clay.

4	Lack of holistic understanding of the hydrogeological regime and confidence in seepage mechanism/pathway	Investigation – Installation of alluvial/bedrock monitoring bore pairs between the Dike and the Dugat/Khaliv Surface Water Diversion to evaluate groundwater gradients and sulphate levels or other possible signatures of seepage upgradient and downgradient of the Dike	Identification of the seepage migration pathway	Q4 2023	Q1 2024	Tailings and Hydrogeology and Environment	**In progress but delayed.** An investigation is in progress by a third party consultants (Piteau). Key preliminary findings include: • Alluvial sediments downgradient of the MLA in the Dugat/Khaliv alluvial are thin and disconnected, with no consistent groundwater flow. There are bedrock exposures in the system downgradient of the site that prohibit a continuous flow system. There is limited lateral groundwater flow under natural conditions • At some locations weather bedrock is hydraulically connected to alluvial sands • **Close to the TSF the groundwater mounding that occurs beneath and surrounding TSF Cell#1 and #2 causes localized flow away from the facilities** • **Some "seepages" around the TSF are due to this mounding of natural groundwater rather than actual seepage through the TSF walls.** • **Waters accumulated in the seepage collection pond is predominantly naturally occurring groundwater that has been forced to the surface** • **High TDS groundwater easy of the Dyke are mostly these naturally occurring groundwaters, although there may be a component of seepage from the TSF bypassing the Dyke** • **The only way for TSF seepage to currently enter the environment is along weathered bedrock surfaces under the Dyke. However any such bypass is collected by the French Drain system which is returning a flow of 0.3 L/s to the seepage pond.**

No	Issue	Action	Objective	Start date	Planned end date	Responsible OT Department	Q3 2024 Update
5	Assess alternative investigation methodologies to assess potential seepage pathway(s) under or through the Dike	Investigation – Evaluate opportunity to conduct tracer tests	As with the above the identification of the seepage migration pathway is the objective and could require the usage of tracer and/or isotope test work.	Q2 2024	Q3 2024	Environment	**In progress but delayed.** From the Q2 2024 Audit Report OT had issued a Scope of Work for an: "*Isotopes study of the TSF areas for tracing the seepage sources".* The Scope of Work includes lab analyses for stable isotopes. Outcome reporting was expected by Q3, 2024. It is hypothesized that shallow groundwater, seepage and other drainage waters will exhibit $\delta^{2}H$ and $\delta^{18}O$ signatures similar to modern day recharge (e.g., rainfall). In contrast deeper groundwaters are expected to display a distinct, lighter δ2H and $\delta^{18}O$ composition, indicative of older groundwater. OT is also investigating the use of other isotopes including nitrogen ($\delta^{15}N$), strontium ($^{86}Sr/^{87}Sr$), boron (B) and sulfur ($\delta^{34}S$), for seepage tracing. For this Audit the IESC reports that 75 samples have been sent for laboratory analysis to the University of Western Australia. However results are still pending (now to become available in Q1 2025) and it is unclear if this work will lead to a "signature" to determine if seepage from the TSF is bypassing the cut-off Dyke.

No	Issue	Action	Objective	Start date	Planned end date	Responsible OT Department	Q3 2024 Update
6	Use the investigation activities to inform long-term management strategies which may include re-location of the pump station, extension of the Dike northwards, additional trenching and sumps within the Seepage Collection Area and upgrading of the existing Dike embankment in areas where effectiveness may be comprised	Remedial – Synthesize all investigation data to inform long-term mitigation strategy drilling data for geology update Design and implementation of Dike extension and remediation Design and implementation of Pumphouse relocation	Redesign of holistic seepage containment system for combined TSF Cells #1 and #2. This could include extension of the Dike northwards and other improvements to ensure the cut-off system is functional and effective.	Q4 2023	Q3 2024	Tailings and Hydrogeology	**Completed.** Significant engineering controls and revamped management strategies have been undertaken. These include: • Relocation of the pump house • Pumping to maintain water levels behind Dyke to below 1135.5 m • Installation of a “French drain” system to collect any shallow groundwater from downgradient of the existing Dyke to the current seepage collection pond. • Extension of the cut-off dike approximately 1 km to the north. This is an extensive undertaking as depth to bedrock can extend up to 12.5 meters. A multi-phase approach is planned and being coordinated with Knight Piesold. • Planned for early Q4 2024 is the installation of radial drains to capture any stored waters west of the Dyke and divert them to the current seepage pond (removing flow at this location as a possible migration pathway)
7	Close proximity of the Dugat/Khaliv Surface Water Diversion to the eastern boundary of the TSF	Reroute Dugat/Khaliv Surface Water Diversion to distance this environmental receptor from the TSF	Reconstruction of the Dugat/Khaliv Surface Water Diversion to prevent impact from the TSF	Q1 2025	Q3 2025	Engineering and Projects	**In progress.** Planned as part of the 2025 Mine Zone Expansion project. Design has been finalized to route a new Dugat/Khaliv Surface Water Diversion to a discharge point further downgradient from the MLA.

No	Issue	Action	Objective	Start date	Planned end date	Responsible OT Department	Q3 2024 Update
8	Investigate potential area of shallow groundwater apparent in aerial photography and assess if likely to be related to TSF seepage	Investigation – Installation of an alluvial and weathered bedrock monitoring bore pair	Determination as to if shallow groundwater observed to the east in aerial photography is related to TSF seepage	Q2 2024	Q3 2024	Tailings and Hydrogeology and Environment	**Completed.** OT has performed an investigation into an observed area of "browning" in aerial imagery just to the east of the TSF. A stand-alone study entitled "*Soil salinity characterisation study in the surrounding area of the Tailing Storage Facility at Oyu Tolgoi*" was produced by the OT Environment team. In summary soil sampling shows elevated salts in the area (Cl, Mg and Na), but no differences in metal concentrations. Such results could be attributed to evapotranspiration so do not provide much additional insight.

9	Fully understand the surface water and groundwater resources and the potential impacts of OT operations (include TSF Cell#1 and Cell#2) within the Khaliv/ Dugat catchment in order to develop appropriate mitigation options	Investigation-Dugat-Khaliv catchment Water Resources Impact Assessment	Preparation of Piteau Associates Report: *Dugat-Khaliv catchment Water Resources Impact Assessment*	Q1 2024	Q4 2024	Tailings and Hydrogeology and Environment	**In progress.** A report is in draft, with key findings provided in a presentation and question and answer session. The study contains a good detail of information to supplement the known hydrogeology of the overall Budaa catchment, which includes the Dugat/Khaliv systems. Key findings of the study are as follows: • The majority of Budaa catchment alluvium is unsaturated and consists of thin aeolian or alluvial deposits • Alluvial groundwater normally only occurs in thicker / wider major streambeds • The alluvial groundwater system is episodically "topped up" by storm events that greatly exceeds groundwater storage capacity. These typically occur at least every two years • Groundwater losses occur through bare soil evaporation or evapotranspiration, resulting in receding levels during intervening dry periods • **Groundwater inputs/discharges are primarily vertical with relatively minor and localized** • **Importantly unsaturated reaches occur where alluvium thins out over bedrock "highs", which prevent any lateral flow** • Essentially there is no bedrock groundwater flow deeper than about 25 m

10	Improve understanding of Cell#1 seepage water quality and quantity, root cause, migration extent and toxicological affect.	Investigation-Study on TSF seepage water quality, migration extends and toxicological study.	Understanding the toxicology of TSF seepage to the environment	Q1 2024	Q4 2024	Environment	**In progress and delayed.** A report was in draft during this Audit, with key findings provided in a presentation and iterative question and answer session. Key findings of the study were provided during the Audit: *TSF Seepage Water Quality, Migration And Toxicology Lender's Audit Presentation* The study purpose was to compare barge pond water quality and downstream water quality and hydrogeology. Determination of seepage water source and fractionation was also scoped (e.g., process water content relative to groundwater content). The study was also to evaluate toxicological potential impacts of observed seepage water in monitoring bores. The IESC questions the methodology and approach used in this work. Actual barge pond water is not being assessed; rather a literature search of compounds used in the process circuit. There is discussion of a "plume" from the site of a high TDS waters; however the exact cause of high TDS has not yet been established and it is premature to refer to any known plume. Further other studies indicate very thin alluvial sediments in the region, with limited to no lateral groundwater flow during dry periods. Rather pockets of discontinuous alluvial sediments likely exist. Further the pumping behind the Dyke to maintain water levels below 1135.5 m likely impacts flow paths near the MLA boundary. As such groundwater gradient flow/plume modeling is of very limited utility, as the authors point out. The IESC also suggests that discussions of possible water treatment systems is premature. Rather the source of high TDS waters must first be determined along with risk to the environment. The work under this action item should be further

No	Issue	Action	Objective	Start date	Planned end date	Responsible OT Department	Q3 2024 Update
							discussed with the Lenders and IESC to ensure outcomes.
11	Need to replace the shallow groundwater pumped from the diversion and/or French Drain as to ensure no net reduction in water quality or quantity	Remedial – Develop and implement strategy of recharging low TDS water to the alluvial system to ensure no net impact. Likely strategy to involve treatment of elevated salinity water Reverse Osmosis (RO) and recharge of treated water back to alluvial system	Remediate the high TDS seepage water	Q3 2024	Q1 2025	Tailings and Hydrogeology and Environment	**In Progress.** As discussed above a "French drain" system has been installed downgradient of the Dyke to return any waters that could be bypassing the Dyke, and to return these waters to the seepage collection area. This French drain system is producing limited input of approximately 0.3 L/s. It is not immediately clear how much of these waters are actual seepage from the TSF, and what component could be naturally occurring groundwaters. Although there could be an opportunity to recharge high quality potable water into the Dugat system (e.g., RO treated water from the Gunnii Hooloi), more detail is needed to guide any such management decisions. For example the current momentum of designing treatment systems with polishing circuits needs more justification.

12	There is understandable concern within the herders' community, local officials, and TPC regarding the extent and significance of the seepage and OT LLC remain committed to providing regular updates on monitoring data and the progress of remediation work.	Consultation- Develop and implement a stakeholder engagement plan for communicating environmental incidents stakeholder engagement plan for communicating environmental incident. Target stakeholders for engagements planned are: • Herders' communities • Aimag governor • Soum governor • TPC • Local NGOs (Goviin gazar shoroo, OT Watch, Munkh Nogoon Galba, Accountability Council etc.)	Revised and Integrated Communications and Stakeholder Engagement Plan to include the Environmental Incident Records of discussion of the Environmental Incident with stakeholders and the TPC	Nov 2023	Q1 2024	Communities and Social Performance team	**Completed.** A topic-specific Communication Plan is in implementation. The plan includes engagement with local stakeholders including the KB governor's office, local environmental inspectors, as well as local herders. Actions to supply information to the community are proceeding as planned. A video presentation about the Tailing Storage Facility is being prepared. The RAP Q2 2024 report was uploaded to www.ot.mn, and the report file with location link has been emailed to local stakeholders. A site visit to the mine was organized for the Emergency Agency of Umnugovi Province and the personnel of the 66th Fire and Rescue Unit of Khanbogd soum to provide information on the TSF. Parties agreed to align emergency response plan of aimag, KB soum and OT. Recently in Q3 2024 a quarterly Town Hall meeting was held. The implementation status of the planned activities under the RAP were presented. More than 300 local community members attended the town hall meeting. No questions were raised by the stakeholders. CSO representatives (Accountability Council, Gobi Soil. TPC member, KB Citizenship Khural member, and the NGO (PEM) visited the TSF areas in Q3 2024. The agenda included TC#1 area, TC#2, Khaliv Dugat river diversion project, and the natural springs along the downstream riverbed. Participants and community stakeholders had a wrap up meeting with relevant OT leaders to provide feedback on OT performance and RAP implementation.

4.2.7 Photographs of RAP Implementation Q3 2024

As referenced in this section OT has implemented considerable work in implementation of the RAP. An aerial photograph of the site from Q2 2024 is shown as Figure 4-30. As shown the French drain system is installed downgradient of the Dyke, with the new pump house under construction. Figure 4-31 shows the status of Q3 2024 with the new pump house now installed, and the location of the extension of the cut-off Dyke to the north. The installed French Drain system (since covered) is shown as Figure 4-32, and finally Figure 4-33 shows the relocated seepage collection system.

Figure 4-30 RAP Mitigation Status as of Q2 2024

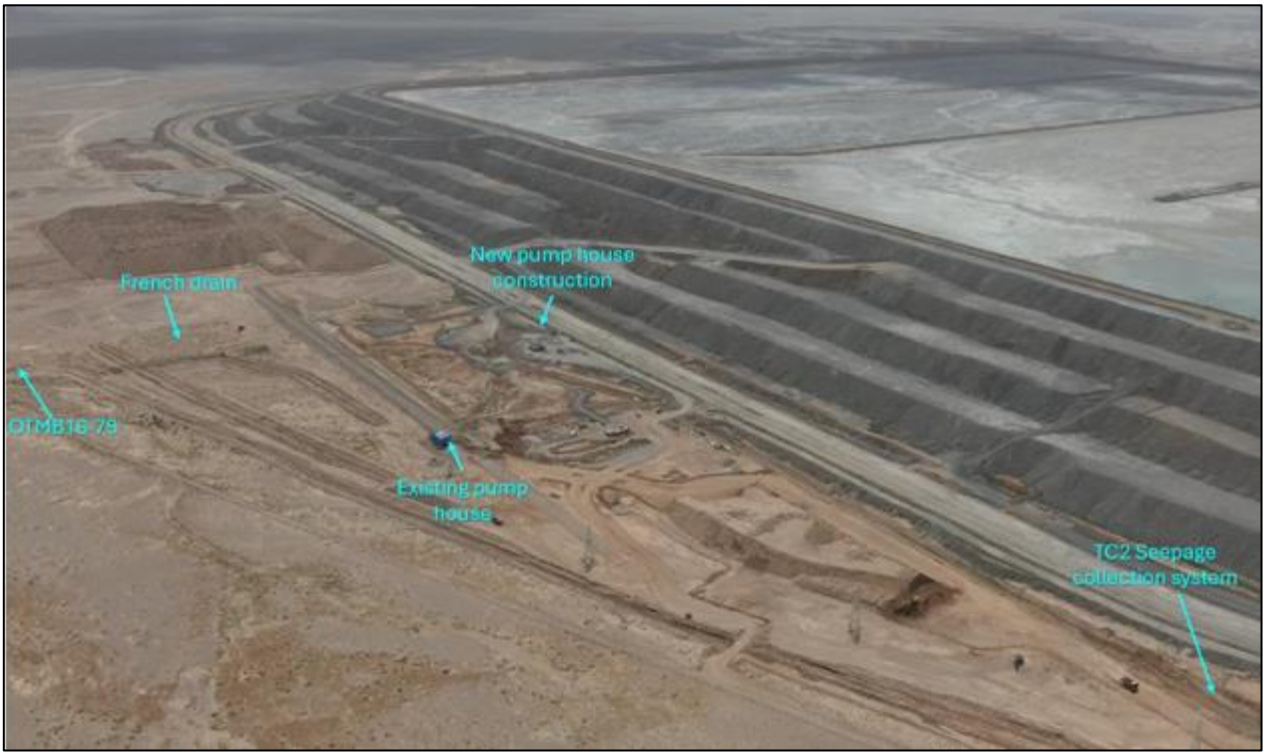


Figure 4-31 RAP Mitigation Status as of Q3 2024

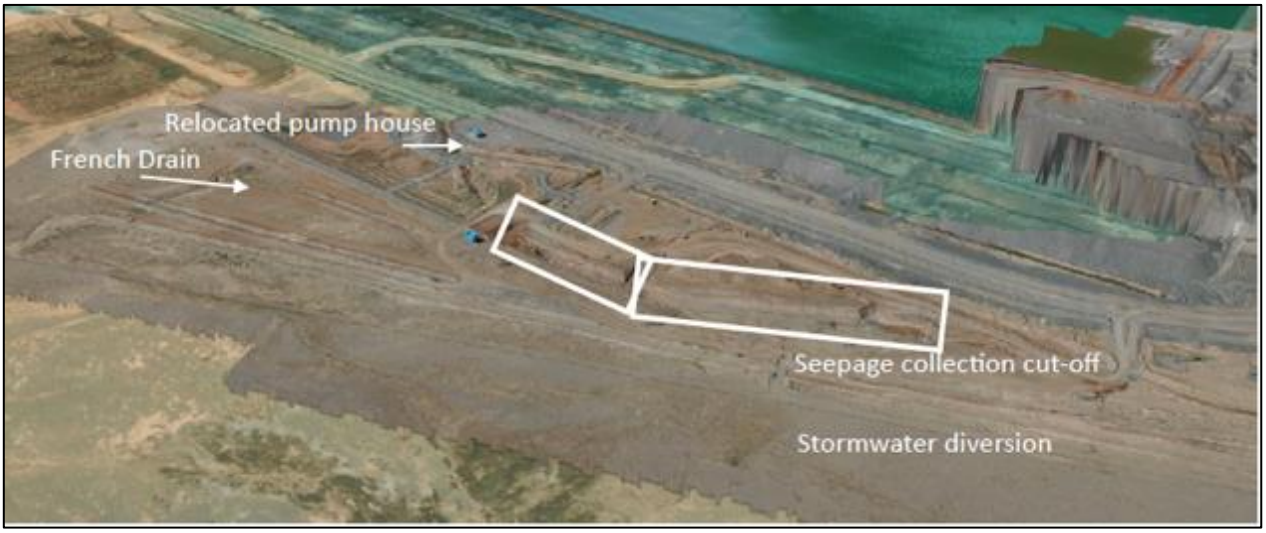


Figure 4-32 Installed French Drain System (to be covered)

Figure 4-33 Relocated Seepage Collection Pump House and Seepage Collection Pond

Additional photographs are provided below in constructing the substantial TSF Cell#2 seepage collection system, which will tie in with the TSF Cell#1 seepage collection system. Figure 4–34 shows the very deep excavation to ensure no fissured clays are present which could create vertical seepage pathways. Some of these excavations were up to 12 m deep, as shown. Figure 4-35 shows the redesign of TSF Cell#2 with the passive seepage collection system shown underneath the toe well, in the pink color to the right on the figure. This cut-off trench and subterranean seepage collection system are shown in Figure 4–36, with the cutoff trench to the left and seepage collection system to the right (east). Lastly the seepage collection trench is show also in 4-36.

Figure 4-34 TSF Cell #2 Excavation for Clay Cut-Off Trench (up to 12 m below surface)

Figure 4-35 Redesign of TSF Cell #2 (pink Seepage Collection System to the right under toe)

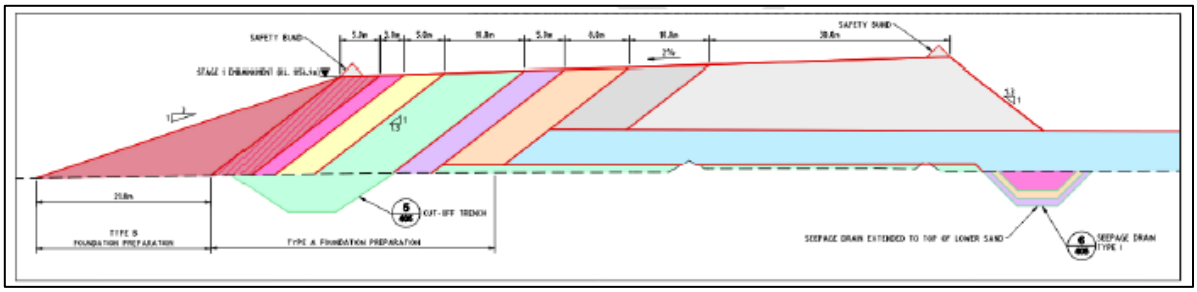


Figure 4-36 Aerial View of TSF Cell #2 Cut-Off Dam (left) and Seepage Collection Trench (right)

4.2.8 Changes to TSF Cell #2 Design

Since the original design of TSF Cell #1 there have been a number of lessons learned through the construction and operation of that facility. Numerous studies have been performed by the TSF Engineers of Record. ATC Williams was most recently been the Engineer of Record, with transition to Knight Piesold beginning in year 2024. Site investigations completed since 2020 have included the following**:**

- Excavation of additional test pits;
- standard penetration tests;
- cone penetration tests;
- seismic cone penetration tests;
- an electrical resistivity survey;
- falling head permeability tests ; and
- clay fissures presence investigation

Recognizing the seepage from TSF Cell#1, OT has made significant design changes to TSF Cell # 2. These include the following:

- Installation of a permeable seepage collection system beneath the TSF Cell #2 walls This allows proactive management of seepage rather than reactive as it becomes apparent (major design change);
- Installation of a deep engineered clay cut off trench beneath the entire perimeter of TSF Cell #2. This trench has a minimum depth of 4 meters, and extends up to 12 meters in some locations to remove fissured clays and sand lenses (major design change);
- Enlargement of culverts and extension of the Dugat/Khaliv Surface Water Diversion to avoid ponding on the western perimeter (i.e., allow more flow to proceed downstream); and
- Operational changes to TSF pond management to decrease potential infiltration rates (i.e., less seepage through tailings)

Additionally OT has investigated locations at TSF Cell#2 at which naturally-occurring clays are less than 1m in thickness, and engineered these locations to have this minimum clay thickness. OT has also placed at least 1 m of clay onto locations of alluvial borrow pits along the historic Dugat/Khaliv channel which will underlie TSF Cell #2. The enlarged Dugat/Khaliv Surface Water Diversion will transport more flow around the TSF complex, which currently also has evaporation ponds on the western flank that do not allow passage of all storm water

4.2.9 Independent Technical Review Board

OT has commissioned an Independent Tailings Technical Review Panel (ITRP) that provides periodic independent assessments of the TSF design and construction, as well as comments on future planning. As part of this work attention is also given to potential seepages from the TSF, and discussion of their appropriate management. The IESC has reviewed the most recent ITRP Report #11 of Q2 2024 and is including key findings of that report, as it relates to environmental considerations of the TSF.

A key summary of this report is the following:

"The ITRP consider that the complete reversal of impacts on the alluvial aquifer immediately downstream of the eastern seepage collection area may not be possible, and the primary cause of impact may be the cutting of the upstream alluvial channel by TC1, and the consequent reduction in natural recharge/flushing events that sustain the shallow alluvial aquifers".

This is reinforced with presentation of the pre-satellite imagery from circa 2005 showing the location of the MLA overlying the Dugat/Khaliv ephemeral channel system (Figure 4-37). The smaller red box to the right is the area of the current seepage collection system.

Figure 4-37 Aerial View of TSF Cell #2 Cut-Off Dam (left) and Seepage Collection Trench (right)

The ITRP are also supportive of the current plan to divert stormwater runoff from the channels further to the east. Importantly the ITRP consider that treating the property boundary itself as the point of compliance for alluvial groundwater is not ideal from a hydrogeological perspective, as the TSF itself is located very close to this boundary. The report also mentions the bedrock high within the alluvial channel to the east that could provide a natural barrier to prevent downstream migration of impacted groundwater. The ITRP recommend that the source of the highly saline groundwater to the south of the seepage collection sump should be investigated to determine whether it is associated with natural groundwater, natural salt load within the clay backfill, or evapoconcentration of seepage water. The ITRP also recommended that further work is undertaken to identify a reliable indicator of TSF seepage water.

