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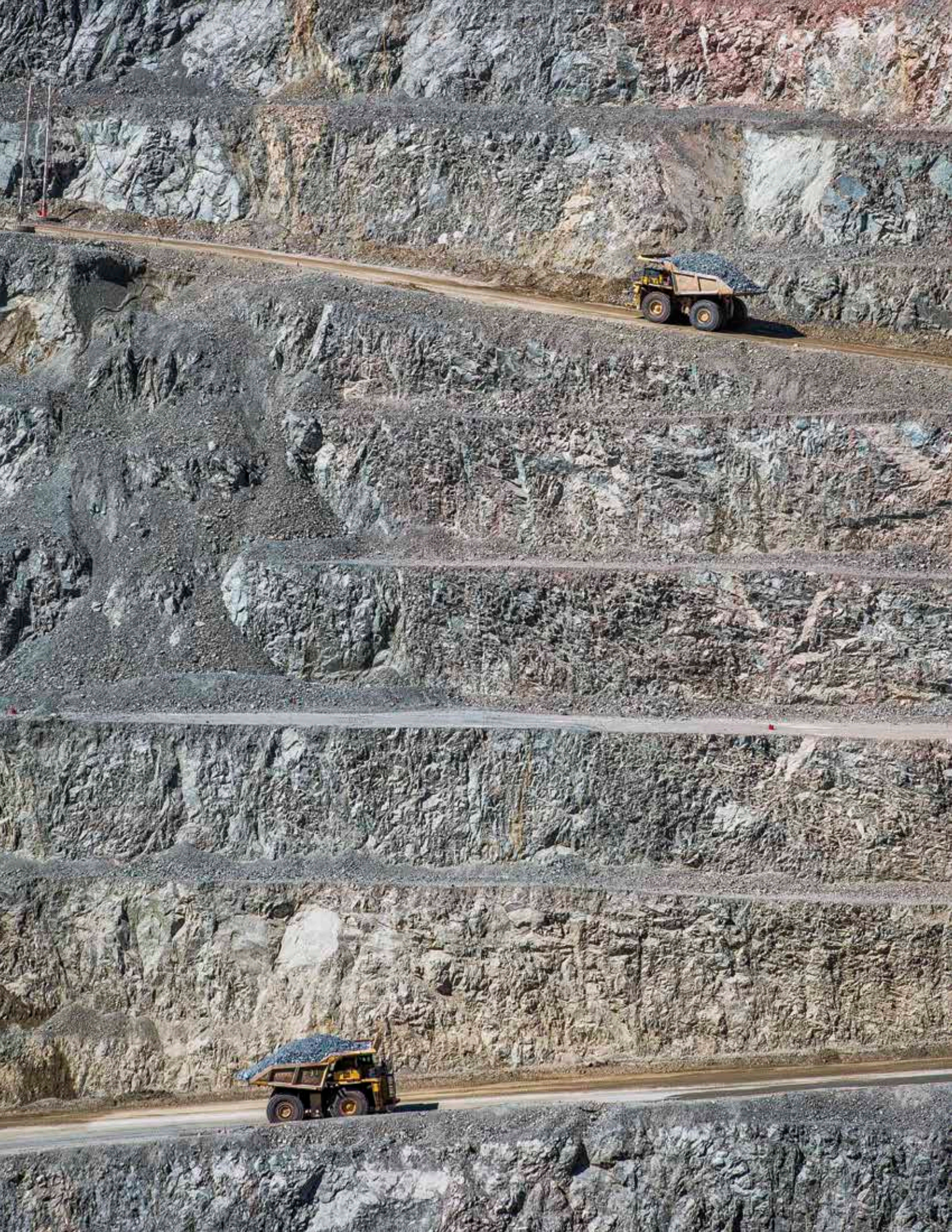


PRODUCT  
OF  
MONGOLIA

PRODUCT  
OF  
MONGOLIA

In the bagging plant,  
copper-gold concentrate  
is proudly packaged in  
bags made in Mongolia.





09

The open pit has been successfully operating for over six years.

Businesses like Oyu Tolgoi are extraordinary. They require world-class levels of excellence in multiple areas simultaneously. Superior asset quality, industry-leading safety, best-in-class workforce and strong sustainability have culminated in the Oyu Tolgoi of today and will lead to peak underground production in the coming years.





The concentrator complex is run entirely by Mongolian staff.



Dear Shareholders:

I am pleased to report that in 2018 your company continued to progress underground construction of the Oyu Tolgoi mine. We also maintained our history of strong operational performance of the open-pit mine. We are also pleased to report the continued accomplishments of the Oyu Tolgoi workforce, which is over 90% Mongolian nationals.

Oyu Tolgoi delivered a leading safety performance in 2018, despite increased levels of safety risk that are inherent with underground development. Oyu Tolgoi's All Injury Frequency Rate for 2018 was 0.16 per 200,000 hours worked and is evidence of the mine's safety culture. Safety is our top priority and it is clear how it permeates every aspect of the mine's operations. Oyu Tolgoi's safety performance is also indicative of the mine's best-in-class workforce. While we can never be complacent, the Board is pleased with the commitment to safety of the workforce and the exceptional safety results. Oyu Tolgoi and Turquoise Hill are committed to making sure everyone returns home safely each day.

Open-pit operations performed well during 2018 exceeding both copper and gold production guidance. As Oyu Tolgoi moved into the Phase 4 area of the mine, gold production increased significantly over 2017. The increased gold production and higher copper prices for the year resulted in strong operating cash flow.

Underground development, Oyu Tolgoi's main value driver, progressed more than 10 equivalent kilometers during 2018. The sinking of Shaft 2 was completed during the year and build out of that shaft is underway. Additionally, the sinking of Shaft 5 and commissioning was completed during the year.

Rio Tinto, as mine and construction manager, undertook a second annual schedule and cost re-forecast during 2018 and concluded the project is expected to

be completed at the \$5.3 billion capital budget estimate (excluding financing costs). Due to challenges encountered relating to Shaft 2, the re-forecast estimated a nine-month delay to sustainable first production from the underground mine. Turquoise Hill undertook a review of the Rio Tinto re-forecast in consultation with the Company's independent Qualified Person. That review found that project costs were expected to remain within the \$5.3 billion capital budget.

Since the Company's independent review after year end, Rio Tinto has advised Turquoise Hill that more underground geotechnical data has become available leading to improved understanding of the rock mass around and under the ore body. The data revealed some areas of the mine footprint is more variable than anticipated requiring some potentially significant changes to some elements of development design and the development schedule. Rio Tinto has additionally advised that detailed schedule and design work has begun as well as the necessary work to estimate the impact on cost of the anticipated delay. The Company is focused on reaching sustainable first production in the most expedient timeframe and is working closely with Rio Tinto and Oyu Tolgoi to this end.

The Board of Directors completed the annual site visit in 2018 in order to observe firsthand the progress of underground development and the overall operation. We continue to be impressed with the sheer scale of this world-class project. Our commitment to community development and corporate social responsibility continues. One of the highlights this year was our visit to the local community of Khanbogd, which is about 40 kilometers from Oyu Tolgoi and from where a significant number of the mine's workforce commute. Khanbogd is one of the fastest growing development hubs in Mongolia. We met with both the Governor and local Speaker and received their perspective on Oyu Tolgoi's positive

impact on the community. We also were able to visit facilities that the Oyu Tolgoi-funded Gobi Oyu Development Support Fund have provided to Khanbogd. This included a water treatment plant, a veterinary clinic and a new school that will educate more than 800 students. The Board was impressed and proud of Oyu Tolgoi's contributions to the communities that surround the mine. Since the development fund's creation in 2015, it has approved approximately \$20 million for more than 80 sustainable development projects, which have created more than 380 permanent jobs and benefited over 240,000 community members, including scholarships for more than 140 students. Oyu Tolgoi makes an annual \$5 million contribution to the fund.

Copper markets entered 2018 with robust prices but finished the year down approximately 20% due to global economic unease as well as near-term demand concerns. Turquoise Hill remains bullish on copper long term and we believe that Oyu Tolgoi is ideally positioned to benefit from a favourable market outlook, as Oyu Tolgoi's underground ramp-up is expected to coincide with forecast supply shortages anticipated around 2020-2021. Oyu Tolgoi is a world-class asset and is destined to be one of the largest copper-gold mines in the world.

In May, Jeff Tygesen, Chief Executive Officer, announced his retirement after a nearly 40-year career in the mining industry. He led the Company through significant moments in Turquoise Hill's history, including key stages of underground development and the milestone Oyu Tolgoi project finance. The Board is grateful to Jeff for his many contributions to the Company and in making Oyu Tolgoi a success.

We announced the appointment of Ulf Quellmann as Chief Executive Officer effective August 1. He is a seasoned executive with extensive knowledge of

Oyu Tolgoi and more than 20 years' experience in corporate finance, strategy, treasury and investor relations at General Motors, Alcan and Rio Tinto. The combination of his experience, project knowledge, leadership capabilities and relationships will enable Turquoise Hill to continue making progress towards achieving Oyu Tolgoi's full potential.

In September, we welcomed Alan Chirgwin to the Board. Mr Chirgwin is Vice President, Sales and Marketing for Rio Tinto Copper and Diamonds and enhances the expertise of the Board through his commercial background, proven track record in the resources sector and experience in the Asia Pacific region. He is a strong addition to the Board.

During 2019, we will remain focused on underground development of Oyu Tolgoi. Its completion is the foundation for unlocking the full value and economic potential of this long-lived and world-class mine, which benefits will be shared with all stakeholders.

As always, we are grateful to all the employees, staff and executives for their hard work and dedication to making Turquoise Hill Resources a success.

Sincerely,



R Peter Gillin

Chairman Peter Gillin and CEO Ulf Quellmann observing progress at Oyu Tolgoi from the top of Shaft 2.







More than 10 equivalent kilometres of underground development were completed in 2018.



Dear Shareholders:

It is a pleasure to be writing my first letter to the Turquoise Hill shareholders since my appointment as CEO on August 1, 2018. I am thrilled to join the management team. This is a terrific organization with fantastic people and a world-class asset in Mongolia that is well-placed to compete in an attractive marketplace with strong and robust fundamentals.

While I am new to the CEO role, I am not new to Turquoise Hill. I have served as a director since May 2017. Prior to being a director, I led arranging the \$4.4 billion project finance facility for Oyu Tolgoi, which involved a syndicate of international financial institutions, export credit agencies representing the governments of Canada, the U.S. and Australia, as well as 15 global commercial banks.

During my first day as CEO, I spoke on our second quarter results conference call outlining my priorities, which included:

- Operating the open pit efficiently and effectively and, most importantly, safely;
- Progressing underground construction on time and on budget;
- Putting in place a domestic power source for Oyu Tolgoi in Mongolia; and
- Working with our partners Erdenes Oyu Tolgoi and with the Government of Mongolia to resolve issues that are of concern to the Mongolian public and its elected representatives.

I wanted to take this opportunity to re-visit those priorities and provide an update on progress against each.

Open-pit operations

Oyu Tolgoi delivered a strong operational performance on multiple fronts in 2018. The most important measure of operational performance is safety. For 2018, Oyu Tolgoi achieved an industry-leading All Injury Frequency Rate (AIFR) of 0.16 per 200,000 hours worked. While the AIFR is a very important metric, safety

is much more than a number because it's about people. Oyu Tolgoi has taken a leading role in Mongolia about the vital importance of workplace safety. When I am in Mongolia, I am constantly impressed with how Oyu Tolgoi's leaders engage with the workforce on safety and how they are driving the mine's safety culture throughout every aspect of the operation.

During 2018, Oyu Tolgoi benefitted from the processing of Phase 4 ore that contained higher gold grades and resulted in us exceeding both copper and gold guidance. Copper and gold production for 2018 increased 1.1% and 150.0% respectively over 2017. Concentrator performance was strong and 2018 marked the third year in a row that Oyu Tolgoi has exceeded the concentrator's design capacity of approximately 100,000 tonnes of ore processed per day.

Revenue for 2018 increased more than 25% over 2017 due higher gold production as well as higher average copper prices for the year. Operating cash flow for the year increased more than 11% over 2017 due to higher gold revenue as well as higher average copper prices for the year.

Operating cash costs for 2018 increased more than 14% over 2017 primarily due to higher freight and royalty costs connected to increased sales revenue as well as a reduction in the amount of costs capitalized as deferred stripping. We also saw higher input prices such as fuel and power.

All told, 2018 was a good year for the open-pit team and we have every expectation that the strong performance will continue for 2019.

Underground development

The development of Hugo North Lift 1 continued to progress during 2018 with more than 10 equivalent kilometres of development by year end. Following the completion of the new crusher in late 2017

and the commissioning of Shaft 5 in mid-2018, we saw an increase in development rates over 2017.

In October, we announced that Rio Tinto, Oyu Tolgoi's manager, had undertaken its second annual schedule and cost re-forecast of the underground project. The re-forecast indicated lateral development had progressed well, the construction completion schedule remained on track for 2022 and the project was expected to be completed at the \$5.3 billion budget estimate. Despite significant development progress, Rio Tinto notified us of a delay to achieving sustainable first production to Q3'21.

During Q4'18, we undertook a review of the re-forecast with the assistance of our independent Qualified Person. We concluded that project costs are expected to be within the \$5.3 billion budget but there was an increasing likely risk of a further delay to sustainable first production beyond Q3'21. This was due to certain delays to the completion of Shaft 2 as well as increased ground support required to some key Shaft 2-related infrastructure.

Since the completion of our independent review, Rio Tinto has advised Turquoise Hill that further delays on the Shaft 2 fit out are expected to contribute to an overall schedule delay to sustainable first production beyond the end of Q3'21. Additionally, Rio Tinto is studying relocating ore passes on the footprint, which may modify the initiation sequence within Panel O.

We are working with Rio Tinto to understand the issues and, in parallel with the definitive estimate review, Turquoise Hill will assess the impact of any further delay to sustainable first production beyond the end of Q3'21 on the Company's cash flows, liquidity and funding requirements, as well as investigate potential mitigation options.

Domestic power for Oyu Tolgoi

The Oyu Tolgoi Investment Agreement (Investment Agreement) planned on a domestic source for the mine's long-term power requirements. Under the August 2014 Power Sector Cooperation Agreement (PSCA) between the Government of Mongolia and Oyu Tolgoi, the mine was working with the government to assess the viability of a Tavan Tolgoi-based power solution. In February 2018, Oyu Tolgoi was notified that the government had cancelled the PSCA. Following that announcement, we began active discussions with the government about the best solution to meeting Oyu Tolgoi's Investment Agreement requirement to domestically source its long-term power requirements.

On December 31, Oyu Tolgoi and the Government of Mongolia signed the Power Source Framework Agreement, which provides a binding framework and pathway forward for the construction of a Tavan Tolgoi-based power project, as well as establishes the basis for a long-term domestic power solution for the mine. The 300 megawatt plant will be majority owned by Oyu Tolgoi LLC and will be situated close to the Tavan Tolgoi coalfields.

I was delighted that the year ended on such a positive note and we were able to reach a win-win outcome with the government for Oyu Tolgoi's long-term power needs.

Working with our Mongolian partners

During 2018 in conjunction with Rio Tinto and Oyu Tolgoi, we actively engaged with the Government of Mongolia on a range of topics, including tax, power and the government's request to lower the interest rate on both the shareholder loan as well as their equity carry loan. There is a genuine interest by all parties to reach resolution. The most pressing item was power, which has been successfully resolved. We have a symbiotic relationship with the government

and Mongolian stakeholders. We will continue to work together for the good and success of Oyu Tolgoi and Turquoise Hill as well as for the people of Mongolia.

Oyu Tolgoi, and by extension Turquoise Hill, has been a key engine and contributor behind the transformation of the Mongolian economy. At the end of 2018, Oyu Tolgoi had a total workforce (open pit and underground employees and contractors) of about 17,000, of which 92.6% were Mongolian. This does not include jobs that are created indirectly in the broader supplier community. Between 2010 and the end of 2018, Oyu Tolgoi paid nearly \$2.3 billion in taxes, fees and other payments to the state and government budget. Between 2010 and the end of 2018, Oyu Tolgoi spent more than \$2.7 billion on national procurement. Clearly, we are very committed to supporting the local community and broader Mongolian economy.

We are also committed to protecting the environment and to safeguarding the health, safety and welfare of all employees, contractors and communities who are affected by Turquoise Hill and Oyu Tolgoi. The mine operates some of the best water conservation standards worldwide, using less than half the global average of water per tonne of ore processed for similar mines. This means all of the water at Oyu Tolgoi is used and reused until it is lost through evaporation. Since 2014, Oyu Tolgoi has consistently achieved annual water recycling rates above the mine's targeted recycling rate of 80%. During 2018, I was able to see first-hand the impact Oyu Tolgoi is having on the development of Khanbogd, which is a community about 40 kilometres from the mine. Through the Gobi Oyu Development Support Fund, Oyu Tolgoi has built a new school for more than 800 students, constructed a bulk water facility and provided a 35 kilometre paved road between the mine and town, which will accommodate about 1,600 members of

the Oyu Tolgoi workforce who will use the road for their daily commute. I am very proud of Oyu Tolgoi's contribution to this growing community.

Tremendous opportunity to invest in the next Tier 1 copper asset

Turquoise Hill presents a tremendous opportunity to invest in a copper and gold producer with direct participation in the world's next Tier 1 copper asset. Upon completion of the underground project, Oyu Tolgoi is expected be a Top 3 copper mine by production with first decile cash costs and the potential to support a 100-year mine life. These unique characteristics are expected to result in the generation of significant and long-dated free cash flow. The project is already well advanced with more than 40% of the capex already spent. We have a strong team who understands the key risks and have well-developed strategies in place to manage and mitigate these risks. Compared to other copper projects of similar scope, Oyu Tolgoi is significantly lower risk due to its level of development, established infrastructure, proximity to end market, a supportive local jurisdiction and experienced operator. We are well on the path of transforming Oyu Tolgoi into a truly Tier 1 asset. This is a major growth story and I am looking forward to every step of the journey.

Sincerely,



Ulf Quellmann





The Mine Dry complex, bottom, will service employees who work underground. It is flanked by the headframes of Shaft #5, right, and Shaft #1, top.





Underground development tunnels are supported with six-foot bolts and spray-on concrete.

## Superior Asset Quality

Oyu Tolgoi is an exceptional, world-class mineral deposit. When the underground reaches peak production, Oyu Tolgoi is expected to be the world's third largest copper mine. Once the underground is ramped up, Oyu Tolgoi is expected to have cash costs in the lower decile of the industry cost curve and generate significant cash flow.

Development of the underground mine is well-advanced and significantly de-risked compared to many copper projects. More than 40% of expansion capex has already been spent, surface processing infrastructure is already in place, Oyu Tolgoi has existing customers and the mine's concentrate is known to the market. Turquoise Hill's operating partner, Rio Tinto, is one of the world's largest mining companies and we have a strong relationship with our host government and partner, the Government of Mongolia, who owns a 34% stake in the mine.

With an asset located in a geologically-rich area, Turquoise Hill has the potential to discover new resources and mine additional reserves beyond the current Oyu Tolgoi mine plan through prospective exploration areas close to the existing operation.



During 2018, underground development continued to progress. During the year, the sinking of Shaft 2 (production and ventilation) was completed, the sinking of Shaft 5 (ventilation) and commissioning was finalized as well as the advancement of 10.3 equivalent kilometres of lateral development. Pre-sinking activities for Shafts 3 and 4 progressed during the year and sinking of each is expected to commence in the second half of 2019. Development of the convey-to-surface decline also continued to progress during the year.

Oyu Tolgoi spent approximately \$1.2 billion on underground expansion during the year resulting in total project spend of \$2.3 billion from January 1, 2016 to the end of 2018. In addition, Oyu Tolgoi had further capital commitments of \$1.2 billion as of December 31, 2018. At year end, the underground project had committed almost 87% of direct project contracts and procurement packages, of which 73% were to Mongolian companies. Since the restart of project development, Oyu Tolgoi has committed nearly \$2.3 billion to Mongolian vendors and contractors.

Significant progress on the Oyu Tolgoi underground project continued through 2018, with the construction of critical above and below ground infrastructure. Shaft 2-connected underground infrastructure progressed well during Q4'18 with the completion of the lining installation and handover of Ore Bin 11 as well as advancement of the new 6,000-tonne-per-day jaw crusher under construction.

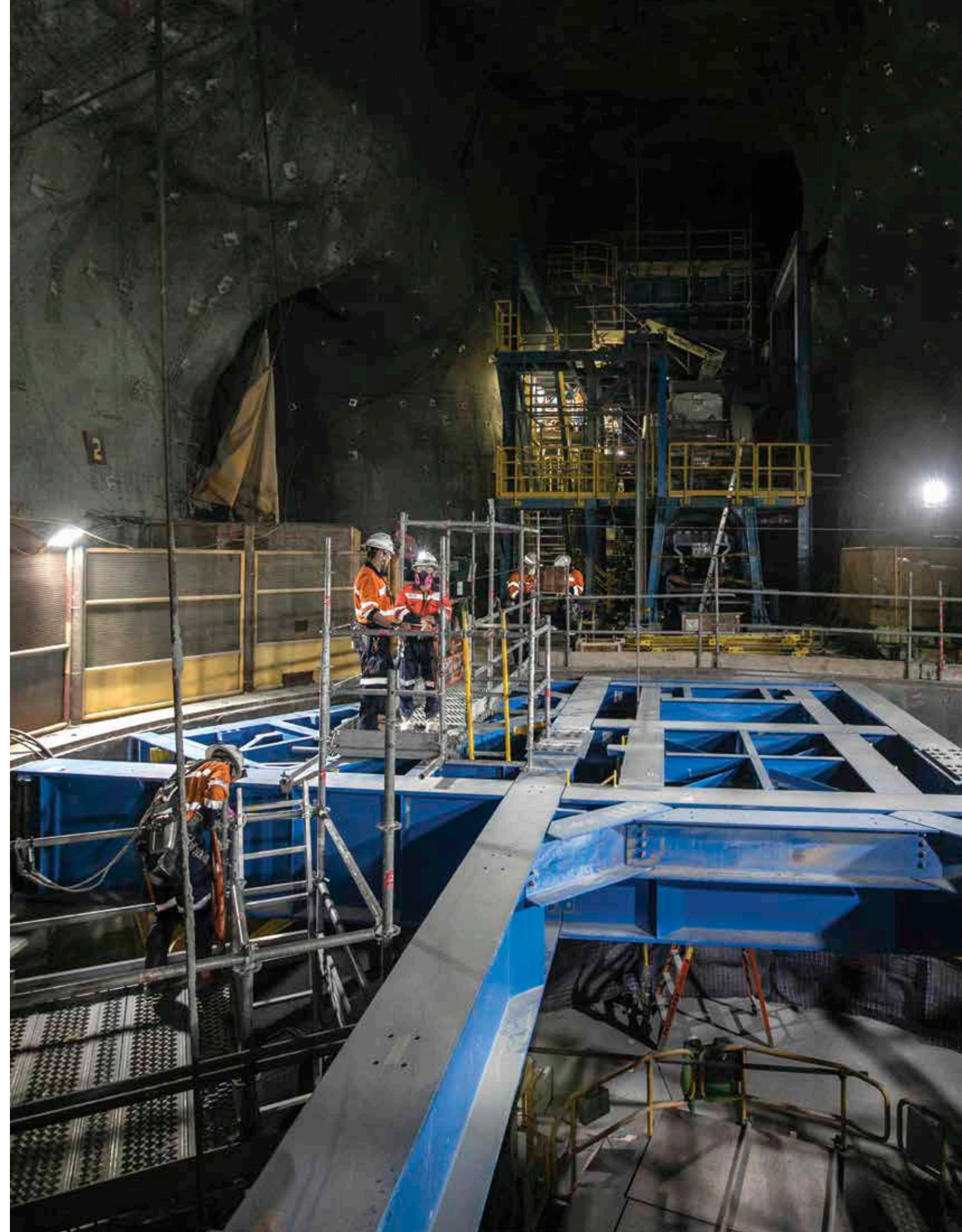
During Q4'18, Turquoise Hill carried out its own review of the previously announced Rio Tinto schedule and cost re-forecast for the project (2018 Rio Tinto Review) that had concluded a delay to sustainable first production was expected from Q1'21 to the end of Q3'21. The Company's review, with the assistance of the Company's independent Qualified Person and mining consultants OreWin Pty Ltd, found that project cost was expected to remain within the \$5.3 billion budget but that it is likely there will be further delays to individual activities and that this will result in additional delays to sustainable first production.

The Company's independent review found that the following key risks are developing.