4.2.10 IESC Review and Recommendations

1. OT has implemented significant mitigation actions downgradient of TSF Cell#1. A French Drain system has been installed to collect seepage that could have bypassed the cut-off Dyke. A radial system of drains will be installed by the end of the 2024 field season to collect any seepage from the TSF Cell#1 that could be abutting the cut-off structure, routing this to the new seepage collection pond. The pump house for the seepage collection pond has been relocated. Overall implementation of the RAP has been generally good, although there are some action items that are delayed and/or incomplete.
2. Geochemistry and isotope studies have not yet identified a reliable and conservative “signature” for actual seepage from the TSF. Some component of elevated TDS in monitoring bores could be influenced by the forcing upward of high TDS perched groundwaters. This is caused by the high downward pressure of the TSF dam walls, which are approximately 70 meters high. The IESC believes more focused work is required in this effort, with oversight from Rio Tinto specialists.
3. Oyu Tolgoi has retained third-party specialist consultancies to assist in implementation of the RAP. The cut-off dam has been extended to the north, the pump house relocated, and a French drain system installed to intercept seepage. The only way for TSF seepage to currently enter the environment is along weathered bedrock surfaces under the Dyke. However any such bypass is collected by the French Drain system which is returning a flow of 0.3 L/s to the seepage pond.
4. As part of the RAP a *Dugat-Khaliv catchment Water Resources Impact Assessment Study* is in progress. Key early results are that groundwater inputs/discharges are primarily vertical with lateral groundwater flow relatively minor and localized. Importantly unsaturated reaches occur where alluvium thins out over bedrock “highs”, which prevent any lateral flow. There is one such bedrock high approximately 300 m downgradient of the mine site.
5. The IESC questions the methodology used to characterize the potential for barge pond water to be causing elevated concentrations of TDS and other compounds downgradient of the site. Actual barge pond water has not been assessed; rather a literature search of compounds used in the process circuit. The study was to evaluate potential toxicological impacts of the actual observed seepage water in monitoring bores. The IESC also suggests that discussions of possible water treatment systems is premature. Rather the source of high TDS waters must first be determined along with the corresponding risk to the environment. For example if high TDS is caused by the mounding of natural groundwaters, such treatment of natural groundwaters may not be appropriate.
6. The IESC commends the recent decision to reroute the Dugat/Khaliv ephemeral river channel to a discharge point further downgradient in the system (i.e., not immediately abutting the TSFs). It is apparent in many discussions that future tailings cells are scheduled to be constructed immediately to the east of the existing TSF Cell#1 and #2. The existing Mine Plan contemplates operations through at least year 2051, with the current Cell#2 being completely full within the next 10 years. As such the IESC recommends that discussions regarding the Environmental Incident reflect that reality.

4.3 Mineral Waste Management

Mineral waste is managed in conformance with Mineral Waste Management Plan commitments (OT Document OT-10-E13-PLN-0001-E). The segregation and emplacement of non-acid forming and potentially-acid forming (NAF/PAF) mineral waste is managed in conformance with committments of the Mineral Waste Management Plan. All emplacement of NAF/PAF material is based on established segregation criteria based on total sulfur, total carbon and acid neutralization potential. The OT Mine Geology team logs every blast hole, and for waste zones one in every five blast holes is selected for sampling. These samples are delivered to a site lab for chemical analyses which includes sulphur content and acid neutralizing capacity. All chemical assay results are archived in databases reflecting a three-dimensional block model of the deposit. Environmental monitoring has not identified any adverse effect (i.e., acid mine drainage or metal leaching) from OT waste rock features.

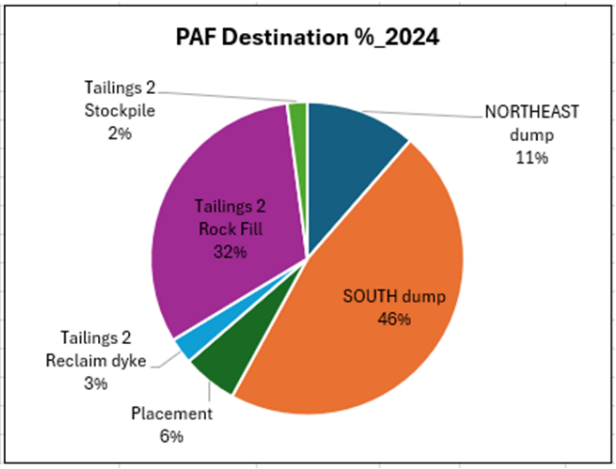
For calendar year 2024, through August, a total of 33.1 Mt of waste rock has been mined. For full calendar year 2023 a total of 48.6 Mt of waste rock was mined, with a 2022 full-year total of 55.1 million tons. Total mined material for full calendar year was 90.5 Mt, including 41.9 Mt of ore. The OT Mine Geology team logs every blast hole, and for waste zones one in every five blast holes is selected for sampling. These samples are delivered to a site lab for chemical analyses which includes Sulphur content and acid neutralizing capacity. All chemical assay results are archived in databases reflecting a 3-dimensional block model of the deposit.

Of the 48.6 Mt of waste rock mined in 2023 a total of 11.9 Mt (24.4%) was classified as PAF, with the remaining 36.7 Mt (75.6%) being NAF. Thus far in calendar year 2024, through August, a total of 33.1 Mt of rock material has been mined and of that approximately 76% was catergorised as waste rock. Furthermore, 49% or 12.4 Mt of the total waste rock (25.2 Mt in tonnage), was classified as PAF whereas 51% or 12.7 Mt was NAF. For full calendar year 2023 a total of 48.6 Mt of waste rock was mined. Of this 48.6 Mt a total of 11.9 Mt (24.4%) was classified as PAF, with the remaining 36.7 Mt (75.6%) being NAF.

Waste rock is hauled to dedicated waste rock dumps in close proximity to the open pit, or used for Tailings Storage Facility (TSF) construction. Figure 4-38 below presents the details of 2024 accounting for the PAF waste rock; PAF waste rock is delivered to Waste Rock Dumps or used as TSF rock fill with suitable encapsulation. Approximately 4.5 Mt PAF waste rock was used for final construction of TSF embankments.

Figure 4-38 Final Disposition of Mined PAF in 2024 (through the end of August)

Material Type	Destination	Tonnage	Percent
PAF	EAST dump	5,928	0%
	NORTHEAST dump	1,415,217	11%
	QCRS	18,851	0%
	SOUTH dump	5,784,368	46%
	WEST dump	595	0%
	Placement	704,092	6%
	Tailings 1 OTHER	15,456	0%
	Tailings 1 Pipe pad	1,257	0%
	Tailings 1 Stockpile	2,235	0%
	Tailings 2 Pipe pad	1,618	0%
	Tailings 2 Reclaim dyke	334,856	3%
	Tailings 2 Rock Fill	3,925,052	31%
	Tailings 2 Ring Road	309	0%
	Tailings 2 Stockpile	256,172	2%
Grand Total		**12,466,006**	**100%**



In calendar year 2023 approximately 23.6 Mt of overall mined waste rock was used for final construction of TSF embankments including all of the PAF. Waste rock was used both for a final raise of TSF Cell #1, and also 5.2 Mt of material was used in construction of the new TSF Cell #2. All emplacement of NAF/PAF material is based on established segregation criteria. Table 4-7 presents details of 2023 accounting for the 11.9 Mt of PAF mined waste rock; as shown this material is delivered to Waste Rock Dumps or used as TSF rock fill, with suitable encapsulation. In year 2024, through August, mined PAF containing waste rock is being placed at TSF Cell#1 or encapsulated in WRDs.

Table 4-7 Final Destination of 2023 Mined PAF Waste Rock (in tons)

Waste Type	Material Produced (Mt)	Delivered to TSFs (Mt)	Delivered to Waste Dumps (Mt)
SOM (PAF)	0.8	-	0.8
Type 1 (NAF)	5.2	1.1	4.2
Type 2 (NAF)	25.6	20.3	5.3
Type 3 (PAF)	6.2	0.1	6.0
Type 4 (PAF)	4.9	1.6	3.3
Clay (NAF)	5.8	0.5	5.3
Total	48.6	23.6	25.0

The Mineral Waste Management Plan (OT Document OT-10-E13-PLN-0001-E) establishes KPI's that address reporting of any mineral waste management incidents, tracking of mineral waste erosion events and any complaints associated with OT management practices (MWM KPI-01 through MWM KPI-03). There have been no registered complaints with respect to mineral waste management. Discussion of seepage present in shallow alluvial monitoring bores to the east of the TSF is discussed in Water Resources Section 4.2.

4.3.1 Approval of NoC 2023-002

An important year 2024 change to mineral waste management is approval of NoC 2023-002. This NoC addressed a change to the waste rock placement procedure, which historically required a minimum 3 m thickness of NAF waste rock or clay be placed underneath all PAF waste rock dumps or ore stockpiles. This requirement was included in the original 2012 ESIA and intended to prevent any interaction between this material and potential water at the ground interface. The NoC requested that a change to the Mineral Waste Material Segregation Procedure be approved to allow placement of PAF material directly on the ground surface, as long as it is kept away from the Undai River channel. The NoC was originally submitted in Q1 of 2023 but not approved at that time pending additional study. The path forward for approval of this NoC was

discussed during the Q3 2023 Audit and included recommendation for a technical study to demonstrate long-term dry conditions at the ground interface.

The NoC was resubmitted in Q4 2023, this time with supporting modeling in a third-party study: *Oyu Tolgoi Waste Rock Dump Basal Layer Modelling* (2023). In the report and corresponding model a number of long-term (90 year) scenarios were modeled both with the presence of a buffering 3 meter thick “basal layer”, and without. Model inputs also included a wide range of percolation rates from 1% to 10% of total annual precipitation. The Gobi region of the project area has very low rates of precipitation (~ 100 mm/year) and also very high evapotranspiration rates during non-winter months.

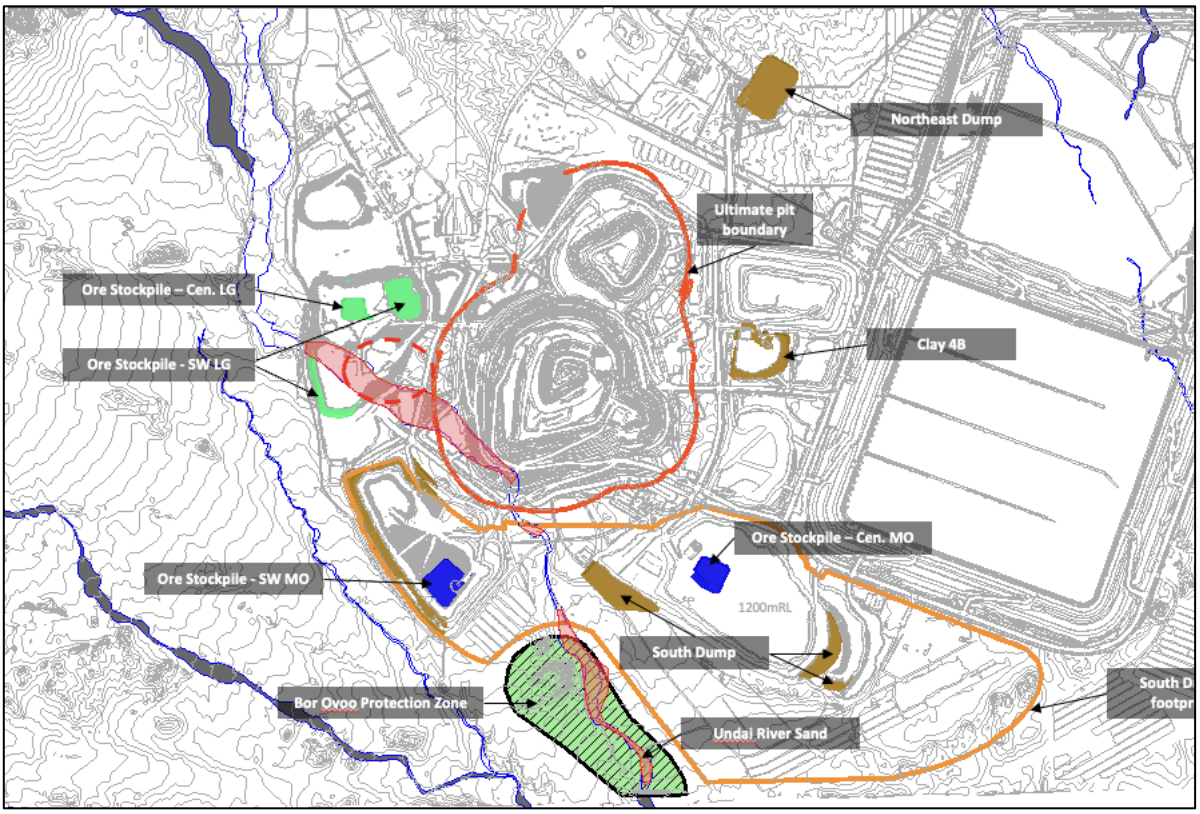
In summary the modeling found net percolation was too low for saturated conditions to develop, regardless of if there was a basal layer or not. Modeling confirmed that net percolation rates are too low to allow for the development of a saturated zone within waste rock dumps. No saturated hydraulic connection was modeled to form between PAF material and any perched water table at the OT site.

The key requested change to the OT Material Segregation Procedure was the cessation of the current practice of placement of a non-acid forming waste rock and/or clay layer as a neutralizing or low-permeability basal layer underlying potentially acid-forming waste rock dumps or ore stockpiles. The cessation of this practice was approved by Lenders due the very arid/high evaporation climate of the region, corresponding low infiltration rates of any produced runoff, and lack of sensitive perched aquifer groundwater resources in the region. Anecdotally the IESC has not observed the presence of standing water at the toe of any waste rock dumps or ore stockpiles at the site. Seepage is observed at the TSF, but this is a function of the saturated conditions at the tailings receptor location.

The modeling undertaken demonstrate the lack of risk of PAF materials leaching metals into the environment via acid mine drainage. This is corroborated by the lack of any acid rock drainage present at the site, which are in turn a function of the extreme dry environment. Further groundwater gradients in the vicinity of the WRDs flow towards the open pit, creating a natural sump for any acid rock drainage that would generate, although this is not modelled to be present.

The Undai River system is the natural sensitive environmental receptor; however the section of the Undai River within the Mine License Area is cut off from the regional system via constructed “cut-off dams”. Thus no drainage from WRDs would escape into the site. Nevertheless OT will maintain the current practice of placement of a 3 meter thick NAF “basal layer” in locations of the cut-off Undai River channel, after high conductivity sands and gravels are first removed. A diagram of waste rock and ore stockpile is shown on Figure 4-24, as well as the location of the “Bor Ovoo Protection Zone”. For a calendar year 2023 no PAF material was placed directly on the ground surface. Beginning in Q2 2024 some PAF waste rock was placed in the Northeast dump, as shown on Figure 4-38. Through the end of 2024 it is projected that approximately 4.5 Mt of PAF waste rock will be emplaced at this location, which is to the west of TSF Cell#2. This location is well away from the Undai channel and Bor Ovoo Protection Zone.

Figure 4-39 Location of Waste Rock Dumps and Ore Stockpiles as of Q3 2024



It is possible that beginning in 2025 the South Waste Rock Dump will be used for emplacement of PAF material. If this takes place the revised Mineral Waste Segregation Procedure will be followed requiring removal of alluvial sands within the Undai alluvial channel, which is now hydrogeologically discontinuous from the greater Undai channel from the Surface and Groundwater Diversions. The Environment Team will ensure that waste rock emplacement occurs outside of the Bor Ovoo Protection Zone, and has also worked with the Communities Team to ensure visual line of site from the New Bor Ovoo spring to the location of the historic Bor Ovoo location, a culturally sensitive consideration.

4.3.2 TSF Dam Break Assessment

TSF Cell #2 has been categorized as a High Consequence facility under the ICMM (2020) Global Industry Standard on Tailings Management. The Feasibility Study prepared for this Cell #2 (*Oyu Tolgoi Copper Mine TC2 Tailings Storage Facility Feasibility Study, ATC Williams, 2021*) contains a Dam Break Assessment that is still valid. For this worst-case scenario modeling outcomes indicated the underground access area would be impacted by a western breach, and approximately 4 herder winter shelters and 5 herder wells inundated within 24 hours and impacted by eastern breach. However, it should be noted that the worst-case scenario is considered unlikely to occur due to the method of TSF construction and the low seismicity risk. This scenario was only presented to illustrate the maximum theoretical inundation area. In line with the TSF Emergency Response Plan, the Communities Social Performance team conducts quarterly monitoring of the potentially affected downstream households with KB Emergency Management Agency and Police Department representatives, to identify household members and contact information to ensure that should

an incident occur, potentially affected households can be reached in a timely manner and supported to evacuate, should this be necessary.

4.4 Non-Mineral Waste and Hazardous Materials Management

The overall Project strategy for the management and disposal of non-mineral waste is outlined in the Non-Mineral Waste Management Plan[5] and in the Non-Mineral Waste Collection and Transfer Procedure[6] that sit under the overarching ESMP framework. The general Project strategy for the management of hazardous material throughout the Project is outlined in the Hazardous Materials Management Procedure[7] which also sits under the overarching ESMP framework. The Hazardous Materials Management Procedure provides general instructions to OT personnel and contractors on the management of hazardous materials to prevent/contain spillages and environmental contamination and is supported by a number of procedures which provide specific details regarding hazardous materials management activities. These include a Spill Response Procedure[8] to address any uncontrolled releases to the environment.

With the exception of hazardous materials the project continues to be self-sufficient in the management of waste produced during operations. The permanent Waste Management Center (WMC), located on the north-east side of the MLA, continues to be operated by the contractor company Khanbogd Waste Management Center LLC. This company relies on other smaller recycling/reuse local sub-contractors to manage the final disposal of recyclables including industrial waste oils, waste kitchen oil, scrap metal, cardboard, plastics, electronic wastes, and containers for industrial chemicals.

OT implements a waste management hierarchy system that targets minimized generation of non-recyclable waste, re-use of materials when possible, and recycling of non-reusable items in lieu of landfill disposal. Reusable items such as wood are distributed to the local community or delivered to the Khanbogd primary Red Cross association under a MoU signed with OT. The OT Environment Team works closely with OT procurement teams to implement an environmentally - considerate procurement strategy. The following are components of the procurement strategy:

- Hazardous materials can only be sourced after approval in a ChemAlert system;
- OT contracting with suppliers that provide goods/ services and that generate hazardous waste to include a waste management plan in underlying contracts; and
- OT requires waste management plans in new contracts from bidders as part of the proposal process, and these plans are included in the overall evaluation from bidders.

In 2024 to date (through August) OT has generated a total of 12,549 tons of non-hazardous general waste, of which approximately 75% has been recycled or otherwise used. This includes 7,628 t of material recycled (predominantly iron, technical oils, plastics, and carboard boxes) and 1,733 t of reused materials (wood, pipes, glass, blankets. By weight 1,574 tons of material have been donated to the Red Cross with 4.2 tons of wood and blankets sent to the Khanbogd soum. Significant recycling practices are undertaken for a variety of materials including plastics, cardboard, organic waste, wood and cooking oils.

The Central Heating Plant (CHP) generates significant ash requiring disposal. This material has historically, and is currently, disposed of in a dedicated and unlined Inert Waste Pit (IWP) that is 7.86 hectares in size and located near the Waste Rock Dumps. This IWP is close to reaching its capacity, being 95% full at the

[5] Hazardous Materials and *Non-Mineral Waste Management Plan* - Doc. No. OT-10-E15-PLN-0001-E.
[6] *Non-Mineral Wall Waste Collection and Transfer Procedure* Doc. No. OT-10-E15-PRC-0006-E.
[7] *Hazardous Material Management Procedure - Doc. No. OT-10-E15-PRC-0001-E.*
[8] *Spill Response Procedure – Doc. No. OT-10-E15-PRC-0002-E*

time of this Audit. Filling rates at the IWP have increased as a result expansion of the Central Heating Plant and resultant increase in ash waste generated from this facility.

The Inert Waste Dump was licensed in 2018 (A/139) for disposal of ash and waste concrete; however recently there has been a regulatory push away from issuing new permits for any unlined disposal facility. In 2022 OT submitted a petition to the Governor of the Umnogovi *aimag* to expand into a new 10 hectare area for inert waste disposal. The Environmental Protection Agency of the Umnogovi *aimag* no longer endorses the burying of inert waste, resulting in no approval of the petition. OT has resubmitted the request in 2024 for a smaller 5-hectare expansion, and for use over two years. However during this audit it was reported that no response has been received to this revised petition. OT has recently hosted meetings with the EPA of Umnogovi *aimag* and is hopeful to have resolution before the winter season, when ash generation is at its highest rates.

OT has already explored deposition of ash into the TSF. This option has been deemed not feasible due to negative chemistry impacts to the concentrator circuit and traffic management limitations. It is possible that inert waste will be deposited in waste rock dumps, although this would require regulatory and Lender approval. OT continues to investigate the pulverization of ash for use in concrete production, although this may only be feasible for approximately 20% of generated ash. Long-term disposal plans for ash are still pending, and the IESC will continue to follow up on this consideration in future audit reporting. The situation will reach a critical situation this winter.

The OT Environmental team had established a composting facility for organic kitchen food waste with resultant compost used for vegetative rehabilitation efforts. The composting facility is about 3 hectares and size administered by the OT infrastructure team. Within the compost area rows are established that are 80 meters long, 2 m wide and 2 m high (Figure 4-40).

Figure 4-40 Composting Area at Oyu Tolgoi Site

Recycling and/or reuse of materials is accomplished using 17 contractors. Recycled materials are tracked under WM-KPI 05. Notable salvaged materials for 2024 to date included 3,971 tons of recycled metal and 1,133 tons of recycled technical oils. In 2023 there were no non-hazardous waste management community complaints.

OT has a hazardous waste cell at the WMC which has been designed to international best practice containment standards, as well as Mongolian requirements for the storing of hazardous materials (Government Resolution No. 118 of 2018). The hazardous waste cell is not currently in use pending a long-delayed Hazardous Landfill Operation Permit authorization by the Mongolian Ministry of Environment and Tourism (MET).

In June 2020 a Mongolian domestic Detailed Environmental Impact Assessment (DEIA) for the hazardous waste facility was approved by the MET. Since that time OT has been working with the MET to obtain the requisite Hazardous Landfill Operation Permit. Until this is obtained no hazardous materials can be deposited into the hazardous waste cell at the OT site, as originally envisioned in the ESIA. OT had anticipated receiving the Operational Permit as long ago as 2021 but there have been substantial delays in receiving authorization. OT has had multiple meetings with the MET Waste Management Committee with no clear path identified for issuance of the requisite permit.

Because of this delay the OT Project has accumulated a large volume of hazardous waste which is stored in containers and in dedicated yards. As of Q3 2024 there were a total of 49 tons of stored hazardous material (39 types). An inventorying of the total tonnage of hazardous materials stored on site over the last two years is shown in Table 4-8.

Table 4-8 Hazardous Waste Stored on Site 2022 – Q3 2024 (in tons)

Type of Hazardous Waste	Different Types	Q2 2022	Q2 2023	Q4 2023	Q1 2024	Q3 2024
Disposal Method is Clear (66%)	15	279	344	347	418	319
Disposal Method is Not Clear	18	25	27	27	27	41
Recyclable Material	5	118	153	75	24	89 (1)
Reusable Material	8	32	32	32	32	32 (2)
Unidentified Material	4	14	14	14	14	N/A
Total	**45** (3)	**468**	**570**	**495**	**515**	**481**

1) Printer ink toner cartridges are recyclable, although no option exists in Mongolia for this recycling. Thus the cartridges will be incinerated

2) This includes eight types of materials initially classified as reusable; however their prolonged storage has rendered them unusable and they will instead be incinerated

3) At the time of writing OT reduced the number of types of hazardous waste materials stored on site to 39, as described below.

Hazardous materials, including liquid chemicals, are stored in a dedicated hazardous material storage area as shown on Figures 4–40. This storage area complies with all Mongolian requirements for the storage of

hazardous materials, is permitted by the Mongolian General Agency of Special Inspection, and audited by the regional *aimag* Environmental Inspection Agency. The hazardous material storage area has a concrete base, walls to separate materials, roof to protect from direct sunlight, and a spill containment system.