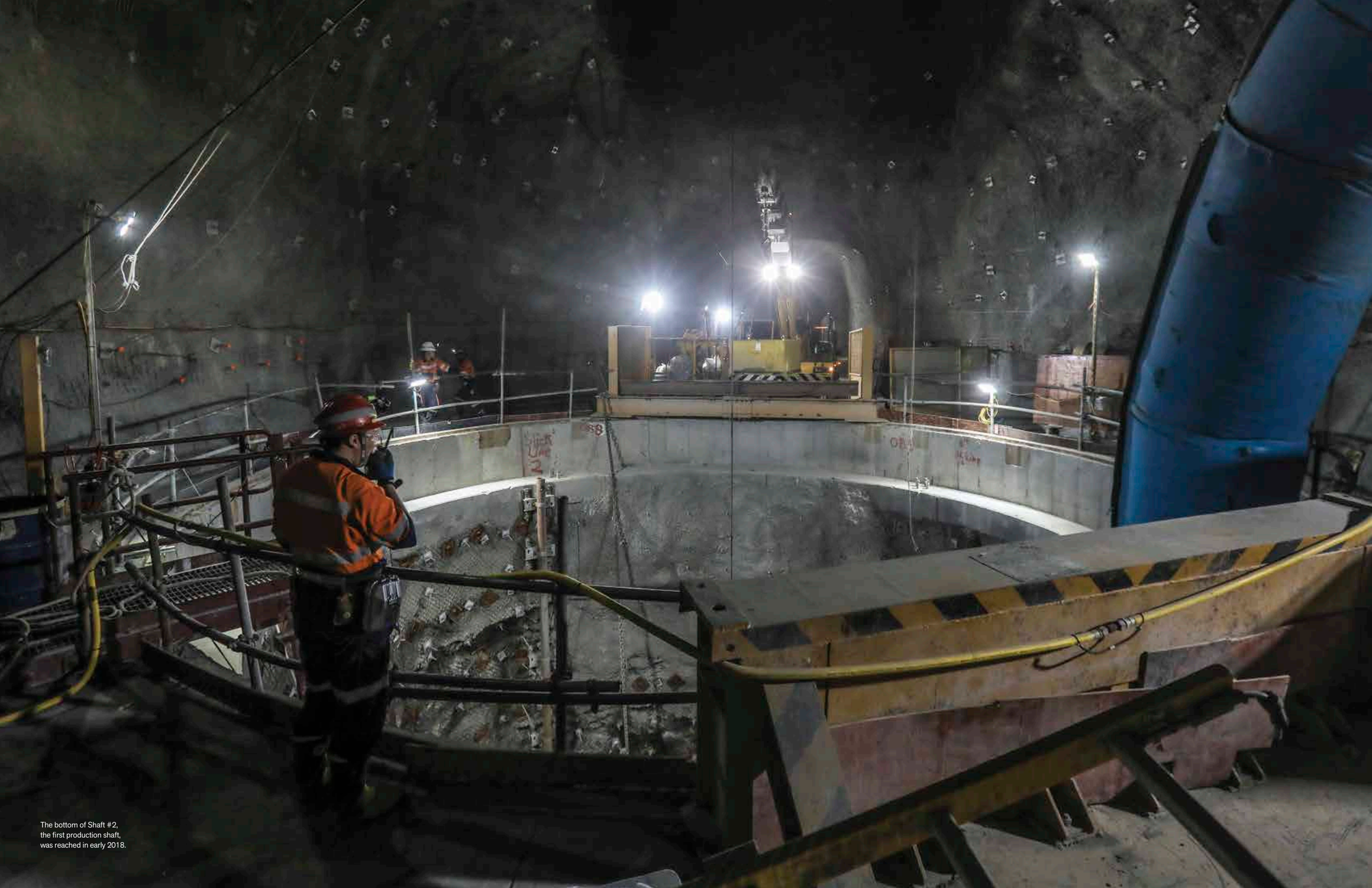
- Shaft 2 equipping delays were due to lower than expected productivity in steel and electrical installation as well as increased quality assurance measures. It was likely the completion date would move beyond Q1'19 and impact overall underground development rate increases.
- There have been delays to development progress and productivities in key areas. Even though lateral development has experienced consistent overall progress, development of some critical areas, such as the footprint, Primary Crusher 1 (PC1) system, Shaft 2 and Shaft 5, have been impacted by delays and, with the exception of Shaft 5, are critical path items for the project schedule. Small delays in lateral development on the footprint have had a direct impact on the project schedule critical path, even though total lateral development or equivalent development metres have been on budget. Development in the PC1 system (which includes the PC1 chamber and transfers 3, 4 and 5) has, since the time of the Rio Tinto Review data cut-off, fallen significantly behind target rates.
- The Company review indicated that in some areas there was a delay to the critical path from scope growth in mass excavation and additional ground support due to unexpectedly adverse geotechnical conditions. Although the ground support quantities and installation times are less, but not materially less than planned in the 2016 Oyu Tolgoi Feasibility Study and ground support quantities are reported as lower than planned, some types of ground support have had reduced installation times.

Since completion of the Company's independent review, Rio Tinto, as manager of the project, has advised Turquoise Hill that further delays on the Shaft 2 fit out are expected to contribute to an overall schedule delay to sustainable first production beyond the end of Q3'21. Additionally, Rio Tinto is studying relocating the ore passes on the footprint and this may modify the initiation sequence within Panel 0. The study will be incorporated into the definitive estimate review, as will work necessary to estimate any impact on cost and development schedule.

The 6,000-tonne-per-day jaw crusher will handle underground ore before being transported to surface for processing.







The bottom of Shaft #2,  
the first production shaft,  
was reached in early 2018.





Copper-gold concentrate is tested in the bagging plant to ensure quality control.

# Best-in-Class Workforce

Oyu Tolgoi delivered a strong operational performance in 2018 and marked the mine's fifth anniversary of concentrate shipments. Across that five year span, Oyu Tolgoi has produced some impressive metrics:

More Than

860K

Tonnes of Copper in Concentrates

Approximately

1.9M

Ounces of Gold in Concentrates

More Than

3.6M

Tonnes of Concentrate Produced

Approximately

\$6.7B

In Revenue

Approximately

\$2.5B

In Operating Cash Flow

More Than

\$1.6B

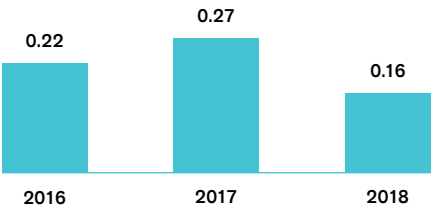
In National Procurement Spending



Safety is Oyu Tolgoi's core value and is part of everything they do. Oyu Tolgoi's workforce has delivered industry-leading safety statistics for several years. The All Injury Frequency Rate (AIFR) is an indicator of workplace health and safety and provides insight into an organization's efforts to protect its workforce from work-related hazards. For 2018, the mine's AIFR was 0.16 per 200,000 hours worked. Since 2016, the mine's AIFR has declined 27.3%.

All Injury Frequency Rate

(Per 200,000 hours worked)

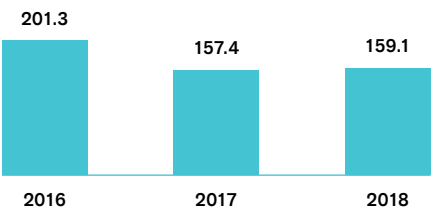


On top of Oyu Tolgoi's impressive safety metric, the open-pit workforce, which is more than 90% Mongolian and 22% female, has produced a number of strong operational metrics, including truck and plant utilization rates. For 2018, effective truck utilization was 74% and average truck payload was 107%. For the year, effective utilization of the concentrator was 96%.

Oyu Tolgoi exceeded both copper and gold production guidance for 2018. Full-year copper production of 159,100 tonnes and gold production of 285,000 ounces increased 1.1% and 150.0% respectively over 2017. During 2018, Oyu Tolgoi benefitted from the processing of Phase 4 ore that contained higher gold content.

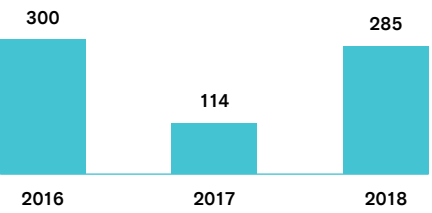
Production of Copper in Concentrates

('000 tonnes)



Production of Gold in Concentrates

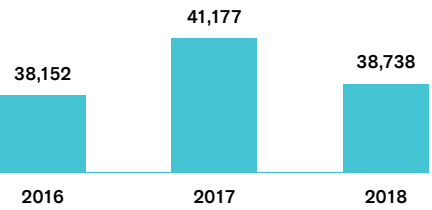
('000 ounces)



As planned, ore treated in 2018 decreased 5.9% over 2017 as the concentrator processed increasing amounts of harder Phase 4 ore throughout the year. In 2017, the concentrator was processing mainly Phase 6 ore, which was softer ore that contained very little gold. Over the last three years, Oyu Tolgoi has consistently exceeded the concentrator's design capacity of approximately 100,000 tonnes of ore processed per day.

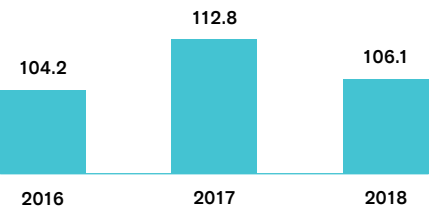
Ore Treated

('000 tonnes)



Average Daily Concentrator Rate

('000 tonnes)

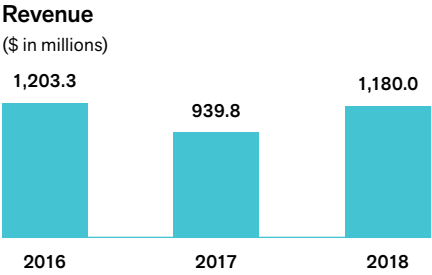


The open pit mine recently was renamed to honor the late D. Garamjav, one of the discovering geologists of the Oyu Tolgoi deposits.

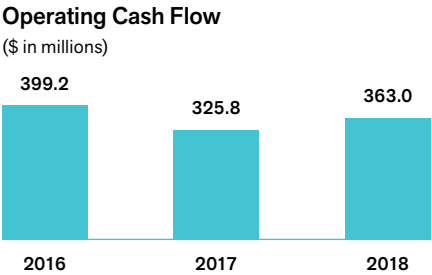




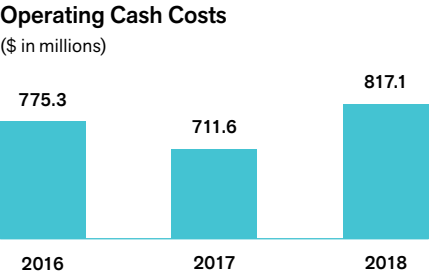
Revenue for 2018 increased 25.6% over 2017 due to the impact of increased gold production as well as higher average copper prices for the year.



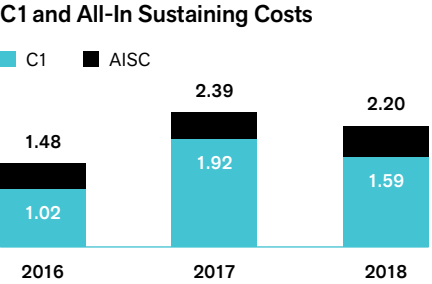
Operating cash flow for 2018 increased 11.4% over 2017 primarily reflecting the impact of higher revenue from increased gold production as well as higher average copper prices for the year.



Operating cash costs for 2018 increased 14.8% over 2017 primarily due to higher freight and royalty costs associated with increased sales revenue and a reduction in the amount of costs capitalized as deferred stripping. Other contributors include higher input prices for key items such as fuel and power.



C1 cash costs for 2018 decreased 17.2% over 2017 mainly due to higher gold sales and reduced unit costs of production driven by higher head grades and recoveries as Oyu Tolgoi benefitted from the processing of Phase 4 ore that contained higher gold content. All-in sustaining costs in 2018 decreased 7.9% over 2017 primarily due to the impact of higher gold sales and higher head grades and recoveries.



As of December 2018 Oyu Tolgoi had a diversity rate of 22%, which includes Mongolia's first female underground operator.







A haul truck carries  
162 tonnes of ore from  
the open pit.





Reclamation and environmental work starts well before mining and includes the cultivation of native plant species.

# Strong Sustainability

Turquoise Hill is committed to protecting the environment and to safeguarding the health, safety and welfare of all employees, contractors and communities who are affected by Turquoise Hill and Oyu Tolgoi. The Company is dedicated to performing its duties in a safe, environmentally responsible and effective manner.

Turquoise Hill supports and respects human rights consistent with the Universal Declaration of Human Rights and seeks to ensure that it is not complicit in human rights abuses committed by others. The Company respects and supports the dignity, well-being and rights of its employees, their families and the communities in which it operates. Turquoise Hill also sets out to build enduring relationships with its neighbours that demonstrate mutual respect, active partnership, and long-term commitment. The Company respects the diversity of indigenous peoples, acknowledging the unique and important interests that they have in the land, waters and environment as well as their history, culture and traditional ways.

Oyu Tolgoi's commitment to operating in a sustainable way is unshakable. Oyu Tolgoi is also committed to minimizing and mitigating the mine's operational impact on the environment while continuing to uphold the highest environment standards and drawing of the advice of environmental experts as well as local communities.

Since 2010, Oyu Tolgoi has been developing a Health, Safety and Environmental management system in compliance with IOS 14001 Environmental and OHSAS 18001 Occupational Health and Safety management standards. In 2013, Oyu Tolgoi was independently audited and received certification on these standards.



In meeting its sustainability commitments, Oyu Tolgoi complies with the following regulations and requirements:

- 01 All relevant environmental laws, regulations and standards of Mongolia;
- 02 Internationally recognized mining standards;
- 03 Environmental requirements and standards of the Oyu Tolgoi project finance lenders (e.g. International Finance Corporation, European Bank of Reconstruction and Development);
- 04 Rio Tinto’s environmental policies, strategies and standards; and
- 05 Regular monitoring of environmental performance and Oyu Tolgoi’s internal environmental monitoring programs.

Ventilation infrastructure for the 10-metre-diameter Shaft #2.





# Safety

Safety is Oyu Tolgoi's core value and is part of everything they do. Safety is not about numbers - it's about people. Oyu Tolgoi's policies, standards, programs and targets are important but the organization recognizes that they cannot deliver their safety vision without the support of the workforce. By implementing robust programs and processes, Oyu Tolgoi aims for a workplace and culture that focuses on health and safety as its top priority. Oyu Tolgoi's approach to safety consists of the following areas.

**Leadership** — Oyu Tolgoi's leaders have a responsibility to create and promote a safe workplace. The leaders are present in the field and are expected to be highly engaged with their respective teams.