Figure 4-41 Hazardous Waste Storage Area

In 2022 inspections were performed by OT of nine companies that are engaged in recycling and/or disposal of hazardous waste. Following these inspections in Q3 2022 one of these companies, Element LLC, was awarded an authorization from the Ministry of Environment and Tourism (formerly the Ministry of Environment and Climate Change and also “MET”) to incinerate hazardous waste originating from the OT site. This private enterprise, located outside of UB, has a modern incinerator that can achieve high enough temperatures to incinerate hazardous waste. The MET has encouraged OT to use this incinerator option for the management of non-recyclable hazardous waste. The contractor company for management of the Waste Management Centre (Khanbogd Waste Management Center LLC) has signed an agreement with this third party for shipment, handover and disposal of hazardous waste currently stored at the OT site. A copy of the Government of Mongolia certificate that authorizes this disposal is kept with OT.

In 2023 approximately 67 tons of hazardous waste were shipped for incineration from the site to the contractor Element LLC and Tsetuukh trade LLC. This material included approximately 51 tons of concrete containing asbestos, and 16 tons of predominantly oily rags. The company Tsetsuukh Trade, LLC, located near UB, incinerated the oil rags and Element LLC, also near UB, managed the asbestos-containing concrete. In Q2 trials were held by Element LLC to incinerate the concrete. However the trial was unsuccessful and the material was disposed of in an adjacent permitted landfill.

To date a total of 116 tons of eight types of hazardous waste have been sent offsite for disposal. Materials sent offsite for disposal include the following:

- asbestos-contaminated concrete (51 tons);
- fire foam (31.5 tons).
- oily rags (14 tons);
- potassium hydroxide (13.15 tons);
- sulfuric acid (3.85 tons);
- formic acid (1.5 tons),
- hydrochloric acid (0.3 tons); and

- acetic acid (0.5 tons)

As a result, the total number of types of hazardous wastes stored at OT MLA has been reduced from 45 to 39.

The IESC had recommended in the prior Q2 2024 Audit Report that OT submit an NoC related to the off-site processing of hazardous waste prior to this activity taking place. In response in Q3 2024 submitted an NoC 2024-004 entitled: "*Change of approach for hazardous waste disposal (Level 2)"*.

The IESC has reviewed supporting materials provided in the NoC submittal. These include a specific license issued to Element, LLC by MET for a period of five years, authorizing hazardous waste disposal. This is the first and only company in Mongolia holding this license for hazardous waste disposal, other than medical waste. Element LLC's hazardous waste disposal facility (HWDF) is in the industrial area of Nalaih District located 40 km east from Ulaanbaatar city and 750km north from Oyu Tolgoi mine site. The HWDF has the following components:

- Office
- Concreted storage area for hazardous wastes
- Warehouse for hazardous chemical materials (equipped with Chinese modern solutions)
- Autoclave for sterilization of hospital wastes.
- Incinerator for Hospital waste incinerator
- Rotary kiln for incineration of hazardous waste (Manufactured in Taiwan with Japanese technology)
- Hazardous waste landfill (Premium grade) Landfill
- Seepage pond
- Monitoring well

The IESC has not yet inspected the facility, although Oyu Tolgoi has provided some recent photographs of the facility. The license held by Element, LLC allows for the loading, transportation, and ultimate disposal of allowable hazardous wastes. Before disposal, all hazardous wastes are temporarily stored in a concrete-based storage area, which is equipped with berms, emergency channels, and water spraying systems.

The wastes are then allocated to specific facilities depending on their disposal types. Most hazardous chemicals and wastes are incinerated in a rotary kiln incinerator, manufactured in Taiwan with Japanese technology (Figure 4-41). This incinerator is capable of burning various types of hazardous wastes at temperatures ranging from 800°C to 1200°C. It features an inline rotary burner and a domain burner, which ensures complete combustion of the wastes. The fumes from the incinerator pass through a water fogging filter and mechanical filters, significantly reducing air pollution. Ambient air quality and soil monitoring conducted at the HWDF indicate that all parameters meet the domestic Mongolian relevant standards (MNS4585:2016).

Figure 4-42 Incinerator at Element LLC

OT is seeking to dispose of materials for which the disposal method is clear, and work with laboratories to determining possible disposal methods for the 41 tons of material for which the disposal is not clear (Table 4-8). Recyclable material will be processed to recycling plants with the exception of ink toner, for which no recycling option is locally available.

In 2024 Oyu Tolgoi performed an internal environmental and social Risk Assessment which included the loading of hazardous waste loading onto trucks, transportation, unloading, temporary storage, and disposal. This Risk Assessment was performed in addition to the risk assessment performed by the Mongolian Ministry of Environment and Green Development and the Ministry of Health. As a result of the risk assessment four Class I risks and one Class II risk were identified. These risks are associated with spillage and hazards during handling and transportation, as well as inadequate handling and processing upon delivery for ultimate disposal. There are mitigations, responses and controls identified for each potentiality, and overall likelihood is low or very low.

Element LLC transports the hazardous waste from Oyu Tolgoi mine site to the facility by its own trucks and with trained drivers. The 750 km transportation route is all paved and approved by the regional traffic police. At the HWDF hazardous waste is stored in a designated area with a concrete base for temporary storage, and depending on the nature of the waste, it is then buried in the landfill or burned in the incinerator. The incinerator is only used during the warm season, so that it is safe for human health and the environment.

The IESC has reviewed the supporting materials provided by OT, including the internal risk assessment. The controlled and appropriate disposal of accumulated hazardous waste is a positive development, instead of the long-term storage that has occurred for a number of years. All handling and processing of approved hazardous waste streams has been authorized by the relevant Mongolian domestic regulatory approval agencies. All chains of custody are intact. The IESC will include a visit to the Element LLC facility during the next field audit, currently scheduled for Q3 2025.

The IESC cautions that Oyu Tolgoi is anticipating the number of companies to increase with similar permitting approvals. Future disposal entities should also be vetted by the Lenders and IESC.

4.5 Air Quality

The general strategy for management of particulate and gaseous emissions is described in the Operations Phase Atmospheric Emissions Management Plan[9] (AEMP). This management plan cross-links with other management plans that have air quality implications such as the Community Health Safety and Security Management Plan, the Transport Management Plan and the Land Disturbance Control and Rehabilitation Management Plan.

The intent of the AEMP is to outline applicable Project Standards, define commitments, define monitoring and reporting procedures, and establish key performance indicators (KPIs). The principal implementation procedure of the AEMP is the OT Air Quality Monitoring Plan[10] (AQMP). The AQMP provide procedures for emission and ambient monitoring, including monitoring locations both within and outside of the Mine License Area. Reporting requirements are also described.

4.5.1 Ambient Air Quality

Thus far in calendar year 2024, through August, the Project reports a total of seven non-compliances with applicable ambient air quality Project Standards, as listed in Appendix 1 of the AQMP. In calendar year 2023 there were 18 non-compliances with these standards. These non-compliances were related to particulate matter ($PM_{2.5}$ and PM_{10}) and are generally associated with the occasional spring dust storms that tend to occur in the region. There are no immediate concerns regarding ambient air quality, recognizing background concentrations of particulates in the occasionally very dusty South Gobi region. During the frequent dust storms in the region background concentrations can reach 12 – 20 times the ambient air quality Project Standard. In general, ambient air quality meets the Project Standard at the site for 98 – 99% of the continuous monitoring cycle.

At the Coarse Ore Storage (COS) Building there have been a number of mitigations implemented over time, including the installation of dust curtains and the use of a foam dust suppressant to control fugitive dust emissions. These mitigations have been extensively described in previous Audit Reports. Although mitigations have reduced fugitive dust there is at times an excessive accumulation of dust outside of the COS Building itself, which creates an occupational health and safety risk.

In the Q2 2024 Audit Report it was mentioned that a prior Risk Assessment has identified exposure to respirable dust, including in particular silica, as a key concern. Some sampling had occurred along the conveyor from the COS Building, and just outside of the facility with ambient air quality monitoring results were evaluated by OT relative to domestic regulation MNS 4990:2023 (Occupational Safety and Occupational Hygiene). Limited results did not show exceedances of applicable Occupational Exposure Limits (OELs), but were in some instances were above 50% of the OEL which is considered an action level. The IESC recommended an assessment of dust levels at and around the COS relative to World Health Organization Ambient Air Quality Guidelines, as contained in Table 1.1.1 of the World Bank Group's General EHS Guidelines. The objective of this assessment was be to ensure appropriate occupational health and safety conditions for approximately 22 shift employees, who typically work two week rotations. Excessively dusty conditions can be an occupational health and safety consideration at the OT site.

Based on the results of the monitoring the following actions have already been implemented:

- Use of appropriate and fitted respirator protection devices, with cartridges specific to the field activity;
- Undertake regular verification of exposure to dust;

9 Atmospheric Emissions Management Plan- Doc. No. OT-10-E12-PLN-0001
10 Air Quality Monitoring Plan – Doc. No. OT-10-E12-PLN-0002

- Identify and trial possibility of using a positive air-pressured respirator (PAPR-Versaflo), particularly for those who conduct tasks in the COS building for a long-time (more than 4 hours);
- Implement awareness training for all employees on dust health effects;
- Conduct dust suppression by using watering or chemicals (Dustex) in the working area.

Following a number of meetings with the COS operational team both immediate and long-term improvements and engineering solutions have been planned. Short-term actions include:

- Regular cleaning and road maintenance;
- Trialing new foam for dust suppression system;
- Rollout of site-wide notification advising the area surrounding the COS building is a Respiratory Protective Device designated area;
- Replacement of torn net cover on two side of the facility

Long-Term (within 5 years) actions include fully enclosing open sides of the COS and identification of more effective engineering solutions for dust reduction. Both of these long-term initiatives are with the OT Engineering Projects team. Additional COS monitoring is planned for Q4 2024 and the IESC will continue to report on these results and dust reduction progress at this location.

There was one herder complaint in 2023 related to excessive dust on the road linking OT with the Tavan Tolgoi coal mining operation (the “TT Link Road”). In response OT has double the frequency of watering of this road during the summer months, and has also applied a dust suppressant coating to the road. The total length of the TT Link Road is about 13 km and OT has applied the dust suppressant to approximately 5 - 6 km of the road near the herder’s location and also near the North gate. OT had planned to complete this road paving work in 2024 but recent rains have delayed this work. If not completed this year it will be at the beginning of the 2025 field season.

4.5.2 CHP Stack Emission Quality

The Central Heating Plant (CHP) has a capacity 130 MW. Approximately 40,000 tons of coal per year are used at the CHP. In Q3 of 2019 the project installed a Continuous Emissions Monitoring System (CEMS) at a height of 30 m on the chimney stack from which all emissions of the CHP discharge. This work was completed as part of the overall CHP expansion. Installation of the CEMS is consistent with international best practice and Project Standards, as required for thermal installations of greater than 100 MW capacity.

The CEMS continuously monitors ash/particulates, NOx, and SO_2. For this Audit monthly summary data has been provided for a 15-month period including calendar 2023 and Q1 of 2024. Under approved NoC 2016-015 the evaluation of stack emission quality from boilers at the CHP should occur when the boiler loads are over 70% of nominal capacity. This is also a stipulation of Mongolian National Standard MNS 6298:2011 which regulates stack emission quality. Accordingly, in its review of monitoring results OT excludes some data from analysis.

As mentioned in the prior Q2 2023 IESC Audit Report over a 15-month rolling reporting period there is a limited set of “usable” data, as boiler loads are often below the 70% threshold. For example in calendar year 2023 only 129 of the total 365 days were during a time of over 70% load (typically during the November – March winter period). During warmer months boilers gradually come offline and are cycled at low output to meet the much reduced heating requirements of the site. As a thermal facility the plant is not operated at a consistent capacity output as may be the case with power plants. In addition, 14 days are removed from analysis for boiler start-ups and shut – downs which create temporary incomplete combustion periods. There

was also one eight day period of shutdown for scheduled maintenance. All baghouse filters were changed over 2022 – 2023.

Data from the monthly data set for below the 70% load during 2023 and 2024 (to date) are provided in Figure 4-42. As shown returned monthly data meet the Project Standard. The applicable Project Standard for CHP emissions is 50 mg/m^3 for total particulates, 300 mg/m^3 for NOx and 400 mg/m^3 for SO_2. In contrast the data for operational monitoring is quite different for <70% load conditions, as shown in Figure 4-43.

Figure 4-43 CHP Gaseous Emissions for 2023 and 2024 (Loads Above >70%)

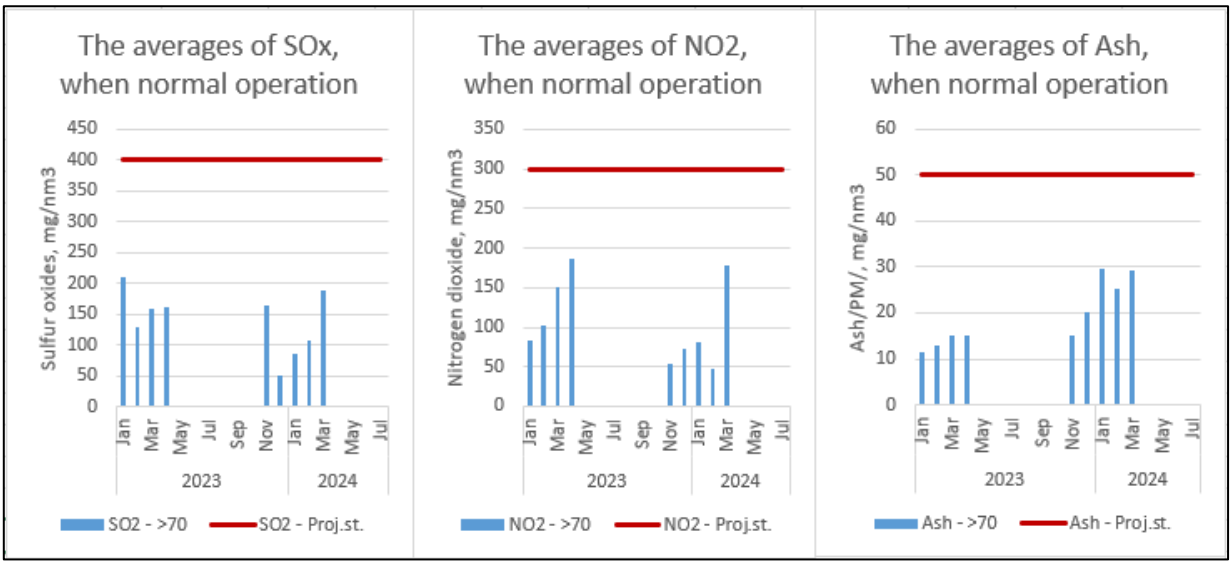
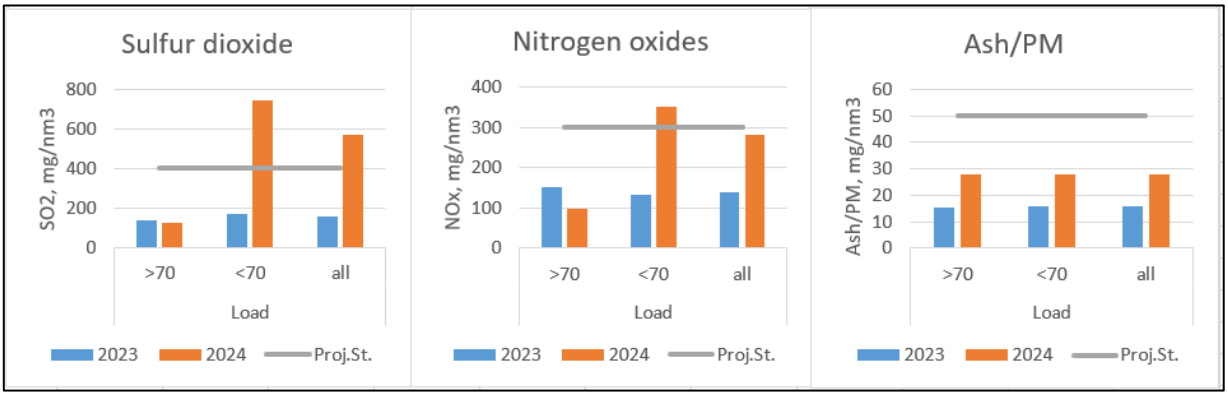


Figure 4-44 CHP Gaseous Emissions for 2023 and 2024 (Loads Below 70%)



The ESIA, and the underlying Environmental and Social Management Plans, anticipated development of the underground project, including the required expansion of the Central Heating Plant to 130 MW. The Project Standard was set acknowledging the remote operating environment, application of Best Available Technology, and with detailed Ground Level Concentration modeling to anticipate any potential negative impacts to ambient air quality.

In late 2021 OT submitted a Notice of Change related to the evaluation of CHP stack emissions (NoC 2021-003). The submitted Category NoC proposed omission of significant data from analysis relative to the Central Heating Plant emission standard (the Project Standard), due primarily to low seasonal operational loads. The project has demonstrated the application of Best Available Technology (BAT) at the Central Heating Plant as discussed in the document *OyuTolgoi -Central Heating Plant Expansion BAT Assessment, Jacobs Engineering, 2017*. With regards to risk assessment the BAT Assessment provides the following summary:

"It is concluded that meeting the Project Emission Standards constitutes the application of BAT under the circumstances faced in Mongolia. The existing abatement technology is appropriate to the local conditions and the fuel and limestone available. In addition to the extremely small ground level concentrations compared to EU standards the high impact areas are small and within the mine complex, there are no local settlements to be affected. In addition the local environment does experience every high levels of dust and so the small particulate emissions from the plant have no additional impact"

The CHP currently meets EU Directive emission limits for 100 – 300 MW facilities as a mean annual value. Due to the very low environmental risk identified in the BAT Assessment, and the clear application of BAT for the region, the IESC reports on mean monthly and annual values for purposes of conformance with the Project Standard. In particular the addition of limestone to the coal feed has greatly reduced SO_2 concentrations by about an order of magnitude.

4.5.3 Greenhouse Gas Accounting and Energy Efficiency

As detailed in the Q3 2023 Audit Report there has been a recent significant change to the accounting of GHG emissions at the OT site. In summary a revised grid emission factor was adopted, being reduced from a former 1.058 t $CO_{2(eq)}$/MW-hour to a 2023 value of 0.613 t $CO_{2(eq)}$/MW-hour. The OT mine receives power supply via an Electric Transmission Line (ETL) connecting with the Inner Mongolian Power Company (IMPC) grid. This grid is a major electricity supplier in northeastern China, and also exports the current continuous power supply to OT. The IMPC grid is very large and has an approximate 100 GW total capacity. In recent years considerable renewable supply has been added and the current IMPC grid is approximately 60% coal and 40% wind/solar power generation. Thus the grid emission factor was adjusted to reflect the lowered emission factor rate, and this exercise had not previously been completed.

To arrive at this grid emission factor OT retained a consultant who advised that the IMPC grid is connected with the overall Chinese power grid, and thus the overall Chinese grid emission factor should be used when calculating OT GHG emissions from the consumption of electricity (i.e., Scope 2 contributions). The International Energy Agency (IEA) issues a country-wide national average for the Chinese grid of 0.613 t $CO_{2(eq)}$/MW-hour, and this is the value now used for OT GHG accounting. The 2023 approximate grid emission factor for the Inner Mongolian Power Grid is 0.75 t $CO_{2(eq)}$/MW-hour, so the adopted country-wide value is lower.

OT has revised its' historic GHG emission contribution based on the IEA guidance. This included revision of GHG reporting data back to the baseline GHG reporting year of 2018 and through Year 2022. These changes are summarized in Table 4-9, along with full year calendar 2023 reporting.

Table 4-9 Revised OT Total GHG Emissions Based on IEA Grid Emission Factor (2018 – 2023)

Year	Prior Grid Emission Factor ($tCO_2(eq)$/MW-hour)	Revised IEA Grid Emission Factor ($tCO_2(eq)$/MW-hour)	Prior reported OT Total GHG Emissions (tCO_2 (eq))	Revised reported OT Total GHG Emissions (tCO_2 (eq))	Percent of prior reported value
2018	1.058	0.642	1,768,044	1,040,283	58.8%
2019		0.634	1,780,871	1,077,278	60.5%
2020		0.639	1,845,476	1,101,227	59.7%
2021		0.626	1,738,426	1,152,887	66.3%
2022		0.618	1,876,781	1,249,430	66.6%
2023 (1)		0.613	N/A	640,219	N/A

(1) The 2023 value reflects OT purchase of Renewable Energy Certificates, lowering reported total GHG emissions

As shown in Table 4-9 the revised emission factor has the effect of reducing OT's total reported GHG emissions by a 33-43% over the time period from 2018 – 2022. This is because most of the GHG emissions from OT are "Scope 2" from the direct consumption of electricity (approximately 75%). The other emissions are largely Scope 1 from the burning of diesel fuel (approximately 20% of generated GHGs) and burning of coal at the CHP (approximately 5% of GHG emissions). In 2022 total revised GHG emissions were 1.25 Mt CO_2 (eq).

For calendar year 2023 OT generated 1.21 Mt of $CO_{2\,(eq).}$ This included Scope 1 emissions of 0.35 Mt $CO_{2\,(eq)}$ and Scope 2 emissions of 0.87 Mt $CO_{2\,(eq)}$. Beginning in 2023 RT has adopted the practice of buying Renewable Energy Certificates (RECs), sourced from China, to offset its 66% ownership interest of OT's emissions. In sum total in year 2023 Rio Tinto has purchased 0.57 Mt $CO_{2\,(eq)}$, which then lowers OT's reported Scope 1 and 2 emissions to approximately 0.64 Mt $CO_{2\,(eq)}$. This equates to approximately 0.80 tons of $CO_{2\,(eq)}$ generated per ton of concentrate produce.

These efforts reflect a wider Rio Tinto commitment to reduce Scope 1 and 2 emissions from 2018 baseline levels 15% by 2025, and 50% by 2030, and overall to be net zero in emissions by Year 2050. To meet these goals Rio Tinto is planning to invest approximately $7.5 billion in decarbonization projects, mostly implemented by 2030. At the OT site the goal is to reduce total GHG emissions by 30% from 2018 baseline levels by Year 2025 and by 50% by year 2030.

Towards this objective OT has identified short, medium, and long-term decarbonization initiatives as described in Table 4-10.

Table 4-10 Oyu Tolgoi Decarbonisation Strategy

Milestone Date	Initiative	Assumptions/Comments
Year 2027	Central Heating Plant Decarbonisation	About 60% of heating draw is for heating air to the underground operation. OT is experimenting with reducing ambient temperatures from 15 – 16 Celsius to 12 – 13 degrees. Long-term electric boilers may be an option
	Light vehicle electrification	OT is investigating the purchase of 20 – 40 light electric vehicles for surface operations
	Open pit electrification	The trial of the 91-ton battery electric haul truck is scheduled to commence in Q1 2025.
	Underground electrification	In short term UG electrification will be focused on ancillary equipment
Year 2030	Renewable Energy Supply (RES)	A study and development work is being undertaken by
	Electrification of Operations	Options analysis completed by this time with full electrification of open pit and underground vehicles
	Obtain 30% of REC's from domestic sources	OT must also respect its Investment Agreement obligation to source power from the Mongolia grid (150 MW). OT is not currently doing this as the Mongolian grid is oversubscribed.
Year 2050	Maximize REC contribution from domestic projects	OT endeavors to be net zero by 2050 using domestic RECs

OT is exploring domestic renewable energy projects to provide power to the site. The peak power demand with underground at full development is approximately 265 MW. There are some severe limitations to this approach, including the overall existing stretched capacity of the Mongolia power grid and the Investment Agreement which prescribes sourcing of power directly from this grid . The overall power grid for Mongolia is approximately 1,475 MW capacity and close to full demand with only about 2% excess capacity. There are significant impediments to OT tying in with existing Mongolian power grid supply.

Regardless OT is investigating a potential renewable energy project of between 180 – 220 MW scale, which would likely consist mostly of wind power generation. There is a team at RTM that is investigating a location near the site for significant generation, with a battery energy storage system, and also connected with the IMPC grid. This system could provide 30% of the energy required to the site by 2030. Progress on this initiative will be reported on in the next Audit Report.