**Safety culture** — Oyu Tolgoi is working to establish a safety culture that aligns organizational and individual employee values. The aim is to create a positive culture that will drive consistent behavior.

**Systems and processes** — Oyu Tolgoi seeks to adopt best practice safety management systems to deliver world-class safety performance. The mine's standards, which are aligned with broader Rio Tinto safety standards, provide a framework to measure, monitor and continuously drive improvements in safety performance

**Risk management** — Given the scale and complexity of Oyu Tolgoi's operations, the workforce faces significant risks that must be carefully managed. The organization takes proactive measures to control workplace risks by identifying hazards that can cause harm, assess the risks they pose on the workforce and use controls to prevent damage and harm. Risk management is embedded throughout Oyu Tolgoi and the mine's systems use risk assessments and controls for all tasks.

**Training and awareness** — A key component of Oyu Tolgoi's health and safety approach is that each employee receives the training, skills and knowledge they need to perform their job safely. All employees, contractors and visitors are provided with a safety orientation, general courses and job-specific courses that combine classroom and on-the-job training.

**Employee and contractor engagement** — Oyu Tolgoi believes that employees who feel valued and have a worthwhile contribution to make are much more likely to actively participate in the organization's programs. Contractors, who currently make up a significant portion of the mine's workforce, are expected to adhere to the same safety standards as employees. Through a regular contractor engagement conference, Oyu Tolgoi shares their safety approaches with contractors in order to build a strong safety performance together.

Underground development by its nature increases specific levels of safety risk and reinforces why safety is Oyu Tolgoi's main priority. The All Injury Frequency Rate (AIFR) is an indicator of workplace health and safety and provides insight into an organization's efforts to protect its workforce from work-related hazards. Oyu Tolgoi's 2018 AIFR of 0.16 per 200,000 hours worked was an industry-leading achievement. Since 2016, Oyu Tolgoi's AIFR has declined approximately 27%, which is the result of the constant work by the mine's management team to improve safety performance.

The Khamtdaa, or "Us Together," initiative is aimed at ensuring every employee works safely and returns home every night.





# Water

In the South Gobi desert, water is the most precious natural resource. To ensure ongoing availability of surface water, Oyu Tolgoi is committed to using water carefully, balancing the mine's operational needs while ensuring water is fully available for local residents and future generations.

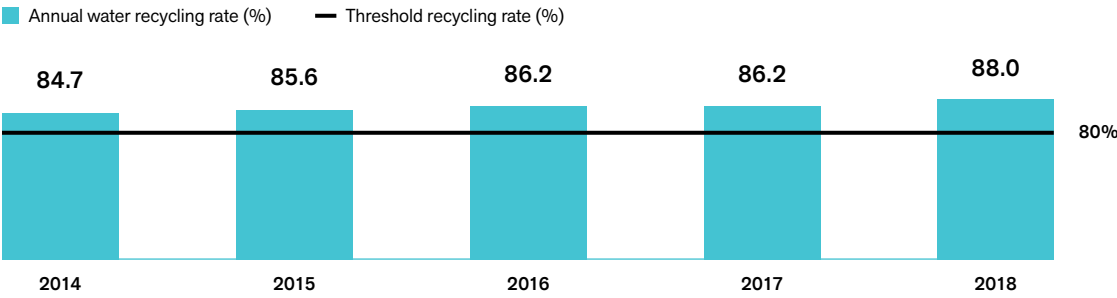
Oyu Tolgoi operates some of the best water conservation standards worldwide, using less than half the global average of water per tonne of ore processed for similar mines. This means all of the water at Oyu Tolgoi is used and reused until it is lost through evaporation. Since 2014, Oyu Tolgoi has consistently achieved annual water recycling rates above the mine's targeted recycling rate of 80%

This has been achieved through a number of measures:

- High-efficiency tailings reclaim;
- 100% cooling water reuse;
- 100% mine water recovery and reuse;
- 100% treated domestic waste water reuse;
- 100% truck wash water reuse;
- Measures to prevent evaporation;
- Ongoing water conservation measures; and
- A zero direct discharge policy, meaning that no waste water will be directly released into the environment.

Given the dry nature of the South Gobi region, coupled with the requirements of an operational mine and growing population, Oyu Tolgoi has undertaken detailed hydrogeological investigations in the region since 2003. Through these programs, Oyu Tolgoi has identified two large aquifers, geological formations containing underground water, which are at least 150 metres below the surface - far deeper than the surface water sources used by local people and animals.

## Annual Water Recycling Rate



Detailed hydrogeological investigations of the Gunii Hooloi aquifer have concluded that it has water reserves of 6,800,000,000 cubic metres. Under Oyu Tolgoi's water permits, the mine can only use less than 20% of the aquifer over 40 years, ensuring that the majority of the water remains underground for future generations.

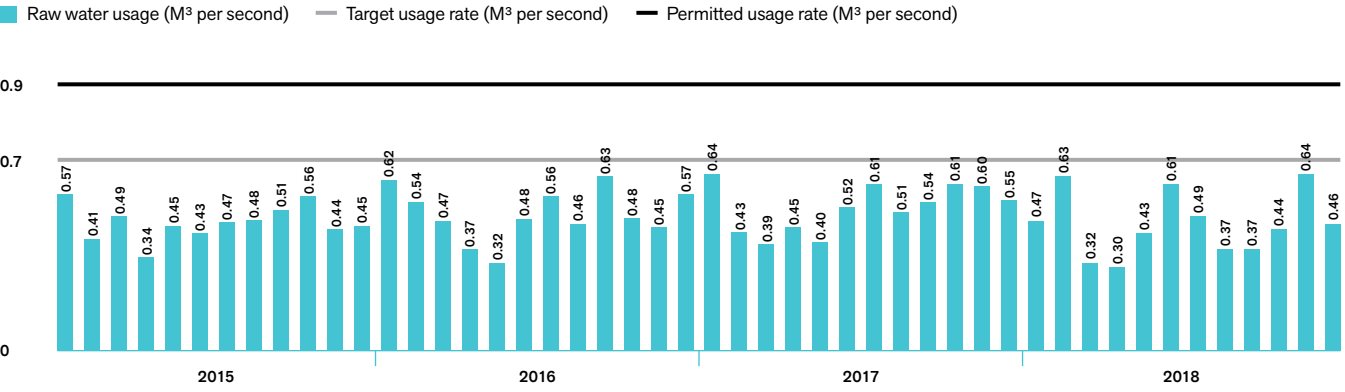
Oyu Tolgoi is committed to protecting the quantity and quality of water in local wells and to supporting the development of new water supplies for the local community. The organization has been performing extensive monitoring of wells, springs, and boreholes since 2003.

Ongoing monitoring and assessment continues to be undertaken and any identified issues are proactively addressed. In the event of any impact on community water as a result of our activities, Oyu Tolgoi is committed to mitigating the impact in a manner that is agreeable to the people involved and which guarantees the provision of equivalent water quantity and quality.

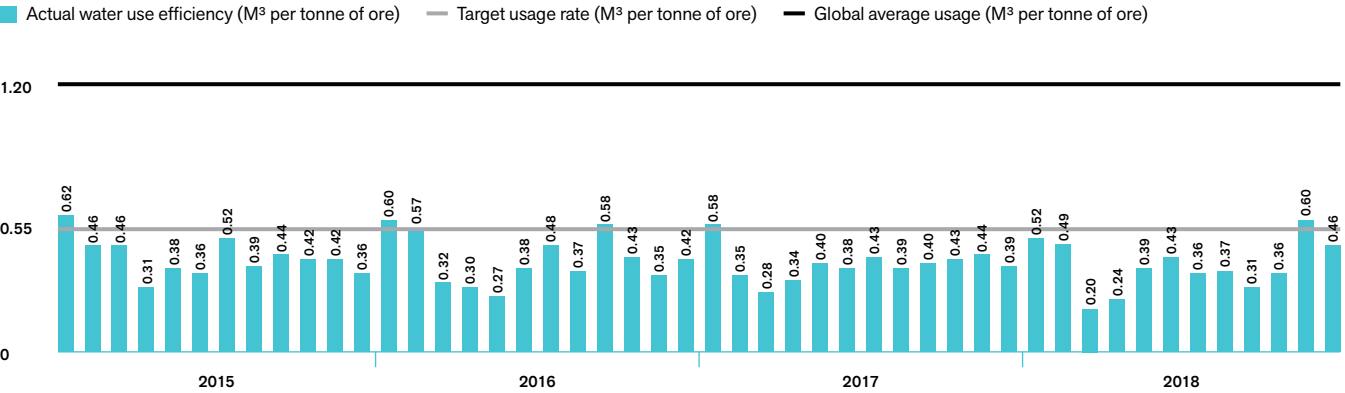
Oyu Tolgoi's Participatory Environmental Monitoring program aims to create and maintain active community participation in environmental monitoring. This two-way dialogue improves the mine's monitoring and the transparency of their environmental performance.

In April 2017, Oyu Tolgoi inaugurated the Khanbogd Bulk Water Facility, which was fully funded by Oyu Tolgoi and grew out of the mine's water exploration program. The \$6.9 million bulk water facility provides safe, clean drinking water to Khanbogd, with a 6.6 kilometre network of pipeline distributing water across the town. The facility will support future development of Khanbogd, with a capacity to supply water to over 13,000 residents and has the potential to be further expanded.

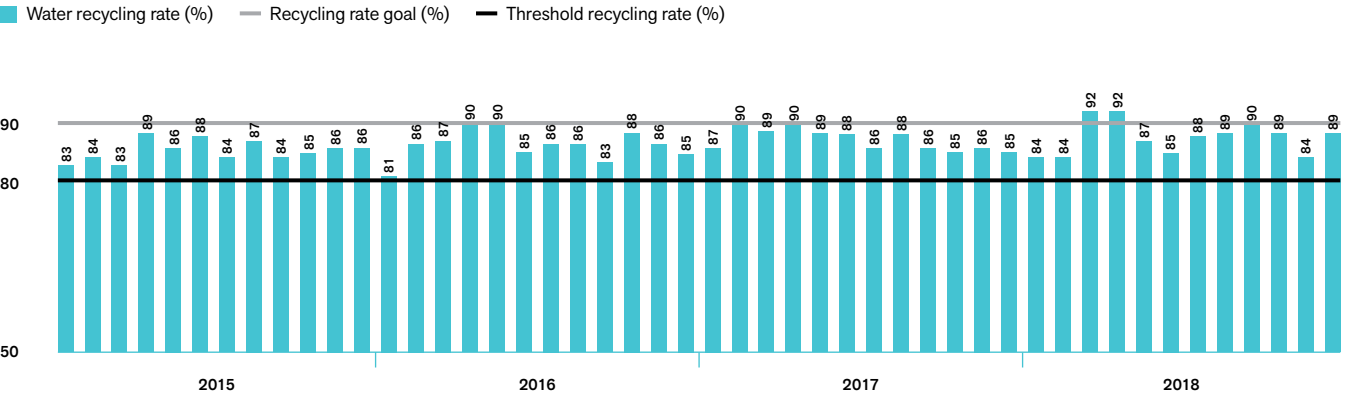
## Raw Water Usage



## Raw Water-Use Efficiency



## Monthly Water Recycling Rate





# Biodiversity

For Oyu Tolgoi, biodiversity refers to the variety of life on earth - the different animals, plants and micro-organisms, and the ecosystems they inhabit. Oyu Tolgoi's approach aims to minimize the mine's operational impact and contribute to biodiversity conservation so that the region ultimately benefits from the mine's presence.

## Flora

### Protecting the plant life of the South Gobi

A study identified an estimated 158 plant species in the area surrounding Oyu Tolgoi. By implementing effective controls, Oyu Tolgoi believes that its operations can take place while mitigating any adverse impact on existing vegetation within the project area.

To achieve this, the mine has developed a range of strategies focusing on land, reclamation, and vegetation protection to ensure disturbance to vegetation is minimal and that any land disturbed is fully rehabilitated.

## Fauna

### No adverse impact on local wildlife

Despite its harsh climate, the Gobi region is rich in biodiversity, including several rare and protected species. Oyu Tolgoi aims to prevent disturbance and other adverse impacts on species, their habitats, populations, and migratory patterns. This includes changes to vegetation that would affect migratory mammals and bird species, nesting sites for birds, and shelters for small mammal species.

To achieve this, Oyu Tolgoi carries out extensive wildlife observations and research studies. The mine has established partnerships with national and international wildlife conservation organizations to carry out wildlife surveys and ensure that there is no loss of biodiversity in the South Gobi.

Mongolia's southern Gobi Desert hosts livestock living alongside a diverse range of mammalian, avian and reptilian animals.





# Land Management

As part of Oyu Tolgoi's sustainable land management policy, the mine's closure and rehabilitation plans have been developed in accordance with Mongolian laws and standards. This keeps land degradation to a minimum.

## Land Disturbance Management

In order to ensure minimal land disturbance, Oyu Tolgoi requires an environmental inspection and assessment before any land disturbance occurs. A permit for work is only approved after protective actions identified in the assessment are completed. This process eliminates or minimizes potential impact on local water, biodiversity, the community, cultural heritage, and many other areas. It also ensures compliance with environmental and other relevant legislation. This procedure also applies to Oyu Tolgoi sponsored projects.

## Topsoil Management

The Oyu Tolgoi topsoil management plan is one of the most important elements in rehabilitating land affected by the mine's operations and infrastructure development, helping to restore vegetation and biodiversity.

Before the start of any land disturbance activity, Oyu Tolgoi strips and stores the topsoil so it can be used to rehabilitate the land after the work is complete.

## Rehabilitation

Areas that were disturbed during exploration, development and operations are rehabilitated during and after the project, including through the development of a mine closure plan at the start of the construction phase. Making disturbed areas safe for people, animals, and the environment is one of the main reasons for proper rehabilitation. To make an area safe, technical rehabilitation has to be completed to high standards. Oyu Tolgoi has a dedicated team to work with contractors to monitor rehabilitation.

Experiments and studies have been taking place since 2003 to prepare for rehabilitation during all stages of the project. By August 2014, 203.4 hectares of biological rehabilitation and 781.03 hectares of technical rehabilitation has been carried out. Reforestation has taken place across an area of 17.21 hectares. Throughout the process, preference is given to local native species, seeds harvested from native vegetation, and seeds purchased from the local community.

In 2018, planned biological rehabilitation was completed on 12.47 hectares and technical rehabilitation was completed on an additional 13.88 hectares. A significant achievement during the year was the first hand-over of successfully rehabilitated land to local authorities. This consisted of over 50 hectares of rehabilitated saxaul forest in the Gunii Hooloi area.

Continuous and steady rehabilitation efforts reduce the risks of incidents after mine closure. It is expected that new methods and technologies, based on the best practice perfected during years of rehabilitation work, will be used.

Summer rains bring new color, and life, to the region around Oyu Tolgoi, including rehabilitated areas seen here.





# Greenhouse Gas Emissions

Oyu Tolgoi has implemented an Atmospheric Emissions Management Plan that outlines the applicable national, Rio Tinto and international standards and defines Oyu Tolgoi's key management atmospheric emissions controls. The plan also includes monitoring and reporting procedures. One of the key management controls is reporting on Oyu Tolgoi's greenhouse gas emission performance against the estimated emission targets. Oyu Tolgoi has a comprehensive greenhouse gas inventory and reporting process and continues to explore energy-saving opportunities through a registry focused on energy saving and greenhouse gas reduction initiatives.

The following table highlights Oyu Tolgoi's emissions intensity per unit of production and total emissions.

In 2015, there was a 22.9% decrease in Oyu Tolgoi's emissions intensity over 2014 and a further 8.1% decrease in 2016. These decreases are attributable to operational efficiency gains and improved data preparation and maintenance since the commencement of monthly greenhouse gases emissions reporting in 2014. In 2017, emissions intensity increased 28.2% over 2016 due to the inclusion in the greenhouse gases emissions reports of the electricity used in underground development. In 2018, emission intensity decreased 5.5% over 2017. Emission intensity is expected to decrease in 2019 while an increase is anticipated in 2020 to coincide with the first draw bell production from the underground mine.

Oyu Tolgoi uses the highest-quality fuel available in Mongolia in order to reduce gaseous emissions. Other measures implemented to reduce greenhouse gas emissions include:

- Use of high-efficiency motors;
- Replacing high-efficiency lighting with LED;
- Addition of expert control automation to maximize concentrator throughput and reducing the power requirements per tonne of concentrate produced;

- Adopting new lime automation processes for pH control to improve slacking efficiency and reduce lime consumption;
- Increased water recycling rates through the use of expert control automation leading to reduced power at the thickener that would otherwise require water being pumped to and from the tailings storage facility;
- Use of closed loop heating in the concentrator, which is designed to utilize the heat generated from the mills;
- Recycling of SAG mill ball media;
- Reduction in food waste from smaller plate sizes in mess facilities;
- Progressive rehabilitation implementation immediately following land disturbing activities completion or as soon as practicable on land that is no longer needed for current or future operational use; and
- Replacing diesel generators and coal-fired boiler by connecting to permanent power and heat supply systems.

Oyu Tolgoi incorporates a rigorous process of avoiding and minimizing land clearance. The mine's land disturbance permit process keeps the footprint as low as possible and Oyu Tolgoi's comprehensive inventory and Geographical Information System (GIS) is in place. Based on baseline and GIS data, Oyu Tolgoi's rehabilitation process has progressed well with completion of 99% of available offsite areas (excluding facilities footprint). Onsite waste rock dump progressive rehabilitation is in the study and preparation process.

Through the preparation and study of native plants for biological rehabilitation, Oyu Tolgoi has developed a Native Plant Propagation Centre. One significant benefit of the facility is to provide free tree and shrub saplings to local communities for landscaping and greening. As of the end of 2017, the centre had provided over 65,000 saplings to local towns and communities.

A light winter snow blankets Oyu Tolgoi.

	2014a	2015a	2016a	2017a	2018a	2019e	2020e
Emissions Intensity target (tCO <sub>2</sub> –e/ unit of production)	N/A	1.90	1.76	2.46	2.12	1.96	2.75
Emissions intensity (actual)	2.40	1.85	1.70	2.18	2.06	–	–
Total emissions actual (tonnes CO <sub>2</sub> –e)	1,353,130	1,463,002	1,429,626	1,572,355	1,514,205	–	–

a = actual, e = expected





# Cooperation Agreement with Local Communities

In April 2015, Oyu Tolgoi signed a Cooperation Agreement with the mine's local communities, which was the first of its kind in Mongolia. The agreement set out how the parties will work together toward sustainable development in areas such as water, environment, pastureland management, cultural heritage, tourism as well as local business development and procurement.

Subsequently in September 2015, Oyu Tolgoi established the Gobi Oyu Development Support Fund agreeing to make a \$5 million contribution annually for expenditure on South Gobi sustainable development. The fund's board consists of four Oyu Tolgoi management representatives and three community representatives. Funding has been approved for numerous projects, including a completed healthcare center, an animal health center, an animal disinfection program and the building of several schools. In 2015, the Tripartite Council was established consisting of local herders, local community representatives and Oyu Tolgoi.

Since its creation in 2015, the development fund has approved approximately \$20 million for 83 sustainable development projects and programs, which have resulted in the creation of more than 380 permanent jobs, benefits to over 240,000 community members, including scholarships for 143 students, among many other achievements.

In late December 2018, a 35.1 kilometre paved road from Oyu Tolgoi to the local community of Khanbogd, which was a development fund project, was commissioned. Approximately 1,600 members of the Oyu Tolgoi workforce commute daily on the Khanbogd road. The project was selected as Best Construction and Infrastructure Project of the Umnugovi province for 2018.

Examples of projects implemented through the fund includes:

- [Khanbogd bulk water facility;](#)
- [A heating plant in Manlai soum to provide heat to 2,400 residents;](#)
- [A Gobi grove in Manlai soum with 1,000 trees and a watering system over five hectares;](#)
- [Three high output breeds of camels;](#)
- [Creation of a local brand of cashmere; and](#)
- [The protection of 42 historical sites, along with local ranger's education, to ensure continuing protection and preservation of those sites.](#)

From 2014 – 2018, Oyu Tolgoi has invested more than \$32 million in sustainable long-term projects in the South Gobi community.



Students in Khanbogd's newly-constructed secondary school.

In December 2018, the Gobi Oyu Development Support Fund commissioned and completed the Khanbogd secondary school No.2 with capacity to educate 840 students, including 200 kindergarten children. The project was proposed by the provincial Governor's office when they identified capacity challenges in the town's school system. Students were studying in multiple shifts due to a lack of classrooms creating an unfavourable environment for students and teachers. Additionally, Khanbogd children had limited access to kindergarten facilities.

Khanbogd students will now be studying under teachers and administrator's best practice from the New Era government laboratory school of Ulaanbaatar, who have been implementing the globally renowned Cambridge school standard in the nation's capital. The new school will apply the national curriculum implemented by the international management standard for the next three years with the aim of becoming a leader in the natural science field in secondary education. Management costs and teacher trainings are covered by the fund.

According to a calculation by the Global Partnership for Education, a 0.1% improvement in a country's education equality can, over 40 years, raise its per capita income by 23%. The Khanbogd school investment aims to close the education gap between urban and rural Mongolia. Students in Khanbogd can now enjoy a regular classroom schedule and utilize their after-school time for research and development activities.

The school's 37 classrooms are fully furnished with all the tools and equipment necessary for learning at a cost of approximately \$2.8 million.

Khanbogd is a cornerstone for Oyu Tolgoi's achievements and is one of the fastest growing development hubs in Mongolia. Oyu Tolgoi has devoted its efforts to turning Khanbogd into a self-sustaining town through critical infrastructure contributions, such as power, water, roads, healthcare, environment and education. With the addition of the school and kindergarten complex, Oyu Tolgoi is certain that the foundation of a robust community will be strengthened and many more doors will open for future generations.



# Environmental and Social Impact Assessment Management

In 2012 as part of project finance requirements, Oyu Tolgoi undertook a comprehensive Environmental and Social Impact Assessment (ESIA), which was performed independently. The process involved consultations with local and regional authorities, local businesses, community organizations and local community representatives.

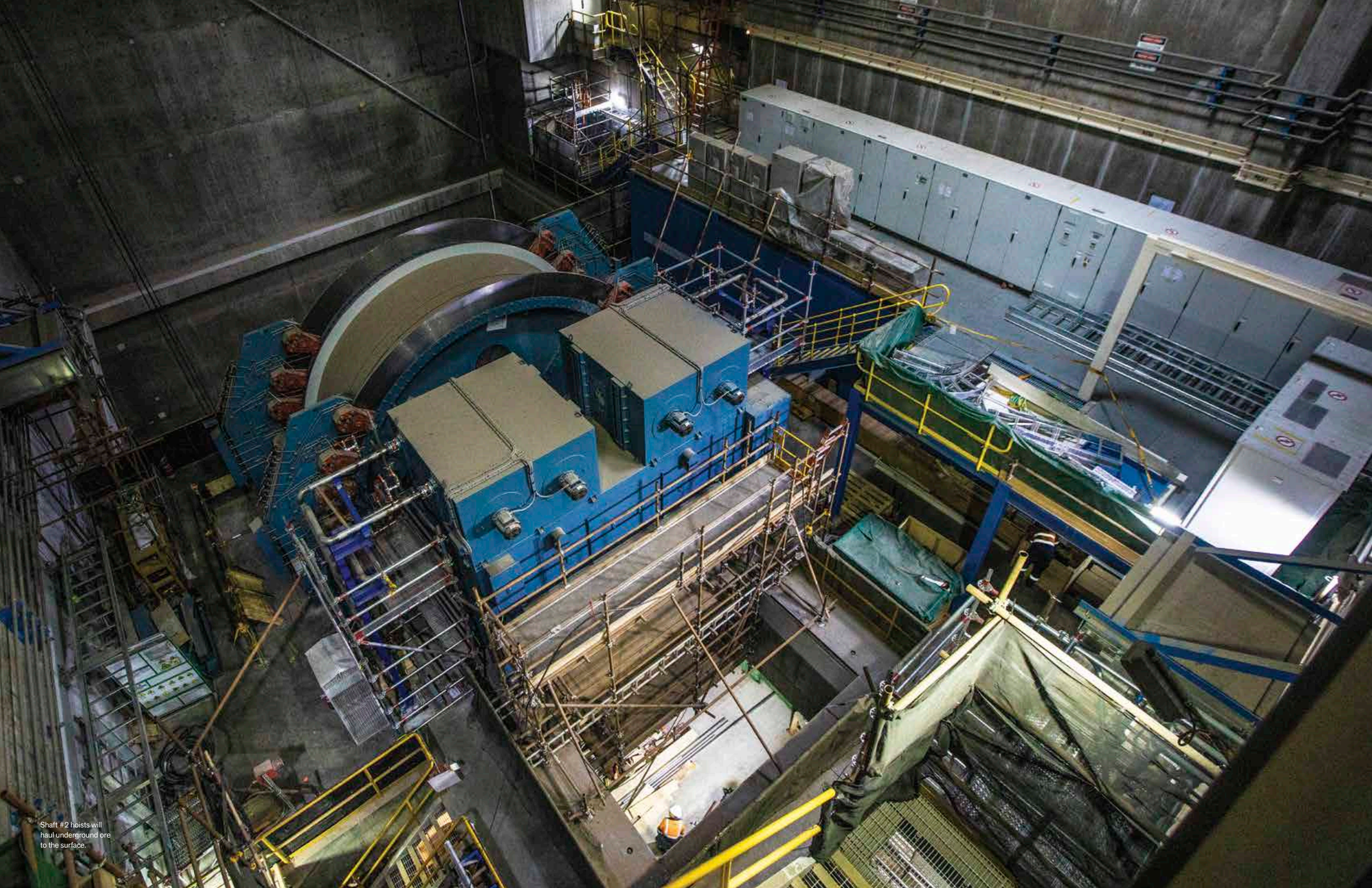
The study provided an evaluation of both the direct and indirect impacts of Oyu Tolgoi's operations and project on the society, economy and environment in Mongolia. It described how Oyu Tolgoi expects to minimize and manage the mine's environmental and social impact as well as maximizing positive benefits over the mine's life. It also demonstrated a process to ensure local communities are consulted in decisions to be made throughout the life of Oyu Tolgoi's operation.