The Project also tracks greenhouse gas emissions relative to concentrate production. In full year 2022 emission efficiencies were previously reported at 3.07 tons $CO_{2(eq)}$/ton of copper concentrate produced

against an estimated forecast of 3.05 tons $CO_{2(eq)}$/unit product. However using revised grid emission factor the revised emission efficiencies were closer to 2.0 tons $CO_{2(eq)}$/ tonnes of copper concentrate in 2022 metrics. For calendar year 2023 OT has adopted reduction in total $CO_{2\ (eq)}$ emissions using the purchase of RECs as previously described. This brings 2023 values down to 0.80 tons $CO_{2(eq)}$/ton of concentrate produced (640 kt $CO_{2\ (eq)}$ generated/ 796 kt of copper concentrate produced).

OT has a long track record of implementing energy efficiency initiatives. These are detailed in prior Audit Reports. OT is required under Mongolia law to submit annual energy efficiency plans to the Energy Regulatory Committee of the Ministry of Energy. To address Scope 1 emissions OT is trialing the use of three Battery Electric Vehicles (BEVs) for surface operations. Comprehensively OT is investigating the replacement of the mine light vehicle fleet (currently about 300 diesel fueled vehicles) with electric vehicles. The trialing of electric heavy equipment for Underground operations is in progress, to understand operational and safety limitations.

As mentioned in prior Audit Reports the replacement of diesel-fueled gensets has already taken place at some locations (e.g., the Explosives Magazine), and the replacement of others is part of ongoing work. OT is also evaluating the operation of the CHP, as 60% of the output from that facility is used to heat air for underground works. The possibility of reducing temperatures from a current 16 degrees Celsius to 12 degrees is under consideration, as well as different options for heating air.

4.6 Noise and Vibration

Noise monitoring at OT is conducted at four continuous ambient air and noise quality monitoring network stations, with one of these being a control station. In rolling 2023-2024 noise monitoring at these stations, which include the location of the TSF, the Waste Management Centre, and at the Manlai camp residential area, returned monitoring results ranging from 23.0 – 49.6 dB, below the residential standard of 55 dB. There have been no noise-related incidents or complaints at the OT mine site.

In Q2 of 2022 a ground vibration survey was completed by the Institute of Astronomy and Geophysics, Mongolian Academy of Science. The study area included in this report covered an area of approximately 2,170 km^2. Field measurements were done at 8 locations over 7 days that captured four blast events at the open pit, four blasts at the underground mine complex, and one blast at the Dugat gravel quarry. Peak particle velocity associated with the blasts were 0.001 - 0.185 mm/sec which is at least an order of magnitude lower than the permissible level of 5 mm/sec. There have been no non-conformances with KPI NV-KPI 01 (Noise and Vibration Incidents) or KPI NV-KPI 02 (Non-compliance with Noise and Vibration Standards). There was one vibration-related community complaint at a location to the east of the site. The nearest habitation in this direction is 6 km from the site MLA boundary, and 10 km from the open pit. OT subsequently conducted a follow-on investigation with vibration levels at the location measured at 500 – 1,000 times below the 5 mm/sec standard. The study[11] showed that vibration levels actually meet this threshold starting from 200 m of the blast epicenter.

4.7 Emergency Preparedness and Response

The general Project strategy to face and manage emergency situations during project operations is defined in the Operations -Phase Emergency Preparedness and Response Plan (EPRP)[12] which provides a high-

[11] Bataa D., Baasanbat Ts., Bilegt B., Uuganbayar B., Dashnyam B., Batzorig O., Tseesuren O., Erdenebayar N. 2023. "Blast-induced vibration assessment on the sensitive receptors". Springer Nature. Atlantis Press. A. Lkhamsuren et al. (eds.), Proceedings of the Second International Conference on Resources and Technology (RESAT 2023), Advances in Engineering Research 226. DOI: 10.2991/978-94-6463-318-4_15

[12] Emergency Preparedness and Response Plan- Doc. No. OT-12-PLN-0011 Version 1.2.

level overview of the procedures and commitments to emergency response and preparedness. The EPRP is supported by response plans and procedures which define specific actions to be undertaken in the event of an emergency situation. These include Spill Response Procedures and Hazard Identification and Risk Management Procedures. Underground health and safety considerations, including emergency preparedness and response, are evaluated in a separate independent assessment conducted by the IE.

OT reports good implementation of integration of the surface Emergency Response Team (ERT) and the underground Mine Rescue Team (MRT). Key activities for 2023 are summarized as follows:

- A Memorandum of Understanding (MoU) was signed with National Emergency Management Agency of Mongolia. In the framework of the MoU the ERT delivered training on use of self-contained breathing apparatus the 37th Firefighting and Rescue Department of Govisumber aimag;
- Emergency response exercises were held at Khanbumbat Airport in cooperation with Khanbumbat Airport team, airport operator, medical team, Khanbogd soum Police, Khanbogd Emergency Management Agency and Khanbogd Soum Hospital;
- The emergency control room restructured for enhanced operational response.
- A CiteOps system is implemented in the Surface Emergency Rescue Team (ERT) and underground ERT as a part of site wide integrated planning system;
- A disaster management plan is developed for Surface and Underground respectively and in the process of approval by National Emergency Management Agency;
- A new contractor (Tavan Ord LLC) was retained to assist with Aircraft Rescue and Firefighting as well as underground and surface rescue;
- The surface ERT completed 36 of 47 scheduled emergency response training scenarios, safely without any incident;
- A Draeger MRV 9000 rescue vehicle (firefighting and rescue truck) was delivered to the site. Operators' training package for the rescue vehicle (firefighting and rescue truck) has been completed. The training schedule has been initiated with the UG ERT staff to train them as Operators;
- Underground Full Deployment evacuation exercise completed in Q4 2023 and underground Semi Deployment evacuation exercise completed in Q2 2023;
- Critical skills training by Surface and Underground ERT training staff maintained and ensuring capability and skill set of Staff and volunteers is maintained.
- The underground ERT conducted a total of 52 continuation classroom trainings, 15 core training and 10 web/ online training sessions for 230 mine rescue volunteers, safely without any incident.

Emergency response improvement plans are ongoing and include sharing experiences and best practices with other Rio Tinto emergency response teams.

4.8 Transport Management

The Transport Management Plan[13] (TMP) addresses safety conditions associated with OT operations including contractors. Aviation safety is addressed in a separate document outside the scope of the plan. The TMP identifies management controls covering road design and safety including measures in support of wildlife protection. In addition to safe vehicle operation management controls are intended to address animal impact hazards to both domestic livestock and wildlife. For example animal passage crossings have been constructed along the OT - Gashuun Sukhait, OT - Khanbogd, and OT - airport roads. The OT Infrastructure and Services Department has responsibility for exercising management control, with the involvement of the Communities department in public area road safety programs. The Environment Team is also heavily involved in transport management including trails of dust suppressant applications on high-traffic roadways. In 2023 the last 18.6 km of route to the GSK border crossing was paved.

In 2023 a total of 1,342 convoys delivered 859,905 tons of concentrate to China. This is an increase from 2022 total of 1,194 convoys delivering 771,566 tons of concentrate. Transport was a challenging issue throughout the COVID-19 pandemic with strict controls at the Chinese Border; however the situation improved substantially towards the end of 2022 with convoy numbers roughly doubling the proceeding year's throughput. In Q2 2023 OT removed COVID-19 transport restrictions

OT LLC has long evaluated alternative routes for concentrate export other than truck transport through the GSK/GMD border crossing. An option of convoy truck surface transportation first to UB, then rail transport from UB to the border crossing at Erlain, has been considered throughout the life of the Project. This option includes 750 km of truck convoy surface transport from OT to UB, 84 km of which is dirt track and 660 km of paved road, ending at the Amagalan Rail Terminal in UB.

The option of using other export options came under increasing relevance with the strict COVID-19 controls at the GSK/GMD border crossing. This export option was reviewed by the Lenders and the IESC and approved in 2021 under NoC 2021-004. In 2021 approximately 20,000 tons of accumulated concentrate at the OT site were exported using this option (just under 3% of the total volume exported that year). In Q1 of 2022 OT utilized a third concentrate export option, this time using surface roads to truck to the trans-Mongolian Zuunbayan Railway Station #5, from where the concentrate then crosses the border at Erlian (the "OT-ZB-EN Route"). In March 2022 a trial shipment of 6,400 tons of copper concentrate (10 lots) was exported on this route using five convoys of 16 single-trailer trucks. This included 286 km of surface truck transport to the railway handling station, of which 175 km is unpaved dirt road and the remaining 111 km is paved.

More recently an option of rail transport of concentrate came under serious consideration. There is already an existing railway line from the nearby Tavan Tolgoi coal mine to a location near the Chinese border. Rail shipments cannot currently directly cross into China as the rail gauge (width) of tracks there is narrow than those used in Mongolia. Thus these external coal shipments are directly unloaded onto the ground, then reloaded onto rail cars with the narrower gauge.

Connection from the OT site to the existing rail line would require a 26 km spur rail line. OT is evaluating this option, including environmental/social assessment and mitigation requirements. A Prefeasibility Study (PFS) has been completed for the rail spur, with a full Feasibility Study scheduled for completion by Q4 2024. OT estimates an approximate 3-year time frame for completion of any rail spur project, which would include sorting through the rail width gauge logistical challenge at the border with China. OT has indicated that approximately 5% of concentrate will be exported using an alternative port of entry in year 2025 (i.e., approximately 70,000 tons). This port of entry will likely be Erlain, with OT concentrate being transferred

[13] Transport Management Plan - Doc. No. OT-10-C3-PLN-0001 Version 1.4.

onto the existing rail line to Tavan Tolgoi. The IESC will continue to report on potential concentrate transport options in subsequent Audit Reports.

Future concentrate delivery is an issue as export rates are projected to increase from the current 860,000 tons to 2 million tons per annum. Approximately 680,000 tons have already been exported thus far in 2024, with a total of approximately 980,000 tons anticipated by the end of the year. With the underground continuing to ramp up year 2025 exports are expected to increase by 40% to 1.4 million tons. This is equivalent to about nine convoys per day, all of which are double-trailers.

There are multiple KPI's identified in the Transport Management Plan. Metrics for outbound service providers, of which there are three, are provided in the prior Q2 2023 Audit Report. In sum total in 2023 there were 47 documented breaches of KPIs (Table 4-11). The IESC views these non-conformances as good indicators of the vigilance that is given to transport management off site.

Table 4-11 2023 Performance of Transport Management Plan KPIs

Key Performance Indicator		Infraction	Number of Infractions
KPI01	Breach of vehicle driving standards	Exceeding speed limits	2
		Workers not wearing PPE	0
		Other driving violations (e.g., use of cellphones, failure to obey traffic rules, etc.)	10
		Minor damage to vehicle or property	3
		Convoy truck crashes into vehicle in front or while waiting in a queue at the border area	3
		Failing to maintain equipment on time or neglecting the scheduled inspection date	2
KPI02	Breach of working at height standards	N/A	0
KPI03	Breach of company's HSE Policy	Breaches of the Fatigue Control Measures	4
		Failure of the operator not following journey management procedures and requirements	4
KPI04	Breach of life saving rules and essential safety practices	Instances of safety-critical control equipment being disabled without approval.	8
		Breaches of the COVID-19 protocols in OT's Green Zone	2
KPI05	Breach of drug and alcohol standard	Employees tested positive for BAC upon arrival at the mine site or during shift work.	3
KPI06	Breach of Code of Behavior	Instances of physical altercations or assaults	1
		Breaches of Code of Behavior (e.g., unauthorized possession of prohibited items)	1
KPI07	Impact to daily shipment schedule	Instances of delays in export shipment due to human error	0
		Instances of delay in export shipments due to driver shortages	1
		Instances of delay in export shipments due to technical failure of a vehicle	3
KPI08	Breach of Local Content Commitment	No non-compliance reported	0

4.9 Biodiversity and Ecological Management

OT manages its impacts on biodiversity and ecosystem services through a Biodiversity Management Plan[14] (BMP) and an Offset Management Plan. Additional management controls are included in other management

[14] Lender commitments were initially included in a Biodiversity Action Plan, now retired, with open actions incorporated in the BMP

plans, including the Land Disturbance Control and Rehabilitation Management Plan (LDCRMP), Pasture and Livelihood Improvement Management Plan (PLIMP) and a further 10 management plans. For ecosystem services an Ecosystem Services Monitoring and Evaluation Plan (ESMEP) identifies key users and beneficiaries for four critical or priority ecosystem services including pasture, biomass fuel, freshwater and water regulation. OT sets out the various management and monitoring measures that are used to maintain flows of these services and the benefits they provide. OT monitors the effectiveness of mitigation measures and tracks progress to deliver net gain and/or no net loss outcomes through a Biodiversity Monitoring and Evaluation Plan (BMEP). In 2020, OT updated the Priority Plant Protection Procedure and ESMP. In 2023 there were updates to the BMP and the BMEP and in 2024 the timeline for the Corrective Action Plan for Priority Plants. All of these changes were made through the Notice of Change (NoC) Procedure.

Field and technical support is provided by the following organizations and consultants: Global Biodiversity Conservation (GBC), Wildlife Conservation Society (WCS), Sustainability East Asia (SEA), Wildlife Science and Conservation Centre (WSCC), Biological Resources Conservation Center (BRCC), Mongolian Bird Conservation Centre (MBCC), Ulzii Environment LLC (UE) and the Professional Biology Society of Mongolia (PBSM), all of which except GBC and SEA are Mongolia-based science institute.

For this field-based audit the IESC and OT staff and consultants met in Mongolia between September 15-18, 2024, with focused meetings on offsets and rehabilitation. The IESC also visited the Hustai National Park under NGO management that is proposed as a model for an offset in the Small Gobi Protected Areas.

The following subsections detail the IESC's current observations and recommendations, organized according to biodiversity values for which OT has committed to achieve a Net Gain. Table 4-12 summarizes the recommendations from the audit.

Table 4-12 Summary of IESC Recommendations for Biodiversity

Recommendation	Relevant Program	Reason	Responsible for Action	Timeline	Milestone
Analyze alternatives to fence openings on TMR	Biodiversity: Khulan and gazelle offset	Efforts to permanently open fence along TMR may be at an impasse with rail authority	Superintendent Biodiversity	**April 2025**	Written report evaluating cost and feasibility of constructing wildlife crossings, as well as feasibility analysis of facilitating TMR crossing at unfenced border with China Written report or presentation from researcher analyzing khulan movement in the Gobi, with updated assessment of the impact of the OT project on khulan movement
Begin support of rangers to enforce core zone grazing restrictions in Small Gobi PAs, and evaluate 3 additional options for rangeland offset	Biodiversity: Rangeland Offset	OT has a level II non-conformance for not offsetting its footprint on rangeland	Superintendent Biodiversity	Options analysis submitted: **August 2024** Draft plan to be submitted by: **March 2025**	Ranger program expanded and draft plan including additional offsetting option(s) developed with KPIs, timeline, budget
Conduct comparative study of rangeland rehabilitation methods	Biodiversity: Land & Rehabilitation	Current biological rehabilitation methods may not be achieving commitments or even outcomes better than technical rehabilitation alone	Superintendent Biodiversity	Original deadline: **April 2024** Extended Deadline: **June 2024** Extended Deadline: **October 2024**	Monitoring is underway, and results to be reviewed by IESC to determine if study design was adequate. If not, new study design to be submitted before next audit.
Implement updated timeline for meeting commitments in the Corrective Action Plan for Priority Plants	Biodiversity: Priority Plants	OT has a level II non-conformance for not meeting commitments for priority plants	Superintendent Biodiversity	See updated timeline in Corrective Action Plan	Projection of where transplanting of priority species will occur over the life of the program and numbers of individuals needed for transplanting to achieve NPI. Propagation and transplanting trials underway for all priority species that will be transplanted.

4.9.1 Asiatic wild ass (khulan) and Goitered gazelle

The proposed offset will remove fencing and decrease habitat fragmentation along the Trans-Mongolia Railway (TMR) from Ulaanbaatar to China. If successful, this would generate a substantial net gain in accessible rangeland habitat (>1 million hectares). Khulan were extirpated from the habitat on the eastern side of the rail line. Removal of the fencing barrier will effectively make unoccupied habitat newly available to the population of khulan currently on the western side of the rail line and will improve access for Mongolian gazelle and Goitered gazelle (as well as reduce gazelles mortality from entanglement in fencing).

OT conducted a pilot with rail authorities to open three segments of fencing, 300, 500 and 700 meters in length, for a total of 1.5 km of openings in the rail line. Three hundred and fifty khulan crossed to the eastern side of the rail line. However, after the pilot study concluded, the gaps were closed and have not been re-opened. Continuation of the fence openings into the future will require a negotiated agreement with rail authorities. The agreement is presently not moving forward due to a proposed requirement by the rail authority that another party (e.g., OT, WCS) assume liability for train accidents caused by collisions with livestock or wildlife resulting from the fence openings. WCS completed a risk assessment of major accidents for the rail authority. However, the rail authority has not been persuaded to proceed. At this time, the project with TMR appears to be at an impasse.

As agreed in the Biodiversity Workshop in January of this year, OT's project to remove fencing along the TMR should continue, if not be expanded to include other rail lines as well engineered crossing solutions such as wildlife overpasses. **The emphasis for offsetting impacts to khulan and gazelle may need to be placed on engineered crossings and efforts to entice khulan to cross the TMR in the unfenced 20 km zone at the border with China. The IESC recommends that OT produce a written report evaluating cost and feasibility of constructing wildlife crossings, as well as feasibility analysis of facilitating TMR crossing at unfenced border with China. If material progress cannot be made, OT will be confronted with the reality that an offset for habitat fragmentation for khulan may not be possible. The IESC also recommends that OT present results on the khulan movement studies, which will improve the understanding of the actual significance of impacts caused by the project. This will inform lenders of the importance of offsetting.** The IESC recommends this be a key topic for the Q2 2025 audit, if not for a special session prior to the audit.

OT's anti-poaching program continues. The combination of ranger interventions and anti-poaching publicity can be assumed to have some effect. Monitoring of social media for the purchase-sale of poached animals and gunshot monitoring at watering holes may provide some indication of changes in poaching. Monitoring of vulture scavenging of carcasses may be added. However, as agreed at the Biodiversity Workshop in January, the anti- poaching project is now categorized as an *additional conservation action* (ACA), rather than an offset, due to the lower perceived risk posed by poaching (khulan and gazelle populations have been increasing since 2013) and the difficulty of quantifying measurable conservation gains attributable to the project.

No new monitoring data were presented at the time of the audit.

4.9.2 Rangeland

OT has a requirement to offset 2,344 Quality Hectares (6,411 ha with a quality of 0.38) of rangeland lost to the mine's development. The original offset concept based on improving rangeland management via a sustainable cashmere commercial venture has proven inviable. In the audit conducted in Q3 2022, the IESC opened a Class III non-conformance and requested that OT develop a new rangeland offset.

An offset options analysis was presented at this audit and discussed with lenders and the IESC. Based on discussion with lenders, OT has committed to provide immediate support to park rangers in the Small Gobi Special Protection Areas to improve control of illegal livestock grazing in the core zones and limited use areas. This opportunity builds on OT's existing work with rangers in and around the protected area to improve patrolling and enforcement of poaching. OT will expand the scope of this work to include enforcement of livestock herding restrictions within Small Gobi Protection Areas.

OT will also evaluate three additional opportunities for expanding this rangeland offset:

1. OT will evaluate the feasibility of supporting NGO management of Small Gobi Special Protection Areas. Although OT will expand its support of rangers in the protected areas, there may be limits to their effectiveness. It is possible that NGO management of the protected area could be more effective. It is not certain that the government will accept a proposal for NGO management of the area, and if it does how long it would take to make this change. If it is later determined that Option 1 is working adequately, OT may choose not to pursue this option.

2. OT will evaluate the feasibility of supporting UNESCO listing of Small Gobi Special Protection Areas as Natural World Heritage Site. At present there is a collaborative initiative between NGOs and government in progress to achieve this goal. OT could engage with the relevant stakeholders and provide financial and technical support to facilitate the process. It is assumed that better management of the protected areas resulting from Options 1 and 2 would also be supportive of UNESCO designation.

3. OT, via Rio Tinto Mongolia, will evaluate the feasibility of supporting UNESCO listing of Khanbogd Massif as a GeoPark (at present there is an initiative in progress to achieve this goal) and OT could provide financial and technical assistance for management of the area, including expansion of the GeoPark's management objectives to include conservation of rangeland, including reduction of livestock grazing pressure on rangeland in the park.

The IESC recommends that OT prepare a new rangeland offset plan with detail of how the expanded ranger activity to enforce herding regulations in core areas will be implemented and monitored. The written plan should detail the mechanics of how OT will support the expansion of this scope and how it will be measured using SMART and program KPIs. It should also include feasible aspects of the other three opportunities listed above, along with budget, key performance indicators and monitoring approach (e.g., METT for protected area management and rangeland quality assessment).

Based on progress in identifying a new rangeland offset approach, the non-conformance has been reduced to Class II.

In addition to the offset, OT is actively rehabilitating rangeland that it has impacted. OT has initiated biological rehabilitation outside the mine lease. It has also established a well-functioning compost production facility to support rehabilitation planting and is conducting trials on the optimal blend of compost and soil during planting. Pilots are also underway on TSF rehabilitation, including experiments with a variety of soil cover options to manage for a deficit of topsoil for full site rehabilitation.

In the Q3 2023 audit, the IESC recommended that OT revisit its 2018 comparative study of rehabilitation methods (*Boldgiv et al*). It may be useful to develop and implement experiments that monitor control sites where only technical rehabilitation has been performed to determine how effective biological rehabilitation is relative to a "no biological intervention" scenario where natural processes, such as the introduction of windblown seeds, may be sufficient for natural regeneration of rangeland vegetation. It is important that the experimental design have adequate technical design, especially with regard to statistical analysis. The IESC requested that a study design be submitted for Lender review by Q2 2024. OT did not do this and has nevertheless initiated further monitoring work without prior IESC review of the methods. The documents submitted at the time of this audit from the contractor are lacking technical description of methods. OT should

submit the results of this work to the IESC in October 2024. If the study design is not satisfactory, the IESC recommends that OT submit a new study design before the next audit.

4.9.3 Riparian Elms

Potential predicted negative impact to elm trees from the OT Undai River Diversion project has not occurred, and hydrologic monitoring indicates that the mechanism for that predicted impact is not present. Measured depth to groundwater values in the Undai River alluvial system have slightly increased since construction of the Diversion. This is likely due to the current bypassing of faults in the Undai River channel which previously "leaked" flow and resulted in loss from the system. OT has monitored and documented the elm tree status to date.

As agreed in the Biodiversity Workshop in January, OT will re-allocate elm monitoring resources to elm conservation and restoration, within and outside the Mine Lease Area. This includes two core elements: 1) planting and care of >21 thousand elm saplings (with an expected survival rate of 80% after three years) within the mine lease area; and 2) protection with fencing of 7.6 hectares of elm regeneration along the Undai riverbed outside the mine lease area. In doing so, OT will also compensate for the limited impact on mature elm trees within the MLA. OT has submitted to Lenders a new plan for elm conservation, with a Notice of Change.

4.9.4 Saxaul Forest

As agreed in the Biodiversity Workshop in January 2024, the predicted indirect (induced) impact on saxaul trees (e.g., collection for fuelwood) is not likely, but there is also no viable approach for directly measuring whether impacts to saxaul have occurred or not. Continued direct monitoring of saxaul forests is therefore not needed, but measurement of domestic saxual wood use will continue to determine if demand for fuelwood increases in the future. This will be the updated in the BMEP. The direct impact of OT on saxaul forests did occur as predicted and there remains a residual impact of -15.5 quality-hectares. This will be compensated and monitored in the "100M tree program" and as part of the rangeland rehabilitation program. OT presented current work in saxual rehabilitation in small fenced lots to prevent browse by livestock.