The first ESIA was published in 2013 showing a 91% compliance rate. A subsequent independent audit published in 2016 showed a 98% compliance rate. Based on these assessments, Turquoise Hill believes that Oyu Tolgoi has no areas of non-compliance.

The 35-kilometre paved Oyu Tolgoi-Khanbogd road was opened in early 2019 and will provide a safer route between site and the local community.







Shaft #2 hoists will haul underground ore to the surface.



Board of Directors

**Peter Gillin – Chairman**  
Corporate Director

**Ulf Quellmann<sup>1</sup>**  
Chief Executive Officer

**Alan Chirgwin<sup>2</sup>**  
Vice President, Sales and  
Marketing, Copper &  
Diamonds, Rio Tinto

**Dr. James Gill<sup>1, 3, 4</sup>**  
Corporate Director and  
Mining Consultant

**Stephen Jones<sup>1</sup>**  
Head of Technical Review,  
Rio Tinto

**Russel Robertson<sup>2, 3, 4</sup>**  
Corporate Director

**Maryse Saint-Laurent<sup>2, 3, 4</sup>**  
Corporate Director

<sup>1</sup> Member of Health, Safety, Environment  
and Communities Committee

<sup>2</sup> Member of Nominating and Corporate  
Governance Committee

<sup>3</sup> Member of Audit Committee

<sup>4</sup> Member of Compensation and  
Benefits Committee







Oyu Tolgoi is expected to produce 125,000 to 155,000 tonnes of copper and 180,000 to 220,000 ounces of gold in concentrates for 2019.

# MD&A and Financial Statements

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## Financial Statements

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53	Consolidated Statements of Comprehensive Income for the years ended December 31, 2018 and 2017
54	Consolidated Statements of Cash Flows for the years ended December 31, 2018 and 2017
55	Consolidated Balance Sheets as at December 31, 2018 and December 31, 2017
56	Consolidated Statements of Equity for the years ended December 31, 2018 and 2017
57	Notes to the Consolidated Financial Statements





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## **Turquoise Hill Resources Ltd.**

Management's Discussion and Analysis of Financial Condition  
and Results of Operations

December 31, 2018

**TURQUOISE HILL**



**INTRODUCTION**

This management discussion and analysis of the financial condition and results of operations (MD&A) of Turquoise Hill Resources Ltd. should be read in conjunction with the audited consolidated financial statements of Turquoise Hill Resources Ltd. and the notes thereto for the year ended December 31, 2018. The financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). In this MD&A, unless the context otherwise dictates, a reference to the Company refers to Turquoise Hill Resources Ltd. and a reference to Turquoise Hill refers to Turquoise Hill Resources Ltd. together with its subsidiaries. Additional information about the Company, including its Annual Information Form (AIF), is available under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

References to "C\$" refer to Canadian dollars and "\$" to United States dollars.

The MD&A refers to the All Injury Frequency Rate (AIFR), which is an indicator of workplace health and safety and provides insight into an organization's efforts to protect its workforce from work-related hazards. Oyu Tolgoi's AIFR is based on 200,000 hours of work exposure.

This MD&A contains certain forward-looking statements and certain forward-looking information. Please refer to the cautionary language commencing on page 43.

**All readers of this MD&A are advised to review and consider the risk factors discussed under the heading "Risk and Uncertainties" in this MD&A commencing on page 24.**

The effective date of this MD&A is March 14, 2019.

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**1. SELECTED ANNUAL FINANCIAL INFORMATION**

	Year Ended December 31		
	2018	2017	2016
Revenue	\$ 1,180.0	\$ 939.8	\$ 1,203.3
Income for the year	\$ 394.3	\$ 110.9	\$ 106.6
Net income attributable to owners of Turquoise Hill	\$ 411.2	\$ 181.2	\$ 210.6
Basic and diluted income per share attributable to owners of Turquoise Hill	\$ 0.20	\$ 0.09	\$ 0.10
Total assets	\$ 13,312.0	\$ 12,833.3	\$ 12,460.2
Long-term liabilities			
Borrowings and other financial liabilities	\$ 4,187.3	\$ 4,159.1	\$ 4,139.1
Decommissioning obligations and deferred income tax liabilities	\$ 179.5	\$ 151.5	\$ 127.0

Note: Financial information has been extracted from the audited financial statements of Turquoise Hill Resources, which are prepared in accordance with IFRS.

**2. REVIEW OF OPERATIONS**

Turquoise Hill is an international mining company focused on the operation and further development of the Oyu Tolgoi copper-gold mine in southern Mongolia, which is the Company's principal and only material mineral resource property. Turquoise Hill's ownership of the Oyu Tolgoi mine is held through a 66% interest in Oyu Tolgoi LLC (Oyu Tolgoi); the remaining 34% interest is held by Erdenes Oyu Tolgoi LLC (Erdenes), a Mongolian state-owned entity.

Income in 2018 was \$394.3 million compared with \$110.9 million in 2017. The increase mainly reflects the \$240.2 million increase in revenue driven primarily by the 150.0% increase in gold production. In addition, there were reduced unit costs of production driven by higher head grades and recoveries as Oyu Tolgoi benefitted from the processing of Phase 4 ore that contained higher gold content. Further, there was reduced depreciation and depletion due to certain long-lived assets reaching the end of their depreciable lives and lower finance costs due to higher amounts capitalized to property, plant and equipment.

Cash generated from operating activities in 2018 was \$180.0 million compared to \$118.0 million in 2017, primarily reflecting the impact of higher sales revenue.

Capital expenditure on property, plant and equipment was \$1.3 billion on a cash basis in 2018 compared with \$917.5 million in 2017, attributed principally to underground development (\$1.2 billion) with the remainder related to open-pit activities.

Turquoise Hill's cash and cash equivalents at December 31, 2018 were \$1.6 billion.

**Financial and operational highlights for 2018**

**Full year 2018**

- Oyu Tolgoi achieved an industry-leading All Injury Frequency Rate of 0.16 per 200,000 hours worked for the year ended December 31, 2018.
- On December 31, 2018, Oyu Tolgoi and the Government of Mongolia signed the Power Sector Framework Agreement providing a pathway forward for a Tavan Tolgoi-based power plant.
- Copper production of 159,100 tonnes for 2018 increased 1.1% over 2017 and exceeded guidance by 2.6%.

- Gold production of 285,000 ounces in 2018 increased 150.0% over 2017 and exceeded guidance by 1.8%.
- Mill throughput for 2018 decreased 5.9% over 2017 due to increased processing of harder Phase 4 ore throughout the year.
- Revenue of \$1.2 billion in 2018 increased 25.6% over 2017 due to the significant increase in gold sales, a 5.0% increase in copper sales volumes and the impact of higher average copper prices.
- For 2018, income of \$394.3 million increased 255.4% over 2017 reflecting the significant increase in gold revenue and reduced unit costs of production driven by higher head grades and recoveries.
- For 2018, Oyu Tolgoi's cost of sales was \$2.25 per pound of copper sold (\$2.32: 2017), C1 cash costs of \$1.59 per pound of copper produced (\$1.92: 2017) and all-in sustaining costs of \$2.20 per pound of copper produced (\$2.39: 2017)<sup>1</sup>.
- For 2018, mining costs<sup>1</sup> per tonne were \$2.13 (\$1.51: 2017), milling costs<sup>1</sup> per tonne were \$7.11 (\$6.36: 2017) and G&A costs per tonne were \$3.03 (\$2.93: 2017).
- Total operating cash costs<sup>1</sup> of \$817.1 million for 2018 increased 14.8% over 2017 due to higher freight and royalty costs, a reduction in costs capitalized as deferred stripping as well as higher fuel and power costs.
- During 2018, underground lateral development advanced 10.3 equivalent kilometres, a 68.9% increase over 2017.
- Underground expansion capital for 2018 was \$1.2 billion, meeting the upper-end of the Company's guidance.
- During 2018, Oyu Tolgoi completed the sinking and commissioning of Shaft 5.

**Fourth quarter 2018**

- Copper production of 41,500 tonnes during Q4'18 decreased 8.4% over Q4'17 due to lower throughput, which was partially offset by higher grades and recovery.
- Gold production of 117,000 ounces during Q4'18 increased 234.3% over Q4'17 due to significant increases in both grades and recovery.
- As planned, mill throughput in Q4'18 decreased 13.6% over Q4'17 due to increased processing of harder Phase 4 ore.
- Revenue of \$346.2 million in Q4'18 increased 37.5% over Q4'17 due to higher gold revenue driven by a significant increase in volumes of gold in concentrate sales.
- For Q4'18, Oyu Tolgoi's cost of sales was \$2.12 per pound of copper sold (\$2.32: Q4'17), C1 cash costs of \$1.24 per pound of copper produced (\$2.05: Q4'17) and all-in sustaining costs of \$2.01 per pound of copper produced (\$2.40: Q4'17)<sup>1</sup>.
- For Q4'18, mining costs<sup>1</sup> per tonne were \$2.28 (\$1.72: Q4'17), milling costs<sup>1</sup> per tonne were \$6.82 (\$5.92: Q4'17) and G&A costs per tonne were \$4.55 (\$3.56: Q4'17).
- Total operating cash costs<sup>1</sup> of \$242.3 million in Q4'18 increased 11.3% over Q4'17 mainly due to higher freight and royalty costs associated with higher sales revenue.
- During Q4'18, underground lateral development progressed 2.3 equivalent kilometres.

<sup>1</sup> Please refer to Section 15 – NON-GAAP MEASURES – on page 39 of this MD&A for further information.



***Subsequent events***

- The Company has completed an independent review of Rio Tinto's second annual schedule and cost re-forecast.
- Since completion of the Company's independent review, Rio Tinto, as manager of the project, has advised Turquoise Hill that delays on the Shaft 2 fit out are expected to result in an overall schedule delay to sustainable first production beyond the end of Q3'21. Additionally, Rio Tinto is studying relocating the ore passes on the footprint and this may modify the initiation sequence within Panel 0. The study will be incorporated into the definitive estimate.

**A. OYU TOLGOI**

The Oyu Tolgoi mine is approximately 550 kilometres south of Ulaanbaatar, Mongolia's capital city, and 80 kilometres north of the Mongolia-China border. Mineralization on the property consists of porphyry-style copper, gold, silver and molybdenum contained in a linear structural trend (the Oyu Tolgoi Trend) of deposits throughout this trend. They include, from south to north, the Heruga Deposit, the Oyut deposit and the Hugo Dummett deposits (Hugo South, Hugo North and Hugo North Extension).

The Oyu Tolgoi mine was initially developed as an open-pit operation. The copper concentrator plant, with related facilities and necessary infrastructure, was originally designed to process approximately 100,000 tonnes of ore per day from the Oyut open pit. However, since 2014, the concentrator has improved operating practices and gained experience, which has helped achieve a consistent throughput of over 105,000 tonnes per day. Concentrator throughput for 2019 is targeted at 110,000 tonnes per day and expected to be approximately 40 million tonnes for the year.

In August 2013, development of the underground mine was suspended pending resolution of matters with the Government of Mongolia (Government). Following signing of the Oyu Tolgoi Underground Mine Development and Financing Plan (Underground Plan) in May 2015 and the signing of a \$4.4 billion project finance facility in December 2015, Oyu Tolgoi received formal notice to proceed approval by the boards of Turquoise Hill, Rio Tinto and Oyu Tolgoi LLC in May 2016, which was the final requirement for the re-start of underground development. Underground construction recommenced in May 2016. Prior to suspending underground construction in August 2013, underground lateral development at Hugo North Lift 1 had advanced approximately 16 kilometres off Shaft 1.

At the end of 2018, Oyu Tolgoi had a total workforce (employees and contractors), including underground project construction, of approximately 17,000, of which 92.6% were Mongolian.

**Underground development progress**

Significant progress on the Oyu Tolgoi underground project continued through 2018, with the construction of critical above and below-ground infrastructure. Shaft 2-connected underground infrastructure progressed well during Q4'18 with the completion of the lining installation and handover of Ore Bin 11 as well as advancement of the new 6,000-tonne-per-day jaw crusher under construction.

During Q4'18, Turquoise Hill carried out its own review of the previously announced Rio Tinto schedule and cost re-forecast for the project (2018 Rio Tinto Review) that concluded a delay to sustainable first production was expected from Q1'21 to the end of Q3'21. The Company's review, with the assistance of Turquoise Hill's independent Qualified Person and mining consultants OreWin Pty Ltd, found that project cost was expected to remain within the \$5.3 billion budget but that it is likely there will be further delays to individual activities and that this will result in additional delays to sustainable first production.

The Company's independent review found that the following key risks are developing.

- Shaft 2 equipping delays were due to lower than expected productivity in steel and electrical installation as well as increased quality assurance measures. It was likely the completion date would move beyond Q1'19 and impact overall underground development rate increases.
- There have been delays to development progress and productivities in key areas. Even though lateral development has experienced consistent overall progress, development of some critical areas, such as the footprint, Primary Crusher 1 (PC1) system, Shaft 2 and Shaft 5, have been impacted by delays and, with the exception of Shaft 5, are critical path items for the project schedule. Small delays in lateral development on the footprint have had a direct impact on the project schedule critical path, even though total lateral development or equivalent development metres have been on budget. Development in the PC1 system (which includes the PC1 chamber and transfers 3, 4 and 5) has, since the time of the Rio Tinto Review data cut-off, fallen significantly behind target rates.
- The Company review indicated that in some areas there was a delay to the critical path from scope growth in mass excavation and additional ground support due to unexpectedly adverse geotechnical conditions. Although the ground support quantities and installation times are less, but not materially less than planned in the 2016 Oyu Tolgoi Feasibility Study and ground support quantities are reported as lower than planned, some types of ground support have had reduced installation times.

Since completion of the Company's independent review, Rio Tinto, as manager of the project, has advised Turquoise Hill that further delays on the Shaft 2 fit out are expected to contribute to an overall schedule delay to sustainable first production beyond the end of Q3'21. Additionally, Rio Tinto is studying relocating the ore passes on the footprint and this may modify the initiation sequence within Panel 0. The study will be incorporated into the definitive estimate review, as will work necessary to estimate any impact on cost and development schedule.

Oyu Tolgoi spent \$347.3 million on underground expansion during Q4'18 and \$1.2 billion for 2018, meeting the Company's guidance. Total underground project spend from January 1, 2016 to December 31, 2018 was approximately \$2.3 billion. Underground project spend on a cash basis includes expansion capital, VAT and capitalized management services payment and excludes capitalized interest. In addition, Oyu Tolgoi had further capital commitments<sup>2</sup> of \$1.2 billion as of December 31, 2018. At the end of Q4'18, the underground project had committed almost 87% of direct project contracts and procurement packages, of which 73% were to Mongolian companies. Since the restart of project development, Oyu Tolgoi has committed nearly \$2.3 billion to Mongolian vendors and contractors.

The main focus of 2018 was underground development, the fit out of Shaft 2, completion and commissioning of Shaft 5, support infrastructure and the convey-to-surface decline. Shaft 2 completed sinking in January 2018, which was followed by the completion of stripping in Q3'18 and commencement of the fit-out process in the same quarter. The completed commissioning of Shaft 5 was achieved during Q2'18.

During 2018, underground development advanced 10.3 equivalent kilometres, a 68.9% increase over 2017 due to the commissioning of the new 3,500–tonne-per-day crusher in the second half of 2017 and increased development capability with increased ventilation following the completion of Shaft 5. Despite the strong year-over-year progress, during Q4'18 underground development achieved a lower than expected 2.3 equivalent kilometres of development against a target of 3.0 equivalent kilometres. The shortfall in Q4'18 led to 10.3 equivalent kilometres for 2018 against the expected target of approximately 11.0 kilometers of equivalent development. The underground development challenges experienced in Q4'18 included time constraints during hoist rope maintenance and the introduction of a new underground traffic management plan. Lateral development progressed 7.9 kilometres during 2018 and was impacted

<sup>2</sup> Please refer to Section 15 – NON-GAAP MEASURES – on page 39 of this MD&A for further information.



by the same challenges but also a shift in priorities of resources from lateral development to mass excavation.

Due to the latest Rio Tinto advice, Turquoise Hill's previous guidance of lateral development advancement of 15.0 to 16.0 kilometres during 2019 is under review. The following table provides a breakdown of the various components of completed development since project restart:

Year	Total Equivalent Kilometres	Lateral Development (kilometres)	Mass Excavation ( <sup>3</sup> 000 metres <sup>3</sup> )
2016	1.6	1.5	3.0
Q1'17	1.0	0.8	5.2
Q2'17	1.4	0.9	9.2
Q3'17	1.4	1.2	8.3
Q4'17	2.2	1.9	8.9
2017	6.1	4.8	31.6
Q1'18	2.6	2.1	11.6
Q2'18	2.4	2.1	8.6
Q3'18	3.0	2.1*	23.3*
Q4'18	2.3	1.6	16.0
2018	10.3	7.9	59.5
Total	18.0	14.2	94.1

\*: Lateral development and mass excavation amounts for Q3'18 have been updated to reflect revised results.  
Note: Mass excavation excludes development of vertical metres (shafts) and convey-to-surface.

During Q4'18, development of the convey-to-surface decline also continued to progress but has slipped slightly behind the latest forecast for the period. The convey-to-surface system enables production ramp up beyond the Shaft 2 30,000 tonnes per day capacity to the full 95,000 tonne per day underground production from the mine.

Full-year 2018 and Q4'18 open-pit operations performance

Safety performance

Underground development by its nature increases specific levels of safety risk and reinforces why safety is Oyu Tolgoi's main priority. The mine's management is committed to reducing risk and injury. Oyu Tolgoi achieved an industry-leading All Injury Frequency Rate of 0.16 per 200,000 hours worked for the year ended December 31, 2018. In addition, there are additional safety metrics, that are common in the mining industry, utilized by Oyu Tolgoi to continuously monitor safety performance.

Key financial metrics for 2018 and Q4'18 are as follows:

Oyu Tolgoi Key Financial Metrics<sup>(1)</sup>

(\$ in millions, unless otherwise noted)	4Q 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	Q4'18 vs. Q4'17	Full Year 2018	Full Year 2017	2018 vs. 2017
Revenue	251.7	245.6	341.7	246.5	346.2	37.5%	1,180.0	939.8	25.6%
Revenue by metals in concentrates									
Copper	216.1	202.1	273.7	180.4	210.3	-2.7%	866.5	795.6	8.9%
Gold	32.5	40.3	64.1	63.3	132.7	308.3%	300.4	130.8	129.7%
Silver	3.2	3.2	4.0	2.9	3.0	-6.3%	13.1	13.4	-2.2%
Cost of sales	182.7	168.9	239.6	181.0	187.7	2.7%	777.2	763.8	1.8%
Production and delivery costs	106.6	114.6	174.2	135.9	143.3	34.4%	568.0	468.4	21.3%
Depreciation and depletion	73.4	55.6	64.1	45.2	44.6	-39.2%	209.5	304.1	-31.1%
Capital expenditure on cash basis	330.4	285.7	318.0	328.8	371.8	12.5%	1,304.3	917.5	42.2%
Underground	309.0	270.5	291.2	304.8	347.3	12.4%	1,213.8	835.7	45.2%
Open pit <sup>(2)</sup>	21.4	15.2	26.8	24.0	24.5	14.5%	90.5	81.8	10.6%
Royalties	15.8	14.9	20.3	15.5	20.1	27.2%	70.8	57.1	24.0%
Operating cash costs <sup>(3)</sup>	217.7	176.6	201.7	196.4	242.3	11.3%	817.1	711.6	14.8%
Unit costs (\$)									
Cost of sales (per pound of copper sold)	2.32	2.23	2.36	2.28	2.12	-8.6%	2.25	2.32	-3.0%
C1 (per pound of copper produced) <sup>(3)</sup>	2.05	1.76	1.72	1.65	1.24	-39.5%	1.59	1.92	-17.2%
All-in sustaining (per pound of copper produced) <sup>(3)</sup>	2.40	2.07	2.42	2.29	2.01	-16.3%	2.20	2.39	-7.9%
Mining costs (per tonne of material mined) <sup>(3)</sup>	1.72	1.94	2.12	2.18	2.28	32.6%	2.13	1.51	41.1%
Milling costs (per tonne of ore treated) <sup>(3)</sup>	5.92	7.42	6.70	7.38	6.82	15.2%	7.11	6.36	11.8%
G&A costs (per tonne of ore treated)	3.56	1.90	2.25	3.43	4.55	27.8%	3.03	2.93	3.4%

<sup>(1)</sup> Any financial information in this MD&A should be reviewed in conjunction with the Company's consolidated financial statements or condensed interim consolidated financial statements for the reporting periods indicated.  
<sup>(2)</sup> Open-pit capital expenditure includes both sustaining and non-underground development activities.  
<sup>(3)</sup> Please refer to Section 15 – NON-GAAP MEASURES – on page 39 of this MD&A for further information.

Full year 2018

Revenue of \$1,180.0 million in 2018 increased 25.6% compared to \$939.8 million in 2017, partly due to the significant increase in gold revenue from \$130.8 million in 2017 to \$300.4 million in 2018, driven by the 150.0% increase in gold production as Oyu Tolgoi benefitted from the processing of Phase 4 ore that contained higher gold content. The remaining increase in revenue was driven by an increase in copper revenue due to a 5.0% increase in volumes of copper in concentrate sales and a 5.9% increase in average copper price from 2017 to 2018.

Cost of sales in 2018 was \$777.2 million compared to \$763.8 million in 2017, reflecting a 3.1% increase in the volumes of concentrates sold supported by reduced unit cost of production due to higher head grades and recoveries.

Capital expenditure on a cash basis for 2018 was \$1,304.3 million compared to \$917.5 million in 2017, comprising amounts attributed to the underground project and open-pit activities of \$1,213.8 million and \$90.5 million, respectively. Open-pit capital expenditure includes deferred stripping of \$17.3 million and tailings storage facility spending of \$20.3 million.

Total operating cash costs<sup>3</sup> at Oyu Tolgoi were \$817.1 million in 2018 compared to \$711.6 million in 2017. The increase was primarily due to higher freight and royalty costs associated with increased sales revenue and a reduction in the amount of costs capitalized as deferred stripping, resulting from a decrease in the proportion of waste removed, as mining resources prioritized movement of ore during the year. Other contributors include higher input prices for key items such as fuel and power.

<sup>3</sup> Please refer to Section 15 – NON-GAAP MEASURES – on page 39 of this MD&A for further information.



**Turquoise Hill Resources Ltd.**

Management’s Discussion and Analysis of Financial Condition and Results of Operations  
(Stated in U.S. dollars, except where noted)

Cost of sales were \$2.25 per pound of copper sold in 2018, compared with \$2.32 per pound of copper sold in 2017 reflecting higher volumes of metals in concentrate sold and reduced unit cost of production due to higher head grades and recoveries.

Oyu Tolgoi’s C1 cash costs<sup>4</sup> in 2018 were \$1.59 per pound of copper produced, a decrease from \$1.92 per pound of copper produced in 2017, and are presented net of revenues from gold and silver sales. The decrease was mainly due to higher gold sales and reduced unit costs of production driven by higher head grades and recoveries as Oyu Tolgoi benefitted from the processing of Phase 4 ore that contained higher gold content.

All-in sustaining costs<sup>4</sup> in 2018 were \$2.20 per pound of copper produced, compared with \$2.39 per pound of copper produced in 2017. The decrease was mainly due to the impact of higher gold sales and higher head grades and recoveries.

Mining costs<sup>4</sup> in 2018 were \$2.13 per tonne of material mined compared with \$1.51 per tonne of material mined in 2017. The increase was mainly due to higher maintenance costs, increased fuel costs and increased cycle time as the open pit deepens.

Milling costs<sup>4</sup> in 2018 were \$7.11 per tonne of ore treated compared with \$6.36 per tonne of ore treated in 2017. The increase was mainly due to higher raw material costs such as steel and increased energy costs required to process the harder Phase 4 ore.

G&A costs in 2018 were \$3.03 per tonne of ore treated compared with \$2.93 per tonne of ore treated in 2017. The increase was due to higher power study costs during 2018.

**Fourth quarter 2018**

Revenue of \$346.2 million in Q4’18 increased 37.5% compared to \$251.7 million in Q4’17, primarily due to the significant increase in gold revenue from \$32.5 million in Q4’17 to \$132.7 million in Q4’18, driven by the 234.3% increase in gold production due to significant increases in both grades and recovery. This was partly offset by a decrease in copper revenue driven by lower average copper prices in Q4’18 compared to Q4’17.

Cost of sales for Q4’18 was marginally higher at \$187.7 million compared to \$182.7 million in Q4’17. The increase was due to the 9.1% increase in the volumes of concentrates sold, partly offset by a reduced unit cost of production due to higher head grades and recoveries.

Capital expenditure on a cash basis for Q4’18 was \$371.8 million compared to \$330.4 million in Q4’17, comprising amounts attributed to the underground project and open-pit activities of \$347.3 million and \$24.5 million respectively.

Total operating cash costs<sup>4</sup> at Oyu Tolgoi were \$242.4 million in Q4’18 compared to \$217.7 million in Q4’17. This was principally due to higher freight and royalty costs associated with higher sales revenue. Operating cash costs include the 5% royalty payable to the Government of Mongolia and exclude deferred stripping costs.

Cost of sales was \$2.12 per pound of copper sold in Q4’18 compared with \$2.32 per pound of copper sold in Q4’17, reflecting higher volumes of metals in concentrate sold and reduced unit cost of production due to higher head grades and recoveries.

Oyu Tolgoi’s C1 cash costs<sup>4</sup> in Q4’18 were \$1.24 per pound of copper produced, a decrease from \$2.05 per pound of copper produced in Q4’17, due primarily to higher gold sales and reduced unit costs of production driven by higher head grades and recoveries.

<sup>4</sup> Please refer to Section 15 – NON-GAAP MEASURES – on page 39 of this MD&A for further information.

**Turquoise Hill Resources Ltd.**

Management’s Discussion and Analysis of Financial Condition and Results of Operations  
(Stated in U.S. dollars, except where noted)

All-in sustaining costs<sup>5</sup> in Q4’18 were \$2.01 per pound of copper produced, compared with \$2.40 per pound of copper produced in Q4’17, mainly due to the impact of higher gold sales and higher head grades and recoveries.