4.9.5 Priority Plants

OT has made progress on challenging aspects of priority plant conservation, including the propagation of *Spongiocarpella grubovii*. It is also running a successful nursery operation close to the site where these and other species are prepared for eventual transplanting in rehabilitation areas or translocation to other appropriate habitats. OT is now working with specialists to develop laboratory propagation techniques for 3 additional species.

Nevertheless, time-bound targets for priority plant conservation that were agreed with lenders are not being met. The IESC previously opened a non-conformance in 2018 for insufficient progress in mitigating impacts to priority plant species for which the project area is Critical Habitat. The IESC closed the non-conformance in 2020 based on the development of a Priority Plant Corrective Action Plan. However, commitments in the Priority Plants Corrective Action Plan were not being met and the IESC opened a new non-conformance. OT agreed to submit an updated timeline in a NOC. This was done and approved.

However, OT is now behind schedule in meeting the updated timeline. OT must accelerate its work in a) conducting propagation and transplanting trials for priority species, b) planning the location of transplanting through 2032, and c) determining the number of seedlings needed for transplanting, by year, through 2032.

This remains a Class II non-conformance until tangible progress is made in adherence with the timeline.

4.9.6 Short-toed Snake Eagle

OT conveyed that monitoring this season detected two active short-toed snake eagle nests, and evidence that others may also be active. The 2024 field report was not yet available for review at the time of the audit.

4.9.7 Houbara bustard

As noted in previous audit reports, OT has fulfilled its commitments to lenders for this species. Impacts are compensated out-of-kind via an offset that reduces transmission line mortality for other bird species (esp. Saker Falcon). In addition, OT also promoted the passage of a national design standard for low-voltage transmission lines that will mitigate the risk of electrocution to birds for new low-voltage transmission lines constructed in Mongolia. WSC reports that this standard has been followed for projects where they have been engaged with authorities (sufficient for OT to claim NPI), but that it has not been implemented in others.

4.9.8 Biodiversity Monitoring and Evaluation Plan Update

A series of changes in biodiversity monitoring were agreed in the Biodiversity Workshop in January, including for ephemeral lakes and pools, elm trees, granite outcrop floral community, saxaul trees, priority birds, priority plants, and rangeland. OT has updated the BMEP and issued a Notice of Change.

4.9.9 Conclusions and Recommendations

The IESC has the following conclusions and recommendations on the biodiversity program.

1. The emphasis for offsetting impacts to khulan and gazelle may need to be placed on engineered crossings and efforts to entice khulan to cross the TMR in the unfenced 20 km zone at the border with China. The IESC recommends that OT produce a written report evaluating cost and feasibility of constructing wildlife crossings, as well as feasibility analysis of facilitating TMR crossing at the unfenced border with China. If material progress cannot be made, OT will be confronted with the reality that an offset for habitat fragmentation for khulan may not be possible. The IESC also recommends that OT present results on the khulan movement studies, which will improve the understanding of the actual significance of impacts caused by the project. This will inform lenders of the importance of offsetting. The IESC recommends this be a key topic for the Spring audit, if not for a special session prior to the audit.

2. OT will provide immediate support to park rangers in the Small Gobi Special Protection Areas to improve control of illegal livestock grazing in the core zones and limited use areas. OT will also evaluate three additional opportunities for expanding this rangeland offset. OT will develop a draft offset plan with KPIs, timeline, and budget. Based on progress in identifying a new rangeland offset approach, the non-conformance has been reduced to Class II.

3. The IESC requested that a study design for evaluating rehabilitation be submitted for lender review by April 2024. OT did not do this and has nevertheless initiated further monitoring work without prior IESC review of the methods. The documents submitted at the time of this audit are lacking technical description of methods. OT should submit the results of this work to the IESC in October 2024. If the study design is not satisfactory, the IESC recommends that OT submit a new study design before the next audit.

4. OT has submitted to Lenders a new plan for elm conservation.

5. OT is behind schedule in meeting its updated timeline for priority plant conservation. OT must accelerate its work in: a) conducting propagation and transplanting trials for priority species, b) planning the location of transplanting through 2032, and c) determining the number of seedlings needed for transplanting, by year through 2032. This remains a Class III non-conformance until tangible progress is made in adherence with the timeline.

6. OT has updated the BMEP via the Notice of Change procedure.

5 Social Performance

Social management plans guiding the work of the Communities and Social Performance (CSP) team are the Community Health, Safety and Security Management Plan (CHSSMP); Stakeholder Engagement Plan (SEP); Pasture and Livelihood Improvement Management Plan (PLIMP); and Resettlement Action Plan (RAP). The OT People and Organisation Team is responsible for the implementation of the Labour Management Plan and associated documentation, while the Contractor Engagement team is responsible for the Contractor Management Framework Procedure and supporting documents.

At the time of this audit, as identified in the previous audit, the In-migration Management Plan (IMP) is due for review; also identified is the need to ensure this connects with the Town Transformation (TT) and Employee Accommodation project. The RAP review also remains pending, with the intent to ensure alignment with the Subsidence Zone Supplementary ESIA. The SEP is under revision, planned for internal review in October and to be finalised before the end of 2024.

Organizational changes have occurred since the previous audit. CSP is now integrated with Health, Safety, Environment and Security (HSES). It is understood that efforts to fully operationalise this arrangement continue, including on ensuring the new structure best supports identification and avoidance of CSP risks.

Demands on the CSP team are increasing. Growth Projects within OT are progressing, managed through the Mongolia Development Proejct Office (MDPO). These projects include significant CSP resources and efforts, including into the Underground Subsidence, Railway, Heap Leaching, Hugo North Lift 2 and Link Road construction projects. CSP are active participants in development of each of these projects to ensure early engagement and to seek to avoid harm to communities. Further, compliance with the Rio Tinto CSP Standard[15] is now required and subject to internal audit, and the RT '3 Line of Defence' business compliance program is in place, requiring internal, group level and external assurance.

5.1 Labour and Working Conditions

The OT Investment Agreement specifies requirements for employment of Mongolian nationals. The Labour MP[16] applies to all OT activities including contractors. Implementation by contractors is addressed in the Contractor Management Framework[17]. Issues addressed through the Labour MP include:

- targets for employment of Mongolian nationals;
- ensuring access to training for South Gobi residents;
- recruitment processes;
- promotion of women in employment;
- rosters/working hours;
- employment centres and recruitment officers;
- salary benchmarking;
- retrenchment and demobilisation; and
- maintaining accommodation standards.

[15] CSP Standard, CSP-B-001, July 2022
[16] HR-10-PLN-0001-E, v.1.5
[17] OT-07-PRC-0001-E, v.2.0

A range of other social issues that are drawn from ESIA commitments are presented in labour-related MPs including: targets for national, regional and local content of Project procurement (In-migration MP); requirements of contractors to meet HR/HSE standards (Contractor Management Framework); and Identification of Mongolian suppliers and service providers available regionally and locally (Supplier development policy.

5.1.1 Recruitment and Workforce

As at 31 July 2024, OT was continuing to meet its labour management KPIs as shown in Table 5-1. The total workforce was 19,687 as at 31 July 2024, of whom 4,623 are employed by OT LLC and 15,064 are contractors from 190 companies. A total of 95.62% of the total workforce, and 97.27% of the OT LLC workforce, are Mongolian nationals. For OT LLC, more than 90% of leadership roles are held by Mongolian nationals (723 individuals) and 2,533 women are employed. As at 30 June 2024, 2,749 employees (almost 60%) work a 14 day on-14 day off roster.

Table 5-1 Labour Management KPIs (Q2 2024)

			As of July 31, 2024
Workforce Commitments under Investment Agreement	Total number of Oyu Tolgoi employees (inclusive of OT LLC and Contractor Company employees)		19687
		• Nationals	18824
		• Expatriates	863
	National, Expatriate employee's ratio		95.62% / 4.38%
	Total number of Contractor companies		190
Not less than 90% of the Investor's employee will be citizen of Mongolia	Total of OT LLC		4623
		• Nationals	4497 (97.27%)
		• Expatriates	126 (2.73%)
For mining and mining related work not less than 75 % of entities employees will be citizen of Mongolia	Subtotal of 75/25 Contractor Companies		10774
		• Nationals	10557 (97.99%)
		• Expatriates	217 (2.01%)
For construction work not less than 60 % of entities employees will be citizen of Mongolia	Subtotal of 60/40 Contractor Companies		4290
		• Nationals	3770 (87.88%)
		• Expatriates	520 (12.12%)
Leadership roles	Total leadership roles of OT LLC		785
		• Nationals	723 (92.10%)
		• Expatriates	64 (7.90%)
Gender Information	Total number of Oyu Tolgoi employees (Inclusive of OT LLC and Contractor Company employees)		19687
	Total Contractor Company employees		15064
		• Male	12531 (83.19%)
		• Female	2533 (16.81%)
	Total employees of OT LLC		4623
		• Male	3552 (76.83%)
		• Female	1071 (23.17%)

As at 30 June 2024, there were 973 OT LLC employees and 3,313 contractors from Umnugobi. This is a total of 4,286 employees, and 25% of the total site-based workforce. Most are from Dalanzadgad (1,980 employees) and KB (1,797 employees). Most are operators (475) or tradespeople (351) or in leadership roles (63 people).

The number of employees from Umnugobi increased by 12 in 2024 YTD[18]. Various activities have been carried out to support further aimag-based recruitment, including CV and interview skills trainings in partner soums. The talent pipeline is further developing, with 22 Umnugobi trainees and apprentices converted to permanent roles in the concentrator and other teams.

OT has met its target for employment of people with disabilities for 2024, with 1% (50 people) of employees having a disability. The target out to 2030 is 4%. A Diversity, Equity and Inclusion (DEI) internal working group has been established and has drafted a 5-year roadmap and high-level action plan. Site facilities assessment and a review of site-based roles medical requirements are planned to be conducted in 2025.

5.1.2 Management of Worker Relations

Worker relations at OT are dynamic with the current influences of changes to the labour law, changes to wage calculations, the emergence of a second Trade Union at site, worker strike action, rulings by the Supreme Court of Mongolia regarding overtime pay and Collective Agreement negotiations. Previous audit reports describe the changes to the Labour Law and the introduction of the even time roster. Updates on issues are described below, informed by data provided by OT as well as interviews held by the IESC during the site visit. Interviews were conducted with the OT human resources team, a sample of site-based OT LLC employees, as well as representatives of the OT Trade Union Committee (OTTUC), the OT Local Employees' Trade Union (LETU), and the Mongolian "Energy, Geology, and Mining" Trade Union (MEGM).

Health and Safety of long roster

The introduction of the long roster[19] has meant that some employees are carrying out other paid work activities during their rostered days off. This is reflected both by OT and in some of the interviews carried out with long roster workers during this audit. Workers expressed financial stresses as a driver to take up other work while OT recognizes this as a potential fatigue risk. The IESC notes that the OT Fatigue Management Guideline[20] identifies shared responsibilities between business leaders and individuals for ensuring that fatigue does not affect their own or others' health and safety. **The IESC recommends that OT investigate further the nature and extent of this issue, the risks it raises and appropriate measures to apply to ensure health and safety impacts are mitigated.**

Average Salary Rate (ASR) calculations

Changes to the Labor Law of Mongolia came into effect from 1 January 2022. Amendments to the Law included the introduction of a long roster for site-based employees, with a maximum of 14 days on and 14 days off. Implementation of the even time roster meant that the average number of working days per month is reduced by 25%. Salary adjustments were also provided for through subsequent Procedures issued by the Government. Adjustments were made to the calculation of overtime and nightshift allowances, resulting in a calculation based on a 3-month average salary rate (ASR) instead of a base salary. The Procedure on Determining an Average Salary describes that the average working hours per month is to be 168 hours (regardless of whether employees are office-based, a shift employee or a long roster employee), and that overtime is paid where working hours exceeds 168 hours per month. (Previously, overtime was paid after 8 hours per day). Further, the ASR provided for under the Labour Law of Mongolia allows for employers to determine which allowances and benefits can be included within the calculation.

Information comparing calculations before and after the Labour Law changes were provided by OT, as shown in Table 5-2:

[18] The number of UM employees increase from 941 to 973 between 31 December 2023 and 30 June 2024, with 20 employees from the aimag terminated in 2024 YTD

[19] Site-based employees working 14 days on – 14 days off roster

[20] OT-10-H4-GDL-0001-E, v1.2, s.3

Table 5-2: Comparison of overtime calculations, before and after January 2022

	Before Jan 2022	From Jan 2022
Roster	14 days on / 7 days off	14 days on / 14 days off
Average workday per month	21.2	15.2
Base salary	Base salary is based on 168 hours per month	Base salary is based on 112 hours per month
Over time	Daily work: 8 normal hours Plus 4 overtime hours	Greater than 168 hours per month is counted as over time
Overtime (OT) payment	(base hourly rate x 1.5 x OT)	(average hourly rate x 1.5 x OT)
Notes		Where a long roster employee works for 12 hours per day, the first 8 hours are normal hours and the 4 hours thereafter will be considered as overtime. There will be 56 hours overtime for 14 workdays, and it will be considered as time in lieu to be provided as a part of the 14 days the employee is rostered off. Note: 56 hours of overtime divided by 8 normal working hours is 7 days; these 7 days will be considered as time in lieu of 14 days off.
		Where the working hours of an employee exceeds 168 hours per month, an overtime allowance shall be paid to an employee for such period. Note: the monthly average workdays for a long roster employee is 15.2 days and if an employee works 12 hours per day, the employee will work 15.2x12=182.4 hours per month. • For work greater than 169 hours, an overtime allowance shall be paid to an employee for the 14.4 (=182.4-168) hours. • For work less than 168 hours, the overtime allowance shall not be paid. For example: if an employee works 11 per day, the employee's monthly work hours shall be 15.2x11=167.2 hours, which is below the overtime threshold of 168 hours).

OT reported that since the Labour Law change, some workers have higher earnings, while about 50% of site-based employees have on average a 10-25% decrease on all earnings.

Interviewees during the IESC site visit confirmed that OT People and Organisation team had provided tools to try to understand the changes, for example through briefings with supervisors, written clarifications and an online calculator. However, the consistent message from interviews with employee across all levels was that the calculation of the ASR and thus, salaries, is not transparent. The broad experience reported by employees was that the lack of transparency means that salary calculations are not clear, which resulted in an inability to predict their salaries and so manage their personal/household budgets. One employee reflected with the IESC that: *"all other aspects of OT are so well documented, except on this [salary calculations]. All other policies and procedures are stamped, signed and disclosed, but this one isn't".*

Interviewees described trying to use the tools (e.g. online HR portal) that had been provided to calculate their expected monthly salary and generating significantly different values compared to actual amounts received. Further, many employees recognized that the company was experiencing rising labour costs, and appreciated that reductions in salaries had been carried out in phases commencing from March 2024 as was announced by OT, but that it was not clear which components of the salary were decreasing or why (for example, whether fluctuations were due to the influence of taking leave, working day shift vs night shift, receiving other allowances, or something else).

OT's Labour MP documents its commitment to implement equitable and transparent remuneration systems[21]; the IESC observes that the current arrangements on salary calculation and disclosure do not meet this commitment. **The IESC recommends that the calculation of salaries, including the Average Salary Rate and the employers' discretionary items within the calculation, are disclosed in a manner that is readily understood by employees, and that OT reviews how salaries are calculated, with dual objectives of simplifying calculations and achieving predictability for workers in their earnings.** It may be appropriate to **consider these commitments as part of the current Collective Agreement negotiations**.

Supreme Court ruling regarding even time roster

The IESC has previously reported on the Supreme Court case regarding overtime pay. In February 2023, 83 employees filed a complaint about overtime with OT's Labor Rights Dispute Settlement Commission. The dispute is about whether overtime payment for working more than 8 hours a day should be paid or provided as time in lieu during the 14 days off period for long roster employees with a monthly base salary. The dispute has escalated through the court system such that currently, the Supreme Court has conclusively settled the claims filed by 4 employees, requiring the payment of overtime. A further 36 disputes have not been resolved by the court of first instance, and 10 disputes are pending in the Supreme Court. OT has reported that they are working to disburse the overtime payments due to the four claimants in accordance with their court resolutions. The IESC observes that the ruling has the potential to influence payments for all long roster employees, including through current Collective Agreement negotiations.

Strike action

Strike action/ temporary stand down has occurred twice: in May and July 2024. OT reports that the Ministry of Labour and Social Protection as well as the Confederation of Mongolian Trade Unions confirmed the illegality of the strike held in July, and that it had reminded employees that while employees have a right to unionize, any illegal strike would have consequences.

Further information was reported to the IESC during the site visit, that following strike action, OT initiated an internal investigation to assess allegations of bullying and harassment to coerce some employees into participating in the strike. OT describes that the investigation was thorough and impartial and carried out in line with OT procedures to understand each person's involvement in the strike. The investigation resulted in feedback to the person's manager on whether any disciplinary action would be taken. A total of 316 verbal discussions/interviews were conducted; one person received a written warning and one was terminated[22]. The IESC understands that no grievances have been received about either of those cases, either through myVoice or direct to the OTTUC. Employees described to the IESC that investigation interviews had been conducted one-to-one with those employees that had participated in the strike action, and that they were not informed that they had the right to have a support person present at the meetings. OT's Disciplinary Procedure provides for the presence of a support person for interviewees, who is an OT employee who can provide emotional support and act as an observer to interviews[23]. The IESC notes that the presence of support people intend to create a less intimidating environment for interviewees, and to ensure that the interview is conducted in a fair manner. The IESC observes that, in the sample of interviews that were carried out during this audit, and from the information in response from OT, it appears that OT did not follow its disciplinary procedures. **The IESC recommends that OT provide a detailed explanation to the IESC**

[21] OT Labour MP, HR-10-PLN-0001-E, s5.1.1(3).
[22] For repeated breach of employment agreement conditions on behaviour
[23] OT-HR-C-H1.1: Discipline Procedure, s.16. Employee Support

and Lenders of the processes followed in conducting its investigation, including a specific response on whether workers have the right to be accompanied by a representative.

Trade Unions at OT

The IESC heard mixed reports from employees about whether the trade unions (TUs) were sufficiently sharing information regarding changes to salaries. Employees interviewed as part of this audit were a mix of members of each of the TUs, or not at all. In all cases, those that are TU members reported that their membership dues were being transferred to the relevant TU, either transferred through employer deduction or via a personal bank transfer.

The previous IESC report noted concerns around the legal status of the LETU and its ability to enter into negotiations on a Collective Agreement. Mixed messages were received regarding this matter during the site visit; the LETU confirms it is fully registered[24], OT described that regardless of status, it is negotiating in good faith with the LETU.

Following earlier discussions in March/April between OT LLC and the OTTUC, negotiations for a new Collective Agreement between the LETU, OTTUC and OT LLC commenced in August. The IESC observes that while the two TUs have differing baseline positions and represent regional vs specialization perspectives, they have agreed to enter into Collective Agreement negotiations together with OT. Joint communications from all parties have been prepared and circulated to all staff at the conclusion of key negotiations, as follows in Table 5-3.

Table 5-3: All staff communications on Collective Agreement negotiations (Aug-Sept 2024)

Date of Circulation	Key Content of Disclosure to all OT LLC staff
1 August 2024	Collective agreement negotiations commenced. The initial meeting included an exchange of views on expected outcomes of negotiations, and agreed to adjourn negotiations until 23 August whereupon the draft Collective Agreement from TUs will be discussed.
27 August 2024	Negotiations reconvened on 23 August with all parties attending a joint training session on effective conduct of negotiations. On 26 and 27 August, negotiation 'ground rules' were discussed
3 September 2024	Agreed on the use and sharing of information that will be presented by parties as part of the negotiations. Agreed to include the Umnugobi Aimag TU (UATU) and the Mongolian 'Energy, Geology and Mining TU (MEGM) in negotiations as observers and to provide advisory support.
6 September 2024	TUs presented a proposal comprising 11 sections and 168 provisions; a clarification session was held on various aspects of the proposal. The proposal focuses on improving working conditions and addressing employee social issues.
12 September 2024	Key information was reviewed on the company's business outlook, current financial and operational status. Details were presented on: salary calculation methods; time sheet management system; annual performance bonuses; work performance evaluations; progress on labour condition assessments. Information on the Collective Agreement negotiations are available on the homepage of www.otca.mn and the OT Info app, which includes a Q&A section.
19 September 2024	Negotiation focused on defining the duration and scope of the new Collective Agreement. It was agreed: to revisit the duration of the agreement; that the agreement would apply to all employees; that provisions specific to TU members could be subject to collaboration.

[24] The IESC sighted the registration certificate of the LETU, effective date 27 March 2024

At the time of the site visit, all parties concurred that they sought to conclude Collective Agreement negotiations by the end of October 2024. Trade Unions described that should negotiations fail, legally permissible follow up action would be considered: mediation, arbitration or strike.

The IESC recognizes the positive intent of all parties to reach agreement promptly and fairly, and anticipates follow up on this matter as it progresses.

Grievances

For the period August 2023 to 31 July 2024, there were 231 grievances reported through the worker grievance reporting system myVoice as shown in Figure 5-2. Due to changes that are being made in how myVoice data is handled with the business conduct office, comparison to 2023 data is not possible, and reports from contractors are not separated from OT LLC entries (i.e. some of the 231 cases in the table below may be from contractor workers about contractor entities, not only OT). Further, timeframe for resolution of grievances cannot be queried. The IESC will follow up in detail at the next audit, once the new data management system is in place, on worker grievance data tracking, reporting and actioning. The number of closed reports that have been referred to local subject matter experts (SME) for resolution are shown in the following table (the value is in black below the total for each case class); around one third to one half are referred.

Table 5-4 Grievances received in MyVoice (August 2023 to 31 July 2024)

Type (open/closed/referred complaints)	Number of reports
Business integrity	
Open	8
Closed	33
Total	41
Including referred to local SME	12
Finance	
Open	1
Total	1
Health Safety & Environment	
Closed	16
Total	16
Including referred to local SME	9
Information security	
Open	1
Closed	2
Total	3
Legal	
Closed	1
Total	1
Including referred to local SME	1
Personnel	
Open	16
Closed	143
Total	159
Including referred to local SME	93
Other	
Open	1
Closed	9
Total	10
Including referred to local SME	4

Everyday Respect program

In August 2024, Elizabeth Broderick & Co returned to OT to conduct an update survey on the implementation of the Everyday Respect report recommendations. The update visit included engagement with employees, site tours, and senior leadership and Board engagement. Listening sessions, focus group discussions, voluntary and formal resource groups were held. The progress report is anticipated to be completed in November 2024.

5.1.3 Workers Accommodation

The previous IESC audits have discussed OT's target for workforce accommodation of a 50% residential workforce by 2035. At this time, OT has been working further on designing a framework to achieve a sustainable shift to a hybrid residential/FIFO workforce, and providing industry-leading FIFO accommodation. OT seeks to achieve these objectives through: preparing KB to absorb a residential workforce; enhancing the value proposition for employees to move to and stay in KB; and to solve OT's accommodation needs.

OT continues to have a shortage of FIFO accommodation on site and as at the time of the audit, was contemplating expansion of the use of temporary, offsite rental apartments. As this falls outside the worker accommodation envisaged through the ESIA, the IESC requested that OT prepare a Notice of Change (NOC). The IESC reviewed and rejected the first NOC on this topic (NoC 2024 – 003 submitted in August 2024). The revised NOC is now under review by the IESC. The initial NOC described that onsite worker accommodation is over capacity, and that with ~95% of the workforce on FIFO, there are 400 people hoteling and 800 people sharing 3 to a room per shift. OT has made a commitment to provide one room per person per shift under the 'Everyday Respect' program. While permanent site-based accommodation plans have not yet been established, OT indicated that a study is in progress this. The use of new, KB-based, temporary rental accommodation seeks to bridge the gap between current capacity and construction of a new, permanent, on-site worker accommodation facility. KB rental apartments are currently in use (capacity for 120 workers), but timeframes for their use has been exceeded. This new phase of KB rental apartments would provide an additional 900 bedrooms.

The IESC provided guidance in response to the NOC with observations that: the code of conduct for use of the 900-bed apartments should be informed by lessons learned with the 120-bed apartment facilities; the timeframe for use of the apartments should be clarified; further work on an E&S assessment and risk mitigation is required, including updates with key stakeholders, and evidence of consideration of waste and water management. There are no objections to the use of new, modern accommodation facilities for the comfort and safety of workers accommodated there.

While it was not the subject of the NOC, the KB Town Transformation (TT) program provides context for the solutions to this specific accommodation gap, as described above. The governance arrangements for the TT-Worker Accommodation program has been updated, with the CEO now program sponsor. The IESC notes that offsite worker accommodation has historically struggled to have a clear owner; leadership at the most senior level is commended. While the current governance arrangements include a range of internal stakeholders, OT will need to ensure that sufficient resources are dedicated to delivery of the program and that resources are well positioned to identify and avoid harmful impacts to communities and workers. For example, Catalyst Fund, as an external entity, is not responsible for OT's risk mitigation activities. Governance structures should also ensure that the TT team has sufficient access to practical guidance for day to day coordination and decision making, as well as access to input from the relevant RT Area of Expertise.

The IESC recommends that a separate NOC be developed about the roadmap and strategy for the TT program. This should provide, inter alia, an update on workforce projection and what this means for long term worker housing; the IESC is aware that the introduction of a 4th panel is one driver of an expanded workforce. **OT's E&S commitments, responsibilities, governance and assurance processes in supporting KB development should also be stated, including via the Catalyst Fund as a vehicle for OT's contribution. These issues should inform the overall approach to worker housing and if appropriate, any follow up actions that will meet OT's ESAP commitments on worker accommodation**.

5.2 Resettlement and Livelihood Restoration

The OT Resettlement Action Plan (RAP) guides resettlement, compensation and livelihoods improvement. The RAP covers both physical (10 households signed off Resettlement Agreements in 2004) and economical displacement (92 households signed off Compensation Agreements in 2011). Discussion regarding the Cooperation Agreement and other partnerships is presented in Section 5.4.

5.2.1 Economically Displaced Herders

The IESC was provided with a copy of the RAP Completion Audit that has been prepared by the consultant team[25]. The Completion Audit report describes the methodology applied, relevant history and benchmarks for the work, and findings and recommended Corrective Actions to close out identified gaps.

Key findings are that all compensation and livelihood support measures have been met, and that OT has complied with commitments, national legislation and international standards in delivery these measures. Support to 11 households through the tailored Household Livelihood Improvement Plans (HLIPs) were confirmed as delivered through to 2023; the Completion Audit assessed whether HLIPs had achieved livelihoods benefits, with mixed reviews on how successful implementation has been, specifically, HLIPs execution and adequacy of oversight and monitoring. The economic wellbeing of 10 of the 11 households has improved; the economic wellbeing of one household has declined for reasons not attributable to OT. Households that had formerly been dependent on water deliveries from OT were found to have ended their dependence on OT for water through establishment of wells.

On other wellbeing indicators, the Completion Audit found an increase in possessions and equipment of households, particularly an increase in numbers of solar panels and cellphones, and that drinking and livestock water are relatively close and good or moderate availability and quality. Social ills reported related to concerns about intensive mining-related traffic potentially impacting herders' households and livestock.

The annual expenditure reported by interviewed households is higher than national, urban and rural averages, the largest portion of which is allocated to real estate, reflective of an increase in movement of some household members to soum centres for business/education/wage earning opportunities.

Complaints received about resettlement to the TPC have taken on average 35.5 days to resolve, depending on complexity of the issues raised, and of 63 raised since 2018, only 2 have been resolved/closed but 'not satisfied' for the complainant. During interviews, survey participants expressed concerns about the grievance mechanism's lack of transparency (specifically, confidentiality rules) and involvement of TPC, which interviewees reported as restricting direct communication with OT and slowing grievance resolution processes. Numbers of grievances raised have been decreasing since 2011.

Findings from interviews on household lifestyle and culture included that a more settled lifestyle in KB soum has brought more individuals from diverse areas and backgrounds to the soum centre, highlighting the importance of collaborative efforts between government, citizens and business. The IESC notes that the TPC is identified as being expected to be instrumental in enhancing this cooperation and to achieve more impactful results - despite its focus on rural herder households.

Recommendations / corrective actions from the Completion Audit are centred on six main themes:

1. review and strengthening of community engagement;

[25] OT Completion Audit for Economic Displacement, Sustainability/IRIM, September 2024

2. updating/streamlining the grievance redress mechanism, including reviewing where TPC has involvement in the process;
3. HLIPs implementation reviews with affected households;
4. conclusion of HLIPs with all 11 households;
5. conclusion of RAP Compensation Agreements with all 5 water-dependent households; and,
6. expansion of community investment programs through the RED program.

The IESC notes these recommended Corrective Actions and the roadmap for their execution, and additionally reflects to OT that these actions can be readily reflected into the updates currently underway of specific SMPs. While stakeholders such as TPC have an interest in their completion, the RAP is a commitment of OT, thus that the Completion Audit has been conducted can be reflected into the update of the RAP, and, to ensure that items are given due consideration by an appropriate owner within OT, recommends that items 1 and 2 can be addressed through the forthcoming SEP revision; items 3, 4 and 5 into the RAP revision; and 6 can be contemplated within the emerging RED strategy. The IESC recognises items such as 2 will require engagement and participation of TPC for mutual consideration; if a change to the grievance process is agreed, the GRM will then require a subsequent update. During the IESC's audit, OT described that closure of the RAP will include a celebration to mark the end of 15 years of specific collaboration with the 89 affected households, while recognising work on Sustainable Livelihoods Projects (SLPs) and promotion of 'one soum' through forthcoming RED programs for all KB soum herders, which also aligns with actions identified in the Completion Audit. **The IESC is satisfied that OT has met its commitment to conduct this Completion Audit and can close the non-conformance on this item**.

The SLPs are ongoing, with the participation of 79 households. The more established cooperatives (Agribusiness – 9 households in the cooperative shareholding; Sewing business – 12 households; Angus breeding – 15 households; Gaviluud sheep breeding – 26 households) are coming into an exit phase following consultation with the participating households. An exit plan is under development and is to include training and experience sharing with other groups, as well as joint activities with the RED team and IRIM/MIRM[26] to support sustainability of the cooperatives. During the site visit, the IESC/Lenders met with representatives of the Gaviluud sheep cooperative and commends the group's leader on continuously seeking and developing new ideas and opportunities for the Project's member households, including a vision to train women across the Gobi region in sheepskin processing and product development and participate in a regional agricultural expo event. While there was awareness of some OHS issues (e.g. airborne dust from sheepskin stretching/shaping process), **the IESC recommends that support is provided to the group to ensure that chemicals used for sheepskin tannery process are appropriately handled, stored, managed and disposed of, given the toxicity of chrome-based solutions**. Appropriate environment, health and safety risk assessment and support should be reviewed considered for all cooperatives, along with social sustainability.

There are two cooperatives for which implementation has commenced: the pig farm (6 households participating) and the herder services project (11 households participating). The IESC notes that the pig farm has been quite challenging with high mortality rates of the pigs, in addition to drought causing challenges for all animal breeding cooperatives. A further 5 projects/28 households are developing business ideas, and one project is going through project funding processes (Eco guest house, which has 10 households participating). The IESC met with the Eco guest house cooperative representatives and notes that contractor selection for construction of the guest house is anticipated for November 2024, with support for the process from IRIM/MIRM. While it was clear that a needs assessment had been carried out for the potential business, **the IESC recommends that support is provided to the group to confirm permitting**

[26] IRIM/MIRM are the NGOs that have been engaged by OT to provide consultancy support to SLPs

for the activity as necessary (construction permits, operational permits for a guest house). Lastly, OT stated that, as a TPC commitment, there are seven households remaining to participate in SLPs to finalise this commitment. Thus as SLPs phase out, projects under the RED strategy will be phased in (see Section 5.4.1).

Further to the previous monitoring report, OT has signed the resettlement agreement with one household who volunteered to be physically resettled as a result of dust, noise and loss of pasture due to the Link Road. The commitment for the household through a specific RAP is to maintain the herder's livelihood and pre-resettlement levels. The household has now fully relocated and reports satisfaction of the herder family. The old winter shelter certificate is being revoked in December 2024. The household will continue herding at the new location, and with an apartment in the soum centre, enables the children to attend school from home and also provides collateral for business purposes. An annual survey planned for May 2025. The IESC recommends that this approach is included in the RAP update currently in preparation.

The IESC, Lenders and OT remain in discussion regarding resettlement related matters of two businesses near the north gate, for consideration in the ESIA for the expansion of the Mine Licence Area. The ESIA consultant continues to work with OT CSP and Legal to articulate a strategy for the Supplementary ESIA on the MLA Subsidence Zone. The IESC anticipates this matter will be finalised outside the regular IESC audit schedule.

5.2.2 Vulnerable People

The Khanbogd soum Government administration's Livelihood Support Committee identified 20 vulnerable households to receive support for 2024. There have been no RAP households in this list since 2020. Since the previous audit, support to the households has included personal development discussions with children of vulnerable households.

One RAP household which had a HLIPs was identified as requiring further support from the soum for their vulnerability. Recognising the soum's model for identifying vulnerable households, the IESC notes that OT will engage further with the household in addition to Social Welfare of the soum regarding access to ongoing support. During the IESC/Lender meeting with the household during the September audit, it was clear that, while there are aspirations to secure employment in the medium term, immediate health needs require attention as a priority; potential options for appropriate support have been mapped and are planned for further investigation/finalisation. CSP team members are commended for their commitment to supporting this vulnerable household.

5.3 Stakeholder Engagement

Community engagement is the responsibility of the Communities and Social Performance team delivered under the Stakeholder Engagement Plan, while the External Affairs and Communications team manage national government and other national-level stakeholder engagement. The cross-functional SEP has cross-linkages to almost all other OESMPs. The CSP team has roles working at OT site, Khanbogd, Dalanzadgad and Ulaanbaatar.

5.3.1 Engagement and Information Disclosure

Since the previous IESC audit there were 230 engagements recorded with 582 stakeholders, still predominantly conducted face-to-face (Figure 5-1). These are shown as (a) numbers ,(b) format, (c) monthly attitude changes, and (d) local engagement word cloud. OT's self-assessed data on attitude changes (Figure 5-3) shows an increase in positive and neutral attitudes toward the project from July to August, while negative attitudes have decreased from 21% to 8% over the same period. In July, the CSP team found a

reluctance by herders to engage on Land Disturbance Permits (LDPs). During that month, two complaints were received for OT Exploration regarding LDPs in their grazing areas (see also s.5.3.2 below). Exploration work has increased post-Covid as required by the Government of Mongolia (so affecting all exploration companies, not only OT). After consent is granted, the drilling itself is typically conducted while herders are not present, however the implications of any finds are very clear to herders, who are not keen for more mining areas to be opened up. Further, the Gunii Kholoi water resource is being reassessed, causing further suspicion. The reassessment is a legal requirement, however this was not clearly communicated or understood.

Figure 5-1 OT Engagement (May – Sept 2024)

Eight public event reaching over 12,000 people have been held since the last audit. Naadam events in partner soums (for the 100 year anniversaries) have been by far the most significant engagement events, reaching more than 10,000 people in total. Other smaller but also important public events have included: the Javkhlant bagh meeting, which was attended by 60 people and focused on the Supplementary ESIA for the subsidence zone; Link Road construction commencement ceremony for the 12.6km road connecting the OT North Gate to the TT Coal Road; and site tour for 111 school children from KB and DZ, that included a pit tour, 'My career story' lecture and Hazard Park training centre visit. KB soum-specific 'coffee and tea' engagement included a speaker and author discussing aspirations for in-migrants.

The CSP team has recorded key topics of engagement, which include: water management (groundwater use for mining, delays in the Government's planned 'Blue Horse' surface water project); local employment and procurement opportunities. KB soum population remains. Topic of concern, along with the dirt road E&S impacts and OT tax payments.

The next 'pulse' community perception survey by consultants Voconiq is expected to be conducted in November 2024.

Project-specific engagement: TSF

The drivers for specific engagement on the TSF include the GISTM, RT CSP Standard and community and Lender expectations, including through implementation of the Remedial Action Plan disclosed on the OT website (see also Section 4.2.6). With this, TSF-specific engagement has continued, as shown in Figure 5-2 below. OT, in partnership with emergency agencies in Umnugobi aimag and KB soum are updating the TSF contingency plan for the Emergency Agency of Mongolia, and organizing a TSF Risk Assessment training which will include herders. [*note: it is not clear if these are planned or have been delivered*].

Figure 5-2 Stakeholder Engagement regarding TSF incident updates

	Key Stakeholders	Engagement	Discussion topic	Participants
1	Emergency Agencies in Umungovi aimag and KB soum	• Site visit • Cell 1 closure • Cell 2 start using • Individual meetings • E-mail	• TSF-RAP action and update • RAP Q1 report	12
2	Public: Herders & Local community	• Individual HH visit • Web site • E-mail	• Cell 1 closure • Cell 2 start using • Seepage trench building • RAP Q2 report	17
3	Tripartite Council	• New members meeting	• Herder Compliant Resolution Agre ement implementation review • Understanding the TSF seepage to the environment	20
4	Civil Society Organizations	• Web site	• RAP implementation • RAP Q2 report	3

Seepage reports for Q1 and Q2/24 have been finalized and the Q3/24 report was being finalised at the time of the IESC audit. A September water workshop was planned for the week after the IESC visit, to be attended by various parties including civil society organisations.

Further to the monitoring already being undertaken and shared with herders by Munkh Nogoon Galba NGO, concerns remain about whether seepage from the TSF is potentially impacting livestock and the environment. Thus, a toxicology consultant team has now been engaged to investigate and further understand the toxicology of the seepage to the environment. The toxicology team plans to meet the TPC and downstream herders during their fieldwork in the first week of October. The IESC anticipates an update on their findings at the next audit.

Project-specific engagement: Link Road and Railway Spur

Engagement on these two growth projects has raised concerns requiring response from those projects. On the Link Road, an additional livestock crossing point has been requested and is now under discussion with the herder, and a complaint raised regarding a borrow pit, prompting further engagement regarding water. The Link road, currently at 30% completion, is expected to be finished by the end of 2024.

The feasibility study for the Rail Link has been completed. Issues raised relate to the involvement of local contractors in construction, the need to minimise pasture disturbance, and to focus on railway fencing requirements with herders. The railway route requires agreement with the relevant Ministry.

5.3.2 Community Grievances

OT registered three complaints since the previous audit; two were Class III (significant) and one Class I. All three are in progress for resolution. The IESC notes that these were registered under the categories of environment and resettlement (where a herder's camel died after being trapped within the legs of one of OT's high voltage transmission towers[27]). The IESC proposes that the issue with the camel is an issue of *damage to property* or *loss of livelihood*, and a payment made in compensation is for this loss, not for *resettlement*, regardless of whether the herder was from a RAP household. **The IESC recommends that grievance categories are reviewed and if necessary, updated, and CSP team members familiarized with the resulting categories.** Current and anticipated activities should be covered; e.g., with resettlement activities completed, and a growing emphasis on soum-wide livelihoods support programs, fewer if any complaints regarding resettlement can be anticipated; pasture fragmentation due to more infrastructure and land take (by OT and other entities) may also become more common. Findings from the RAP Completion Audit also suggest that there are issues with the responsiveness within the GRM (see s.5.2.1), so **this recommendation should be considered in the context of undertaking a wider GRM review with the update of the SEP**.

The Environment category complaints received related to a company truck using an unauthorized transport route, which is now being followed up by Procurement, and generation of dust and noise near a herder household, now being followed up with a LDP review. Both are Class III complaints in progress at the time of the IESC audit.

During the reporting period, 22 requests have also been received, 17 of which have been completed and 5 are in progress

5.3.3 Tripartite Council

The TPC is operating under the TPC Agreement (2017-2024) and remains active. An election was held for five new Elected Herder Team (EHT) representatives to the TPC in June 2024, in line with TPC Charter requirement of two year terms for each of the 12 EHT members. During the IESC site visit interview, the TPC with new EHT had met once, covering inter alia expectations of members, Herder Complaints Resolution Agreements (HCRAs), reporting back to baghs and TPC training on group decision-making, cooperation and participation . A second meeting was planned for late September 2024 to continue with this induction. Further changes to TPC membership may occur with upcoming (October 2024) KB Soum elections.

Following rejection of the first HCRA independent review, TPC still intends to combine the HCRA and Governance Effectiveness audits in 2025. This means that the internal assessment of HCRA completion remains at 74% from the December 2021 assessment. TPC members reflected that the next independent review should give equal representation to households that had been compensated, and those that hadn't, i.e. directly and indirectly affected herder households. Repeating the independent review is the top priority of TPC members.

EHT members reflected that OT should attend bagh meetings quarterly, and prioritizing Javkhlant bagh to better communicate about and respond to questions on issues such as TSF seepage.

While the TPC Secretary was not in attendance at the IESC interview, it is understood that the Secretary attends to the TPC meetings and OT Town Hall meetings, and that additional scope may be proposed to the management unit, to enable more focus of members on priority issues.

[27] This grievance was also recorded as an incident, and was still open at the time of the IESC audit.

Communal projects are progressing as reflected in the previous IESC report. The target for HCRA completion is 2027.

5.3.4 Participatory Environmental Monitoring

Munkh Nogoon Galba NGO continues to implement the OT Participatory Environmental Monitoring (PEM) program. As at the previous audit, there are 121 participants, conducting 4 types of monitoring across 176 points. The types of monitoring, participant numbers, frequency and tools for monitoring are summarized in Table 5-5.

Table 5-5 Participatory Environmental Monitoring summary (Sept-24)

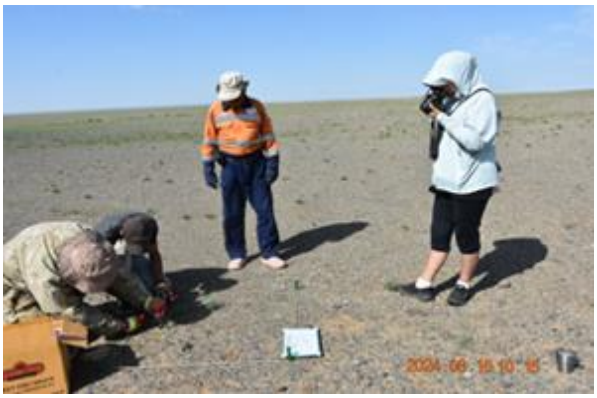
Monitoring	Type	Herders	Point	Time	Tools
Dust	Dust	2	9	10x monthly	DustTrak
Fauna	Fauna	17	17	Monthly	GPS, Camera
	Brid		1	Quarterly	Bird watching
	Nocturnal animal's active research	4	4	Quarterly	GPS, Camera
	Avtomat camera		6	Monthly	Motion sensor
Water	Hand well	84	86	10x monthly	Meter
	Herders deep well	4	12	Monthly	Water level meter
	Data logger		4		
	Pipeline		2	Monthly	Water level meter
	Sum center		1	Monthly	Water level meter
	Springs		6		Dron, meter
	TSF		8		Laboratory test
Pasture	Pasture	8	18	Yearly	5 types
	Populus divers' folia	2	2	Monthly	Measurement
Total		121	176		

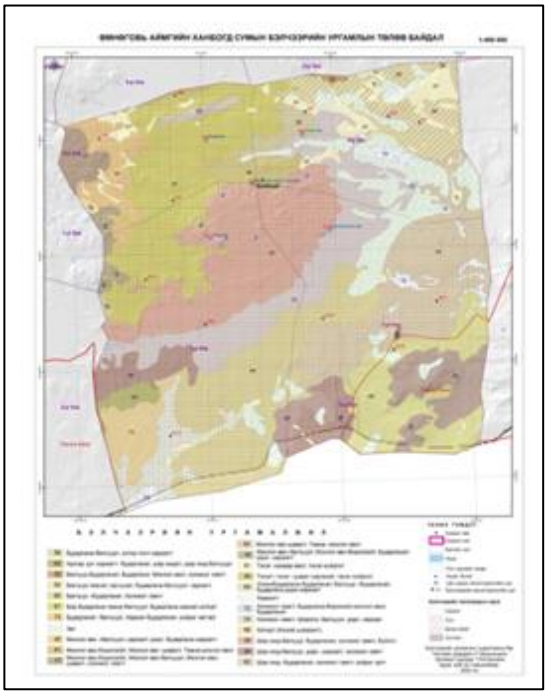
Monitoring highlights include further fauna sampling using automatic cameras over a 66 day period, photographing 155 animals across 6 locations. Fauna identified include the Eurasian lynx; grey wolf; Argali; and 12 Asiatic Ibex. Bird monitoring at Bor Ovoo spring captured observations of 15 different types of migratory birds. Spring research identified 50 nocturnal animals.

The DSF Quota funds to support automatic deep water well measuring equipment has been delivered. A project to conduct automatic measurements commenced from 1 August of 4 households' wells, with the aim to create a database of water points in KB soum that can help to inform future water policy. PEM monitoring observed that water levels in hand wells in KB reached 'normal' levels after heavy rains in July and August, with overall water fluctuations of -0.01 to 0.1m, with the largest fluctuation of 1.6m seen at Dund Khali.

In addition to the regular pastureland monitoring work by 8 herder households, pasture research was conducted in August with the School of Applied Sciences, to determine current conditions of soum pastures in KB. This research supported identification of pastureland capacity in the soum, as shown in Figure 5-3.

Figure 5-3 PEM Pastureland Monitoring and Sample Map from Resulting Dataset for KB soum





TSF monitoring by continues. Plant research is supported by 2 herder households at 3 sites around waste dump; data is currently being processed. The phytoremediation/bioremediation experiment continues by Munkh Nogoon Galba with the support of the NGO's Academic Council. The next soil sampling round within the 10m x 10m test area is anticipated for September/October 2024 (at surface and at root depths of the plants in the test area). Results once interpreted are expected to be shared at the October (or subsequent) TPC meeting. The IESC notes that herders are not involved in the bioremediation project. In the spirit of transparency and increasing capacity of herders in environmental monitoring, **the IESC recommends that Munkh Nogoon Galba invite herders to *observe* sampling activities as they are undertaken (of any non-PEM fieldwork)**. This will be up to herders to determine if they wish to do so, but the opportunity to engage should be provided; this recommendation was also shared with the NGO during a meeting with them at the site visit.

5.4 Regional and Community Development

OT's nascent approach to Regional Economic Development (RED) intends to reflect the 'partnering for prosperity' business strategy and the associated objectives to 'partner and contribute to strong socio-economic development in Khanbogd and Umnugobi'. A RED team has been established to lead on this framework, while also seeking alignment with external organisation and partnerships (Gobi Oyu DSF, KB Catalyst Fund, Local Employment and Local Procurement Working Groups). The introduction of the RED

Framework will reflect existing commitments of the Cooperation Agreement (CA)[28], Tripartite Council (TPC)[29], OT Catalyst Fund (CF)[30], as well as OT's Operational management plans.

The regional and community development program is directly related to issues addressed in Operational Management Plans: in-migration management, addressed through the In-migration Management Plan[31] (IMP), the Labour Management Plan[32], the Community Health, Safety and Security MP (CHSSMP)[33] and Pastureland and Livelihood Improvement Management Plan (PLIMP)[34]. These plans are all designed to minimize unplanned influx, maximize regional and community development to help the host communities cope with population growth, and promote sustainable economic development.

5.4.1 Regional Economic Development

An internal RED concept paper has been developed internally, which sets out draft objectives, principles and outputs, as shown in Figure 5-4 below. Internal governance arrangements are yet to be determined. The OT Red strategy will be informed by the Government's regional development policy[35] and regional development governance arrangements; this may include all four Gobi aimags, not only Umnugobi. The IESC will continue to follow development of OT's RED framework as this progresses.

[28] The Cooperation Agreement (CA) is the mechanism of engagement between OT and partner soums was signed in April 2015, in compliance with the OT Investment Agreement and the Mongolian Minerals Law. OT is obliged under the Agreement to provide USD $5 million ($6.2 million for 2023) each year into the Gobi Oyu Development Support Fund, which is administered by a Relationship Committee and the Board of the Gobi Oyu Development Support Fund (DSF).

[29] The Tripartite Council (TPC), between OT, Khanbogd soum authorities and Khanbogd soum herders, acts as a working group under the Cooperation Agreement's Relationship Committee, which has responsibility for managing commitments related to pastureland management and herder livelihood improvements. The Relationship Committee is responsible, in collaboration with Khanbogd herders, for prioritizing and recommending projects under the Cooperation Agreement that will contribute to sustainable livelihoods, via funding from the DSF, as well as all animal husbandry, herder cooperative development and related activities that are being implemented under the Pastureland and Livelihood Improvement Management Plan (PLIMP) to work together towards sustainable development in water, environment, pastureland management, cultural heritage, tourism, local business development and procurement.

[30] The OT Catalyst Fund (CF) is guided by the KB Partnership Agreement, between the Ministry of Construction and Urban Development, Umnugobi Aimag, Khanbogd Soum and the OT Catalyst Fund for Khanbogd Development. The Partnership Agreement, signed January 2023, is in place for ten years and is the vehicle for securing support and cooperation between all parties to implement approved projects that align with the KB Masterplan. The Fund invests into 'hard'- and 'soft'-infrastructure and business development are determined and agreed by the Fund's Partnership Committee.

[31] In-migration Management Plan – Doc. No. OT-10-PLN-0007-E, v.2.1.

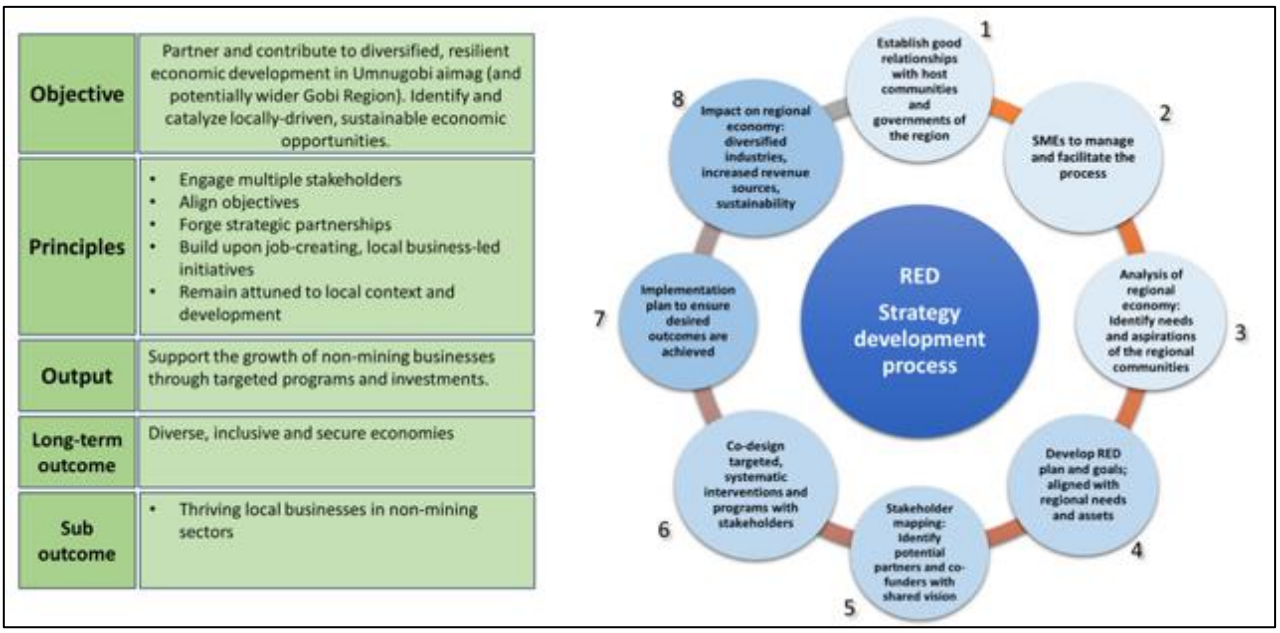
[32] Labour Management Plan – Doc. No. HR-10-PLN-0001-E, v.1.4.

[33] Community Health, Safety & Security Management Plan - Doc. No. OT-10-PLN-0001, v.1.2.

[34] Pastureland and Livelihood Improvement Management Plan – Doc. No. OT-10-PLN-0013-E, v.1.1

[35] https://www.vision2050.gov.mn/eng/index.html

Figure 5-4 RED concept framework and development process, Sept 2024



5.4.2 Agreements

Oyu Tolgoi Catalyst Fund

The first phase of Khanbogd soum internal road (8km) and comprehensive renovation of Galba park (5 hectare) are currently under construction to be completed by Q3 2024. Road construction was well underway at the time of the IESC site visit, with asphalting work imminent. The other projects in the plan for 2024 at various stages, as shown in the Figure 5-5 below. Notably, private sector housing development is at initiation stage, and the urban renewal project, including the KB light industry area design is under procurement.

Figure 5-5 Catalyst Fund Project Development 2024

		Project	Status	Project Update	End year
Hard Infrastructure	1	Street Project	*Construction*	*Completed outdoor hardscape work on Workshop House. Finalizing and revising the street design and engaging with the residents*	*2024*
	2	Galba Park Improvement	*Construction*	*Construction commenced and projected to be completed in July 2024*	*2024*
	3	Sports & Recreational Center	*Design & Eng*	*Engineering drawing and budget have serious issues, and it is undergoing through revisions. Timeline is affected*	*2025*
	4	Soum Internal Road	*Construction*	*Construction commenced (first phase 7.96km) and projected to be completed in July 2024*	*2025*
Business Development	5	Housing project	*Initiation*	*Enable housing development by private sector through financing and other enabling mechanisms*	*2028*
	6	Economic activation	*Implement*	*Activation: KB local economic baseline assessment, Financing instrument for KB SMEs, Co-funded Know How event with EBRD* *Diversification: Tourism diversification and startup support*	*2025*
	7	Urban renewal projects	*Procure 1*	*Central district design and study, Light industrial zone design and study*	*2028*
Soft infrastructure	8	Education Excellence	*Implement*	*Completed comprehensive study and a roadmap and presented to partners for collective implementation. Tomuiin and STEM pilot programs are ongoing*	*2028*
	9	Healthcare Excellence	*Implement*	*Comprehensive healthcare study is completed in Dec 2023. Roadmap is under consultation with stakeholders.*	*2028*
	10	Local capacity building (KB gov and community building, arts festival)	*Implement*	*Organized a small pilot capacity building program on landscaping with the local agency. Program development to start soon along with construction*	*2026*

Project life cycle: Initiation (Project shaping) → Preparation → Procure 1 → Design & Eng Study → Procure 2 → Construction Implement → Commissioning

The IESC notes that the CF is reliant on the KB soum for securing appropriate land title for the projects financed by the Fund, as described in the KB Soum Partnership Agreement. **However, the IESC recommends that OT ensure that due diligence is carried out to both encourage good international practices and to identify where there may be potential risks of breaches of the CSP Standard[36] (e.g., legacy land acquisition). Similarly, due diligence is recommended where environmental or other permits are also required and these are not the responsibility of the CF EPCM team.**

Gobi Oyu Development Support Fund (DSF)

The DSF has invested USD $51.6 million in now 496 projects since commencement in 2015; this is 67 more since the previous IESC report. Of these 73 are in progress, and 15are at procurement/contracting stage.

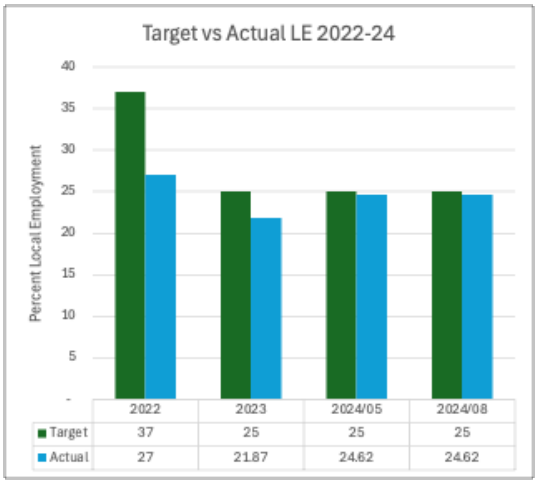
Major infrastructure projects are progressing in Dalanzadgad with the 1,200 student-capacity school at 99%, the plastic waste recycling plant at 65% completion and the kindergarten and industrial zone pipeline now both commissioned. The KB soum sewage and water pipeline is at 60% completion.

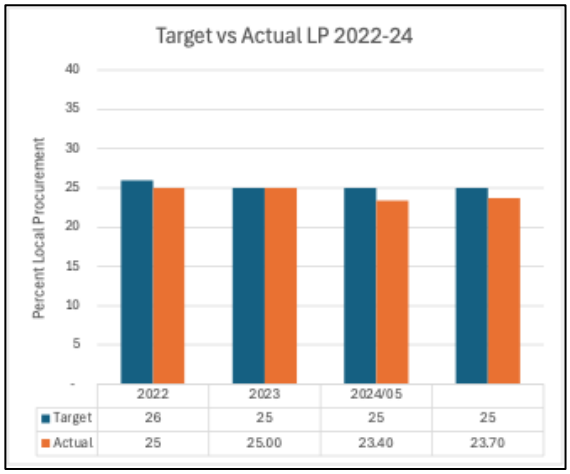
5.4.3 In-migration

In-migration management controls remain the two broad categories of (i) managed in-migration through recruitment and procurement practices; and (ii) contributing to social infrastructure and services to ensure adequate service for the evolving local population, inclusive of unplanned in-migration. The In-migration MP review is now pending integration with the Town Transformation and Worker Accommodation strategy.

The Local Employment (LE) and Local Procurement (LP) working groups are both active. Performance of both aspects have been provided by OT at each IESC audit alongside long-term targets of: 70% local employment by 2030, and 40% local procurement by 2030. Figures since 2022 are shown in Figure 5-6.

Figure 5-6 Local Employment and Procurement Targets vs Performance (2022-2024 YTD)



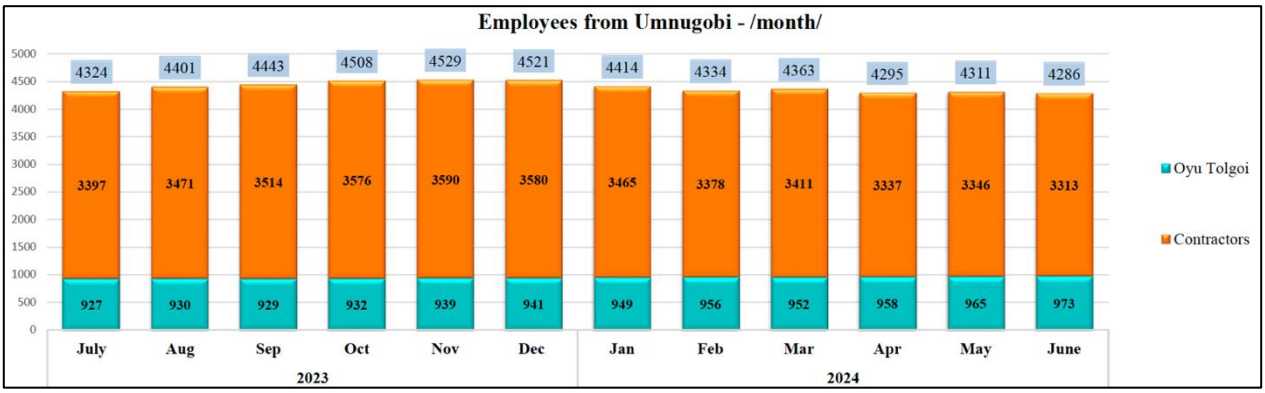


The LE Working Group clarified the definition of 'Umnugobi resident' from a hiring perspective and clarified that 6 months residency is required. has announced a pre-apprenticeship program for Umnugobi citizens. Courses and places on offer are: Concentrator operator (30 positions); welder (30 positions); mechanic (15 positions); and electrician (15 positions). Of past apprentices, 22 became permanent OT employees in August. As at 30 June, there were 4,286 employees of OT LLC from Umnugobi aimag, which is 25% of the workforce (100 people fewer compared to the last audit), as shown in Figure 5-7 below. Further, 77% of

[36] The RT CSP Standard 'applies to all assets and land for which the business has liability to the extent that the business is able to control the CSP activities related to that land or asset'

Contractors are from Umnugobi, and 1,980 OT LLC employees are from Dalanzadgad. As at September, the LE WG is also in the process of co-designing a labour market study for Umnugobi, with the aimag's Labour and Social Welfare office; this is a key deliverable for 2024. The next meeting of the LE WG was planned for late September 2024.

Figure 5-7 Numbers of OT and Contractor employee from Umnugobi (Jul-23 to Jun-24)



The LP Working Group last met in August with a new GM Procurement for OT. OT Procurement information sessions have been conducted in DZ and KB, focusing on registering in the Procurement database and advising of upcoming local procurement calls. The WG has an interest in increasing the types of procurement to more than the current 22 categories.

Operational spend for OT is described in Table 5-6; the IESC notes that since the previous audit, OT has increased its spend value in KB by $80m, by $100m in Umnugobi and more than double in-country.

Table 5-6 OT 2024 Operational Spend (local, regional, national and international) YTD to 31 August

Operations Spend as of April 30, 2024			
	Spend value	Target	Performance
Khanbogd	$ 72m	20%	18.6%
Umnugovi	$ 90.5m	25%	23.4%
National	$ 273.7m	75%	70.8%
Incountry	$ 352.8m	90%	91.3%
International Tier 3	$ 33.5m		8.7%

Operational Spend as of August 31, 2024			
	Spend value	Target	Performance
Khanbogd	153.9m	20%	19.1%
Umnugobi	191.1m	25%	23.7%
National	570.1	75%	70.6%
In-country	729m	90%	90.3%
International Tier 3	78.4m		9.7%

5.4.4 Pastureland and Livelihood Improvement

The PLIMP seeks to identify the supporting role of OT in contributing to pastureland management and livelihood improvement programs and initiatives of the soum Government Office in conjunction with local herders. Support is on-going for local agribusiness to contribute to local economic diversification and community food safety and security under the Local Agribusiness Support Strategy (LASS, 2018-25).

Since the previous IESC audit, the herders joint cooperative (*Galbiin goviin torgon sureg*) is fully established, with key personnel presenting at national conferences and attending leadership development training. They are also participating in end-user consultation reviews of the KB Slaughterhouse, with the view of becoming the managing entity upon completion. The KB slaughterhouse construction design drawings are at 80% completion and the DEIA for the project is to be done by the OT Environment team.

The Animal health and veterinary service work is ongoing, with an agreement established for testing the quality of camel milk for the private entity, TESO. Camel milk has been available in KB and UB for some time but ensuring a consistent, quality-assured supply remains an issue.

The KB soum animal husbandry development program is ongoing with engagement with the TPC on the delivery of various program commitments. These include the meat cattle farm project, wool processing project, and a feasibility study of the light industrial zone commenced.

The Local Agribusiness Development consultancy has concluded, following the completion of the contract with Development Solutions NGO (2020-24). In this period, the NGO had helped support 8 local start-up businesses, conducted 398 training/consulting support engagements and 42 business project studies. The IESC commends the team for the highly regarded support provided during this period. A new contractor, through a joint proposal by IRIM and MIRM, will be engaged for 3 years to provide support to herder cooperatives, PLIMP projects and RED strategy. A kick off will be held with KB soum participants in October 2024.

5.5 Community Health

Community health programs are supported under the operations CHSS MP as well as indirectly through DSF and wider partnership programs.

The IESC notes that cases of smallpox are rising still further since the previous audit, up from 24 to 88, and while adolescent pregnancy cases are declining, STI rates are trending upward. Partnership programs continue, including peer trainer training on reproductive health and sexuality education, mental health, and, working with the Catalyst Fund, enhancement of the capacity of the Youth Clinic.

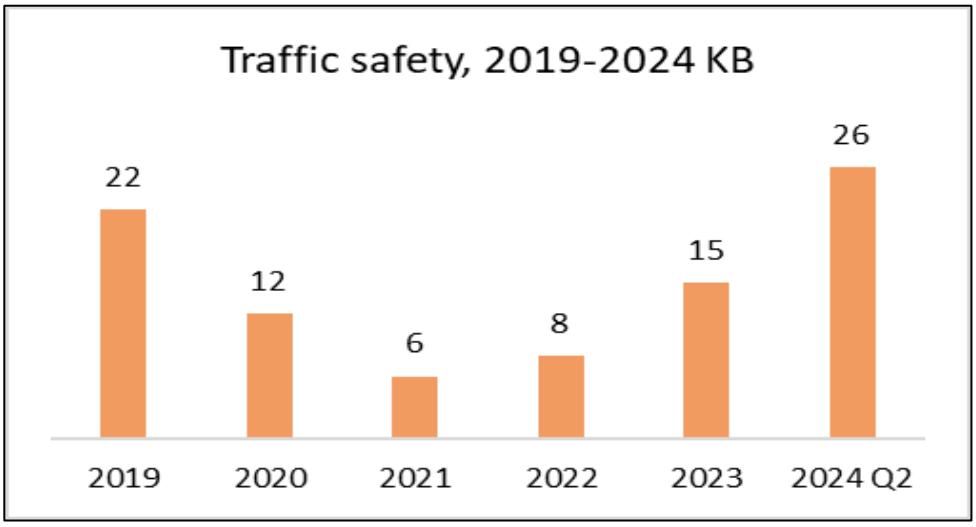
The Occupational Health Unit in the soum hospital has increased the number of checks provided, now to 1906 workers across 84 contractor companies receiving medical checks in Q2/24. Income generation from this unit has been reinvested, now into improved hard infrastructure for the unit: dental X-ray and an infant phototherapy lamp. International SOS has provided seasonal training to 28 staff and medical liability insurance has been procured.

5.6 Community Safety

Types of crime in KB remain similar, while numbers have decreased by 27.6% since Q2/2023, with 19% occurring in KB soum centre. The numbers of traffic incidents are increasing (see Figure 5-7). Road safety training has been underway, with training organized for 37 kindergarten teachers and employees in KB, which also included materials and content for students for Road Safety Week. Further, OT is providing updates at Town Hall meetings on specific road safety issues such as construction of the Link Road. The Construction Team is providing updates on timing, process and safety issues and responding to requests

such as provision of animal crossing points. The IESC notes that traffic safety is an issue of high community concern (e.g. identified through the RAP Completion Audit (see Section 5.2.1) and supports these proactive interventions and measures to design out community safety risks.

Figure 5-8: Road safety incidents, Khanbogd soum, 2019-Q2/2024



The concerns and engagement with communities regarding the Tailings Storage Facility (TSF) is covered in Section 5.3.1

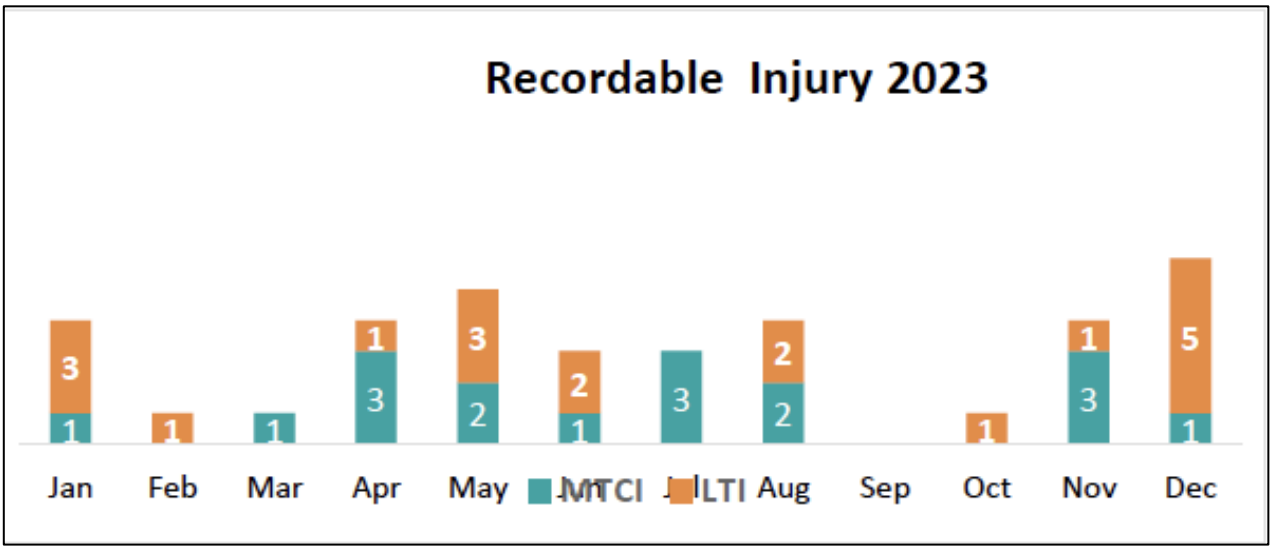
6 Worker Health and Safety

Occupational safety is managed under the OT HSESC Management System which is consistent with Rio Tinto standards and OHSAS 18001. General workplace health and safety is addressed in the ESMP and companion documents: Element 3 - Hazard and Risk Management; and Element 6 - Training, Competency and Awareness. These documents describe the framework for hazard and risk assessment, including tiered assessment levels to address a range of occupational and operational activities that support understanding of the hazards and controls.

Contractors are required to have their own safety teams. Hazard identification and risk management processes are in place, and documented safe work procedures cover activities with significant risk. Assessments and inspections are performed to evaluate if objectives are being met and verify personnel training, certification and equipment. Internal audits are conducted to evaluate implementation of standards.

In 2023 and thus far in 2024, through the end of July, there have been no fatalities, although some serious and/or potentially fatal incidents have occurred. In year 2024, through the end of July, there have been seven potentially fatal incidents associated with the open pit operation, and one with the underground. The All Injury Frequency Rate (AIFR) is a commonly used to metric to assess overall health and safety performance of an operation. For 2023 OT had a very strong AIFR of 0.20 per 200,000 hours worked which is within the internal target ratio of 0.23 per 200,000 hours worked. In 2024, through the end of July, the AIFR was 0.14 per 200,000 hours worked for open pit operations and 0.17 for the underground.There were a total of 19 Lost-Time Incidents (LTI's) in Year 2023, and 17 Medical Treatment Case Injuries (MTCI's), as shown on Figure 6-1.

Figure 6-1 Year 2023 Lost Time Incidents and Medical Attention Incidents



In 2023 there were approximately 1,145 major hazard Critical Control Verifications. OT is one of the safest performers across Rio Tinto operations. In 2023 Oyu Tolgoi received the "Most Improved Asset" and the underground operation received "Best Overall Asset" safety awards from Rio Tinto. In 2023 OT executed a significant health exposure campaign. A total of 31 Similar Exposure Groups were sampled based on their health exposure profile. The most common exposure risks are dust and other airborne contaminants, as well as noise. From the campaigns a total of 43 dust and noise exposure reductions and

improvements were identified. This SMM Program standardizes the management of safety and enables comparable evaluation and learning across the organization.

In 2022 a total of 3,232 medical examinations were performed on staff and contractors. Common medical conditions include high blood pressure, high Body Mass Index, liver disease and diabetes. The 2023 Wellbeing Strategy focused more on respiratory and auditory risks. COVID-19 protocols at the OT site were removed beginning in late 2022.

Recently OT has installed Collision Avoidance Systems in mobile equipment. There are have been other recent initiatives aimed at reducing ambient dust levels in key locations. Automatic dust suppression systems have been installed at five high priority areas. Cabin filtration systems are in trial for equipment at the open pit. At the welding shop the exhaust system has been upgraded to improve ambient air quality.

7 Cultural Heritage

Cultural heritage management is set out in the OT Cultural Heritage Management Plan[37] (CHMP), which was last reviewed in 2021, and complementary Cultural Heritage Management System (CHMS) procedures including the Chance Find and Land Disturbance Procedures (OT-10-E9-PRC-0003-E). This applies to all OT activities including those of contractors. Overall responsibility for cultural heritage lies with the GM Communities.

OT reported no cultural heritage incidents since the previous audit. Site monitoring was conducted 4 times at 5 locations, with zero breaches detected. Since the previous audit, 18 land disturbance permits have been approved (10 on site and 8 offsite); fewer since the previous audit as MPZ expansion infrastructure relocation works are underway. Engagement was conducted with 13 herders regarding drilling and roads, and zero journey management breaches have been recorded. Community induction training was completed by 222 employees from across 7 companies.

Further to the previous audit, a study on water as a cultural resource is still currently being tendered for completion by a consultant team.

The proposed Institute of History and Ethology has found the Khurdet cave and has documented inscriptions in the cave as a cultural site of historical value under OT's project. A publication on the cave inscriptions is to be developed. Cultural heritage site protection works are underway at Shar Tsav and Bor Ovoo, in line with OT's CH management system requirements.

Rio Tinto, UNESCO and others are partnering to develop a Geopark, for which a 'Multi-Stakeholder Consultation Meeting on Tourism Products and Tourism Routes', was held immediately prior to the IESC site visit. The Geopark intends to contribute to sustainable, cultural heritage-based tourism in Mongolia.

Lastly, the 100-year anniversaries of OT partner soums: KB, Manlai, Bayan-Ovoo, and Tsogtsetsii, were celebrated with special Naadam festivals in August. A document recognising local histories is to be published in recognition of the 100-year celebrations.

37 Cultural Heritage Management Plan - Doc. No. OT-10-PLN-0002 v 1.4

8 Progressive and Final Closure

As reported on in the prior Q2 2024 Audit Report the last produced version of the Oyu Tolgoi Closure Plan is from 2017 (AMEC). A revision is required to ensure the Closure Plan aligns with 2019 updates to *Mongolia National Regulation on Mine Closure and Rehabilitation* and Rio Tinto Closure Standard updates from 2015 and 2021. OT has previously prepared a Gap Assessment of the current Closure Plan with these requirements.

OT has previously represented that an updated Closure Plan would become available in Q4 of 2022. From the Q3 2022 Audit Report the tendering of bids to update the Closure Plan was described as “in progress”. In Q2 2023 OT reported that procurement has been delayed but that an external consultant had eventually been retained to update OT’s Closure Plan referencing overall OT closure requirements as detailed above. From the prior Q3 2023 Audit it was reported that an updated draft Closure Plan would become available for review by Q4 2023; however at the time of writing this over-arching Closure Plan was still in development. From the last Audit Report it was described that an updated 2023 Feasibility Study was in late stages of finalization, and that his will drive updated closure costs.

The current overall OT Closure Plan is outdated, although TSF Cell#1 is under progressive reclamation. This reclamation is being undertaken following a specific Oyu Tolgoi TSF Cell#1 Closure Plan, which is draft form. The IESC has reviewed this document and considers it fit for purpose, although some costing information is still pending. The TSF Cell#1 Closure Plan covers a five year closure period beginning in 2024 and extending into 2029. A 10 m NAF cover layer has already been emplaced as part of progressive reclamation. Rock mulch and other revegetation trials are in progress were observed on the west flank of the TSF Cell#1 during the Q3 2024 site visit.

During this audit it was reported that the Mine Closure Plan is has been updated using the recent 2023 Feasibility Study as the operating scenario framework. However that 2023 Feasibility Study has not yet been approved by regulatory authorities. Under the 2023 Feasibility Study the operating mine life has been reduced from year 2055 to year 2051. Under Feasibility Study 2023 mine closure costs have been updated from the 2014 estimate of $1.17 billion to a current $1.5 billion. Most of the cost escalation is inflationary.

Overall OT closure lability lies within Rio Tinto’s over-arching closure provisioning. Each asset is responsible for development of their respective closure plan. Experts within Rio Tinto closure cost estimating then review these developed models. Under Rio Tinto procedure each asset’s closure plan is reviewed on a five year cycle. For Oyu Tolgoi this last review occurred in 2021, with a conclusion that OT’s Closure Plan was outdated. This has driven OT’s efforts to update their plan, although the delay in formal acceptance of the 2023 Feasibility Study has delayed formal progression.

9 Non-Conformance Table

This chapter tabulates a summary of non-conformances identified in this report based on the desktop review (Table 9 - 1). The table identifies non-conformances with respect to associated commitments as included in the ESIA, Operational Management Plans, the ESAP, and internal procedures which altogether define how the OT operations manage applicable Lenders' Environmental and Social Standards. The categorization of non-conformances is based on the same non-conformance levels defined in the ESMP which also reflects the RT Health, Safety, Environment and Community (HSEC) Management System classification.

These include the following descriptions:

- **Class IV** – A critical non-conformance, materially inconsistent with the Project Standards or Management Plans, resulting in or reasonably likely to result in irreversible impacts to sensitive receptors or important resources or significant damage or irreversible harm or damage to an ecologically or socially sensitive resource or has the potential for an extreme health and safety incident;
- **Class III** – A material non-conformance, materially inconsistent with the Project Standards or Management Plans, that has not resulted in clearly identified impacts to sensitive receptors or important resources or material damage or irreversible harm or damage to an ecologically or socially sensitive resource or have the potential for an extreme health and safety incident, but it is reasonably likely to have such effects;
- **Class II** – A material non-conformance with the Project Standards or Management Plans, but not reasonably likely to result in impacts to sensitive receptors or important resources or material damage or irreversible harm or damage to an ecologically or socially sensitive resource or have the potential for an extreme health and safety incident;
- **Class I** – An incident not materially consistent with the Project Standards or Management Plans and not reasonably likely to present a threat to the environment, community or worker health and safety.

Each non-conformance identified in the table will require actions from OT and will be followed-up by the IESC in subsequent audits. The table includes a description of the finding, the level of non-conformance assigned, the reference to the Project commitments and/or relevant project document as well as recommendations for improvement based on collective experience and the expertise of the IESC. Please also note that non-conformances not sufficiently addressed, according to IESC opinion, could result in a level increase, independent from the actual material consequences due to the conditions, unless an explanation is provided to justify the decision to avoid any corrective action.

Overall, results of the present audit are as follows:

- no Class IV non-conformances have been identified;
- one Class III non-conformances identified;
- Seven Class II non-conformances identified; and
- One Class I non-conformances identified.

There is one new Class III non-conformance identified in this report, related to labour management. There is also one new Class II non-conformance related to the OT Disciplinary Procedure.

Figure 9-1 Non-Conformance Table

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2023 - current	Expansion of Mine License Area without NoC approval	ESMP 3.13 (Element 11) Management of Change	Open	II	**See Section 2**. The ESMP describes that Lender approval shall be obtained prior to activities requiring implementation of the Management of Change procedure. This includes activities that are of significant departure from the Project Description of the 2012 ESIA. The extension of the Mine License Area (MLA) north encompassing an additional 266 hectares is a departure from the 2012 Project Description, as is a redesign of the Dugat/Khaliv ephemeral river diversion. Both should be approved in advance with the Lenders through the Management of Change procedure. A Supplementary ESIA has been prepared and was initially reviewed by the Lenders and IESC in Q4 2023. The Lenders have since then requested that more information be included to adequately ensure preservation of surface water flow, and potentially groundwater flow, associated with any rerouting of the Dugat ephemeral river system around the MLA. Additional detail was also provided to improve the document. This feedback was accepted by OT, who have worked with their third-party consultant to revise the Supplementary ESIA, with a finalized version of the Supplemental ESIA just issued in Q3 2024. Importantly the finalized design of the Dugat River Surface Water Diversion was also just completed, and this constitutes a major component of mitigation planning. At the time of writing OT has informed the IESC that construction of the Dugat Diversion project has been delayed until the 2026 field season. Regardless of the timing of actual construction the Supplemental ESIA should be finalized as soon as possible.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2023 - current	Closure Plan not updated	ESAP Item #4, IFC EHS Guidelines for Mining (2007)	Open	II	**See Section 3.3**. The current version of the Oyu Tolgoi Closure Plan was last updated in 2017 (AMEC). A revision is required to ensure the Closure Plan aligns with 2019 updates to *Mongolia National Regulation on Mine Closure and Rehabilitation* and Rio Tinto Closure Standard updates from 2021. Rio Tinto internal review has also identified that the OT Closure Plan requires updating. Overall OT closure lability lies within Rio Tinto's over-arching closure provisioning. Each asset is responsible for development of their respective closure plan. Experts within Rio Tinto closure cost estimating then review these developed models. Under Rio Tinto procedure each asset's closure plan is reviewed on a five year cycle. For Oyu Tolgoi this last review occurred in 2021, with a conclusion that OT's Closure Plan was outdated. This has driven OT's efforts to update their plan, although the delay in formal acceptance of the 2023 Feasibility Study has delayed formal progression. Finalization of an update to the Closure Plan is pending acceptance of a 2023 Feasibility Study. However the IFC's EHS Guidelines for Mining (2007) require regular updating and refinement, and include demonstration of the availability of all necessary funds, by appropriate financial instruments, to cover the cost of closure at any stage in the mine life, including provision for early, or temporary closure. Funding should be by either a cash accrual system or a financial guarantee.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q2 2022 – current	Environmental Incident causing potential impacts to water quality outside of the Mine License Area	WRMP WRm-02	Open	II	**See Section 4.2.6** In November 2021 OT identified an Environmental Incident at the TSF related to control of seepage from TSF Cell#1. Follow-on monitoring has identified high total dissolved solids (TDS) concentrations in monitoring bores just beyond the boundary of the MLA (i.e., outside of the OT fence line). A Detailed Water Review was held in 2023, with short-term and long-term mitigations and investigations planned to address the issue. These actions were then incorporated into a formalized Remedial Action Plan (RAP). The RAP was finalized in Q4 2023. The status of implementation of the RAP is detailed in this Audit Report, and information is also publicly disclosed by OT on their website: https://admin.ot.mn/wp-content/uploads/Progress-Report-Q2-EN.pdf Additional monitoring bores have been installed down gradient of the MLA, with high TDS waters extending up to 300 m beyond the site boundary. There is also a bedrock high at this location which could impede or event prevent groundwater flow at this location. OT has implemented a series of RAP mitigations, including additional hydrogeologic study. Mitigations include but are not limited to relocation of the seepage collection pump house, installation of a French drain trench down gradient of the cut-off dam to the east of the TSF Cell#1, and extension of the cutoff trench to the north and adjacent to TSF Cell#2. The IESC has made recommendations in this report for certain areas of RAP implementation that are delayed and/or not providing stated objectives. These include, importantly, lack of identification of a precise geochemical signature to distinguish between potential tailings seepage/barge pond water escaping into the environment and natural high TDS groundwaters that occur in the region. Without that it is challenging to determine precise impact, and by extension appropriate remedial systems beyond those already implemented.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q2 2021 – current	Shipment of hazardous materials offsite for contractor disposal is not anticipated in the ESIA	HWM 03, HWM 13	Closed	III	**See Section 4.4.** Appropriate disposal of non-recyclable hazardous materials is a long-standing issue at the site. The IESC had recommended in the prior Q2 2024 Audit Report that OT submit an NoC related to the off-site processing of hazardous waste prior to this activity taking place. In response in Q3 2024 submitted an NoC 2024-004 entitled: "*Change of approach for hazardous waste disposal (Level 2)"*. The IESC has reviewed supporting materials provided in the NoC submittal. These include a specific license issued to Element, LLC by MET for a period of five years, authorizing hazardous waste disposal. The controlled and appropriate disposal of accumulated hazardous waste is a positive development, instead of the long-term storage that has occurred on site for a number of years. All handling and processing of approved hazardous waste streams has been authorized by the relevant Mongolian domestic regulatory approval agencies. All chains of custody are intact. NoC 2024-004 was approved in Q3 2024. The IESC will include a visit to the offsite hazardous waste disposal facility during the next field audit, currently scheduled for Q3 2025. The IESC cautions that Oyu Tolgoi is anticipating the number of companies to increase with similar permitting approvals. Future disposal entities should also be vetted by the Lenders and IESC through the NoC process.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q2 2024	Dust conditions at COS Building with Occupational Health and Safety Action Levels exceeded for particulates and silica	Air Quality Monitoring Plan, Section 7.2	Open	I	**See Section 4.5.1.** The Q2 2024 Audit Report describes a prior Risk Assessment that had identified exposure to respirable dust, including in particular silica, as a key concern at the COS Building. Limited results did not show exceedances of applicable Occupational Exposure Limits (OELs), but were in some instances above 50% of the OEL which is considered an action level. The IESC recommended an assessment of dust levels at and around the COS relative to World Health Organization Ambient Air Quality Guidelines, as contained in Table 1.1.1 of the World Bank Group's General EHS Guidelines. The objective of this assessment was be to ensure appropriate occupational health and safety conditions for approximately 22 shift employees, who typically work two week rotations. Following a number of meetings with the COS operational team both immediate and long-term improvements and engineering solutions have also been planned. Short-term actions include: • Regular cleaning and road maintenance; • Trialing new foam for dust suppression system; • Rollout of site-wide notification advising the area surrounding the COS Building is a Respiratory Protective Device designated area; • Replacement of torn net cover on two side of the facility Long-Term (within 5 years) actions include fully enclosing open sides of the COS and identification of more effective engineering solutions for dust reduction. Both of these long-term initiatives are with the OT Engineering Projects team. Additional COS monitoring is planned for Q4 2024 and the IESC will continue to report on these results and dust reduction progress at this location. Again the IESC recommends a specific assessment relative to World Health Organization Ambient Air Quality Guidelines, as contained in Table 1.1.1 of the World Bank Group's General EHS Guidelines.

Q3 2022 - current	OT is not making measurable progress in offsetting the loss of rangeland habitat caused by the mine footprint	Appendix 1: OT Biodiversity Strategy Appendix 4: Biodiversity Offsets Strategy (BOS)	Open	II	**See Section 4.9.** The South Gobi Cashmere Project has been dropped as a biodiversity offset. An alternative offset is needed. In previous audits the IESC recommended the development of a new offset and the September 2022 audit registered a Level III non-conformance requiring that a new offset plan be presented by May 2023. OT stated it would tender a new design consultancy in the coming months. At this time, a new design concept has been developed. OT expects to complete plan by March 2025 and will submit to lenders for review at that time. Based on recent progress on the concept, the non-conformance has been lowered from Class III to II. **The BOS states:** The aim of OT's biodiversity offsets strategy is: 'to achieve Net Positive Impact on biodiversity through the generation of gains in priority biodiversity features to offset residual project losses'. It is proposed to achieve this aim through a series of six objectives as summarized in the logical framework and detailed below: …, Improved rangeland management, …" Rangeland is a natural habitat and supports priority biodiversity features in the landscape. **BOS Section 4.3 Improved rangeland management** describes the program and the committed outcomes of: • Reduced degradation of rangeland by livestock leading to improved habitat quality • Increased population of priority biodiversity features • Reduced disturbance to wild ungulates • Increased wild ungulate populations **BOS Section 7.2 Socio-political risks** and **Section 7.3 Technical risks** identify issues that have affected this program, such as difficulty in changing traditional herder culture and practices, inability to prevent non-participating herders from entering the area of intervention, and the effects of challenging climatic conditions such as periods of low precipitation. **BOS Section 8 Recommendations** includes a recommendation to exceed NPI targets by a sufficient margin to hedge for under-performance.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
					The NPI Workbook (updated April 27, 2021) states: "As of the end of Q4 2020: 6410.5 ha [of rangeland] directly lost, which equates to 2435.99 QH (using Q=0.38: see Annex for how this was calculated) + unknown area around Khanbogd." The residual position, considering mitigation implemented to that date, was -2,251.65 QH. Currently the footprint of OT is expected to continue growing and is outpacing the rehabilitation and offset programs. In effect, the greatest biodiversity impact of this project is largely unmitigated at this time.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2023 - current	OT is not meeting time-bound commitments in the Priority Plant Corrective Action Plan.	Appendix 1: OT Biodiversity Strategy	Open	II	**See Section 4.9.5.** The IESC opened a non-conformance in 2018 for insufficient progress in mitigating impacts to plant species for which the project area is Critical Habitat. The IESC closed the non-conformance in 2020 based on the development of a Priority Plant Corrective Action Plan. However, time-bound commitments in that plan were not being met therefore the IESC opened a new non-conformance. OT agreed to submit an updated timeline in a NOC. This was done and approved. However, OT is again behind schedule in meeting the updated timeline. **The OT Biodiversity Strategy states** Oyu Tolgoi's goal is to have a net positive impact on biodiversity of the southern Gobi region. **The NPI Workbook** (updated April 27, 2021) shows 31,632 priority plants lost and a net position (lost plants minus propagated and re-planted) of 30,897 as of Q4 2020. Information presented by OT in the Sept. 2023 audit, not yet updated in the NPI Workbook, indicates an additional 87,676 to be lost in the Mine Protection Area (subsidence zone of the underground mine). The Priority Plant Corrective Action Plan commits to determining habitat requirements for priority plants, GIS mapping of transplanting areas for priority plants, determination of propagation methods for all priority plants, and research and determination of effective transplanting methods. Commitments are not being fully met for GIS mapping of transplanting areas, quantification of seedling needs, and transplanting trials for priority plants.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2024	Conflicts are observed with aspects of OT's Labour Management Plan, procedures and guidelines, triggered by long roster changes: • The OT Labour Management Plan documents the company's commitment to implement equitable and transparent remuneration systems Introduction of the long roster has changed the uptake of second jobs outside OT, exacerbating potential fatigue risks	Labour MP, s.5.1.1(3) / OT Code of Business Conduct Fatigue Management Guideline Section 3	Open	III	**See Section 5.1.2.** OT's Labour MP documents its commitment to implement equitable and transparent remuneration systems; the IESC observes that the current arrangements on salary calculation and disclosure do not meet this commitment. Interviews conducted by the IESC overwhelmingly identified that salary calculations are unclear, which has contributed to strike action and personal distress in some cohorts of the worker population. The IESC recommends that the calculation of salaries, including the Average Salary Rate and the employers' discretionary items within the calculation, are disclosed in a manner that is readily understood by employees, and that OT reviews how salaries are calculated, with dual objectives of simplifying calculations and achieving predictability for workers in their earnings. It may be appropriate to consider these commitments as part of the current Collective Agreement negotiations. OT's Fatigue Management Guideline identifies a shared responsibility between leadership and individual employees to ensure that fatigue does not affect employee's own or others' health and safety. Introduction of the long roster indicates that there has been further uptake of additional paid work outside OT due to financial stresses. The IESC recommends that OT investigate further the nature and extent of this issue, risks and appropriate measures to apply to ensure health and safety impacts are mitigated.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2024	Interviewees in a disciplinary investigation were not offered to be accompanied by a support person	OT Disciplinary Procedure (OT-HR-C-H1.1, s.16)	Open	II	**See Section 5.1.2** Employees described that investigation interviews had been conducted one-to-one with those employees that had participated in strike action of June 2024, and that they were not informed that they had the right to have a support person present at the meetings, as is provided for under OT's disciplinary procedures. The IESC recommends that OT provide a detailed explanation to the IESC and Lenders of the processes followed in conducting its investigation, including a specific response on whether workers have the right to be accompanied by a representative.

Q3 2022 – current	The OT ESIA describes development and implementation of a Worker accommodation strategy; however this is not evident	ESAP: Worker Housing Development / ESIA C8, s.8.1.1	Open	II	**See Section 5.1.3.** The IESC opened a NOC in 2022, noting that a Worker Accommodation Strategy should identify existing gaps in bed numbers, and forward-looking demand for beds that can be reasonably anticipated, and satisfying 'Everyday Respect' commitments. Context at that time was that worker accommodation is at capacity, and some of the existing camps are at the end of their life expectancy. Solutions to provide adequate beds for the permanent workforce appear ad hoc. OT stated that a pre-feasibility study is to be prepared by December 2023, however this responds only to meet bed requirements for 'Everyday Respect' program commitments (i.e. one worker per room per shift) through on- and/or off-site accommodation options. The OT ESIA described that OT is developing and implementing a long-term worker housing strategy (Section 4.12.4), however a strategy, incorporating both current and anticipated future demand, is not evident. The IESC finds that this commitment has not been met by OT in planning for worker accommodation, and recommends that a strategic plan be developed to demonstrate that potential E&S risks have been fully considered. If off-site accommodation is preferred, the ESAP requires that an ESIA is prepared, which also addresses water requirements of the accommodation and measure to mitigate any impacts to herder wells. In May-24, a new target of securing 50% residential employment in KB by 2035 was set. However, a Worker Accommodation Strategy for the coming ten years remains outstanding. Additional demands for worker accommodation were described for a shutdown activity in July-24, with offsite accommodation proposed as a solution. No NOC has been submitted describing and assessing E&S risks and proposed avoidance and mitigation measures. In Sept-24, a NOC was submitted specific to the use of KB rental apartments for temporary worker accommodation. While there has been some work on progressing the OT Town Transformation (TT) and Worker Accommodation framework, the IESC recommends that a separate NOC be developed about the TT program, which provides a roadmap for development of the strategy on the Program, including inter alia, an update on workforce projection and what this means for long term worker housing. OT's E&S commitments, responsibilities, governance and assurance processes in supporting KB development should also be stated. These issues should inform the overall approach to worker housing and if appropriate, any follow up actions that will meet OT's ESAP commitments on worker accommodation.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2022 – Sept 2024	The RAP commits OT to conducting the RAP Completion Audit in 2020	RAP, v3.0, s.9	Closed	II	**See Section 5.2.1.** The IESC opened a non-conformance in 2022 for lack of progress in engaging a suitably qualified consultant to conduct a Completion Audit, to close out 2011 impact mitigation measures. In May and September 2023, the NC remained open; the procurement of consultant services had, at the time of the audit, not been concluded and additional support requirements identified by the Outcome Evaluation of 2018 has been implemented and concluded since 2022. The lengthy period to complete the RAP CA is potentially confusing how OT will step out of RAP implementation and into wider, ongoing support to herder households in KB more broadly. As at May 2024: the consultant has been engaged and the fieldwork completed and report drafted, but not yet finalised. As at Sept 2024: the consultant has finalized the report and makes recommendations for 6 corrective actions. These can be incorporated into the RAP, SEP and RED Strategy for implementation, which are currently under development/revision by OT.

Table 9 – 1 summarizes the status of non-conformances starting from the beginning of OT operations.

Table 9-1 Non-Conformances Identified by the IESC Over Operations

Mission No.	Site Visit	New Non-Conformances Identified	Non-Conformances Closed	Non-Conformances remaining Open
M1	October 2013	26	N.A.	N.A.
M2	April 2014	11	8	29
M3	August 2014	2	3	28
M4	November 2014	7	10	25
M5	April 2015	0	3	22
M6	September 2015	4	6	20
M7	April 2016	1	9	12
M8	August 2016	4	2	14
M9	May 2017	1	6	9
M10	October 2017	0	3	6
M11	April 2018	1	3	4
M12	September 2018	1	1	3
M13	May 2019	1	1	4
M14	May 2020	1	2	3
M15	December 2020	1	1	3
M16	December 2021	0	0	2
M17	May 2022	2	1	3
M18	September 2022	3	1	2
M19	May 2023	0	3	4
M20	September 2023	4	0	4
M21	May 2024	1	0	9
M22	September 2024	2	2	9

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