Mining costs<sup>5</sup> in Q4’18 were \$2.28 per tonne of material mined compared with \$1.72 per tonne of material mined in Q4’17. The increase was mainly due to higher maintenance costs and increased fuel costs.

Milling costs<sup>5</sup> in 2018 were \$6.82 per tonne of ore treated compared with \$5.92 per tonne of ore treated in Q4’17. The increase was mainly due to higher raw material costs such as steel and increased energy costs required to process the harder Phase 4 ore.

G&A costs in 2018 were \$4.55 per tonne of ore treated compared with \$3.56 per tonne of ore treated in Q4’17. The increase was due to higher power study costs that arose in Q4’18 associated with the signing of the Power Source Framework Agreement (PSFA).

Key operational metrics for 2018 and Q4’18 are as follows:

**Oyu Tolgoi Production Data**

*All data represents full production and sales on a 100% basis*

	4Q 2017	1Q 2018	2Q 2018	3Q 2018	4Q 2018	Q4’18 vs. Q4’17	Full Year 2018	Full Year 2017	2018 vs. 2017
Open pit material mined (’000 tonnes)	28,929	23,131	22,792	22,523	22,863	-21.0%	91,310	105,921	-13.8%
Ore treated (’000 tonnes)	10,838	9,561	10,164	9,652	9,361	-13.6%	38,738	41,177	-5.9%
Average mill head grades:									
Copper (%)	0.53	0.51	0.48	0.51	0.55	3.8%	0.51	0.51	0.0%
Gold (g/t)	0.20	0.25	0.26	0.38	0.56	180.0%	0.36	0.17	111.8%
Silver (g/t)	1.54	1.32	1.17	1.19	1.22	-20.8%	1.22	1.39	-12.2%
Concentrates produced (’000 tonnes)	205.4	177.3	178.8	179.8	189.0	-8.0%	724.9	722.5	0.3%
Average concentrate grade (% Cu)	22.0	21.9	22.0	21.9	21.9	-0.5%	21.9	21.8	0.5%
Production of metals in concentrates:									
Copper (’000 tonnes)	45.3	38.8	39.4	39.4	41.5	-8.4%	159.1	157.4	1.1%
Gold (’000 ounces)	35	42	50	77	117	234.3%	285	114	150.0%
Silver (’000 ounces)	285	221	225	230	238	-16.5%	914	974	-6.2%
Concentrates sold (’000 tonnes)	175.5	163.1	220.0	171.9	191.4	9.1%	746.4	724.3	3.1%
Sales of metals in concentrates:									
Copper (’000 tonnes)	35.7	34.3	46.1	36.0	40.2	12.6%	156.7	149.3	5.0%
Gold (’000 ounces)	27	31	51	55	111	311.1%	248	111	123.4%
Silver (’000 ounces)	205	206	250	201	216	5.4%	873	860	1.5%
Metal recovery (%)									
Copper	78.0	79.5	79.7	80.9	84.8	8.7%	81.4	75.4	8.0%
Gold	50.5	55.0	59.8	64.7	71.7	42.0%	65.2	49.7	31.2%
Silver	53.0	54.6	58.4	62.8	67.1	26.6%	60.9	52.9	15.1%

**Full year 2018**

Oyu Tolgoi delivered a strong operational performance in 2018 exceeding both copper and gold production guidance. Full-year copper production of 159,100 tonnes and gold production of 285,000 ounces increased 1.1% and 150.0% respectively over 2017. During 2018, Oyu Tolgoi benefitted from the processing of Phase 4 ore that contained higher gold grades.

<sup>5</sup> Please refer to Section 15 – NON-GAAP MEASURES – on page 39 of this MD&A for further information.



**Fourth quarter 2018**

Gold production in Q4'18 increased 234.3% over Q4'17 due to significant increases in both grades and recovery. Copper production in Q4'18 declined 8.4% over Q4'17 due to lower throughput, which was partially offset by higher grades and recovery. As planned, mill throughput in Q4'18 decreased 13.6% over Q4'17 due to the concentrator processing harder Phase 4 ore compared to the processing of predominately softer Phase 6 ore in Q4'17.

**Operational outlook**

Oyu Tolgoi is expected to produce 125,000 to 155,000 tonnes of copper and 180,000 to 220,000 ounces of gold in concentrates for 2019. Open-pit operations are expected to mine ore primarily from Phase 4 throughout the year, with contributions from Phase 6. Mill throughput for 2019 is expected to be approximately 40 million tonnes and it includes the processing of some material from mine stockpiles.

Operating cash costs for 2019 are expected to be \$800 million to \$850 million.

Capital expenditures for 2019 on a cash-basis are expected to be \$150 million to \$180 million for open-pit operations and \$1.3 billion to \$1.4 billion for underground development. Open-pit capital is mainly comprised of deferred stripping, equipment purchases, maintenance componentization and tailings storage facility construction. Underground development capital includes both expansion capital and VAT.

C1 cash costs are expected to be \$1.75 to \$1.95 per pound of copper produced. Unit cost guidance assumes the midpoint of expected 2019 copper and gold production ranges and a gold price of \$1,281 per ounce.

**Funding of Oyu Tolgoi by Turquoise Hill**

In accordance with the Amended and Restated Shareholders' Agreement (ARSHA) dated June 8, 2011, Turquoise Hill has funded Oyu Tolgoi's cash requirements beyond internally generated cash flows by a combination of equity investment and shareholder debt.

For amounts funded by debt, Oyu Tolgoi must repay such amounts, including accrued interest, before it can pay common share dividends. As of December 31, 2018, the aggregate outstanding balance of shareholder loans extended by subsidiaries of the Company to Oyu Tolgoi was \$5.0 billion, including accrued interest of \$0.7 billion. These loans bear interest at an effective annual rate of LIBOR plus 6.5%.

In accordance with the ARSHA, a subsidiary of the Company has funded the common share investments in Oyu Tolgoi on behalf of Erdenes. These funded amounts earn interest at an effective annual rate of LIBOR plus 6.5% and are repayable, by Erdenes to a subsidiary of the Company, via a pledge over Erdenes' share of Oyu Tolgoi common share dividends. Erdenes also has the right to reduce the outstanding balance by making cash payments at any time. As of December 31, 2018, the cumulative amount of such funding was \$1.0 billion, representing 34% of invested common share equity; unrecognized interest on the funding amounted to \$0.5 billion.

As part of its independent review of the 2018 Rio Tinto Review, Turquoise Hill assessed the impact of the delay on, amongst other things, the Company's cash flows and liquidity. Further to the outcomes of its review of the 2018 Rio Tinto Review, Turquoise Hill continues to have access to substantial funding options, including cash forecast to be generated from operating activities, cash and cash equivalents of \$1.6 billion as at December 31 2018, and the remaining net proceeds from project finance of \$1.9 billion, which are drawn and currently deposited with Rio Tinto.

Further, under the existing project financing arrangements, Oyu Tolgoi has the ability (subject to factors such as market appetite, general execution risk and the approval of the Oyu Tolgoi Board) to raise additional supplemental debt of up to \$1.6 billion at the same attractive terms. It is intended the raising of

this supplemental debt will be progressed over the course of 2019 and 2020 to assist in funding underground development going forward including commissioning and ramp up.

The Company is working with Rio Tinto to understand the issues and in parallel with the definitive estimate review, Turquoise Hill will assess the impact of any further delay to sustainable first production beyond the end of Q3'21 on the Company's cash flows, liquidity and funding requirements, as well as investigate potential mitigation options.

Additionally, Oyu Tolgoi is currently undertaking a feasibility study and is in discussions with the Government to progress the construction of a coal-fired power plant and related infrastructure at Tavan Tolgoi. While it is necessary to await the completion of this study to reliably estimate the associated cost, and further to await the outcome of related negotiations to determine the quantum of Oyu Tolgoi's funding requirement, there is a provision under the existing project finance documentation to increase Oyu Tolgoi's current total debt capacity of \$6.0 billion to assist in funding an expansion facility, such as a Tavan Tolgoi-based power plant and related infrastructure.

**Oyu Tolgoi signs Power Source Framework Agreement**

On February 15, 2018, Oyu Tolgoi received notification that the Government had cancelled the Power Sector Cooperation Agreement (PSCA), which was signed in August 2014. The Government's action, under Section 1.3 of the PSCA, indicated the Tavan Tolgoi power project was no longer a viable option. As a result of the Government's action, effective February 15, 2018, long-term power for Oyu Tolgoi must be domestically sourced within four years, in accordance with the 2009 Oyu Tolgoi Investment Agreement (Investment Agreement).

On December 31, 2018, Oyu Tolgoi and the Government signed the PSFA, which provides a binding framework and pathway forward for the construction of a Tavan Tolgoi-based power project, as well as established the basis for a long-term domestic power solution for the mine. The PSFA formalized the role of each party and sets out an amended timetable for Oyu Tolgoi to source power domestically. Construction is expected to start in 2020 following further studies and commissioning of the power plant is scheduled for mid-2023. Oyu Tolgoi will now move forward to confirm the technical design of the project and finalize the commercial arrangements, including financing, underpinning the PSFA. The 300 megawatt plant will be majority owned by Oyu Tolgoi LLC and will be situated close to the Tavan Tolgoi coalfields.

**Oyu Tolgoi tax assessment**

On January 16, 2018, Turquoise Hill announced that Oyu Tolgoi had received and was evaluating a tax assessment for approximately \$155 million from the Mongolian Tax Authority (MTA) relating to an audit on taxes imposed and paid by Oyu Tolgoi LLC between 2013 and 2015. In January 2018, Oyu Tolgoi paid an amount of approximately \$5.0 million to settle unpaid taxes, fines and penalties for accepted items.

Following engagement with the MTA, Oyu Tolgoi was advised that the MTA could not resolve Oyu Tolgoi's objections to the tax assessment. Accordingly, on March 15, 2018, Oyu Tolgoi issued a notice of dispute to the Government under the Investment Agreement and on April 13, 2018, Oyu Tolgoi submitted a claim to the Mongolian Administrative Court. The Administrative Court has currently suspended the processing of the case for an indefinite period based on current procedural uncertainty in relation to the tax assessment disputes.

Chapter 14 of the Investment Agreement sets out a dispute resolution process. The issuance of a notice of dispute is the first step in the dispute resolution process and includes a 60-working-day negotiation period. The parties were unable to reach a resolution during the 60-working-day period; however, the parties have continued discussions in an attempt to resolve the dispute in good faith. If unsuccessful, the next step would be dispute resolution through international arbitration.



Turquoise Hill is of the opinion that Oyu Tolgoi has paid all taxes and charges required under the Investment Agreement, the ARSHA, the Underground Plan and Mongolian law.

**Mongolian parliamentary working group**

In March 2018, the Speaker of the Mongolian Parliament appointed a Parliamentary Working Group (Working Group) that consisted of 13 Members of Parliament to review the implementation of the Investment Agreement. The Working Group established five sub-working groups consisting of representatives from government ministries, agencies, political parties, non-governmental organizations and professors, to help and support the Working Group. The Working Group's fieldwork has been completed and they were due to report to Parliament before the end of spring session in late June 2018; however, this has been continually delayed.

On December 13, 2018, Oyu Tolgoi received a letter from the head of the Working Group confirming that the consolidated report, conclusions and recommendations of the Working Group have been finalized and was ready to be presented to parliament. However, a final report and conclusions of the Working Group have not been submitted to the Economic Standing Committee, which is expected to review and discuss the report before it goes to a parliamentary plenary session. The Working Group has not communicated any of their findings, issues or concerns with Oyu Tolgoi.

**Anti-Corruption Authority information requests**

Oyu Tolgoi LLC has received information requests from the Mongolian Anti-Corruption Authority (ACA) for information relating to Oyu Tolgoi. The ACA has also conducted interviews in connection with its investigation. Turquoise Hill has inquired as to the status of the investigation and Oyu Tolgoi has informed the Company that the investigation appears to relate primarily to possible abuses of power by certain former Government officials in relation to the Investment Agreement, and that Oyu Tolgoi is complying with the ACA's requests in accordance with relevant laws. To date, neither Turquoise Hill nor Oyu Tolgoi have received notice from the ACA, or indeed from any regulator, that either company or their employees are subjects of any investigation involving the Oyu Tolgoi project.

The Investment Agreement framework was authorized by the Mongolian Parliament, concluded after 16 months of negotiations and reviewed by numerous constituencies within the Government. Turquoise Hill has been operating in good faith under the terms of the Investment Agreement since 2009, and we believe not only that it is a valid and binding agreement, but that it has proven to be beneficial for all parties.

Adherence to the principles of the Investment Agreement, ARSHA and Underground Plan has allowed for the development of Oyu Tolgoi in a manner that has given rise to significant long-term benefits to Mongolia. Benefits from Oyu Tolgoi's open-pit operations and underground development include, but are not limited to, employment, royalties and taxes, local procurement, economic development and sustainability investments.

**B. CORPORATE ACTIVITIES**

**Letter to shareholders**

On March 14, 2018, the Board of Directors of Turquoise Hill issued a letter to shareholders regarding a meeting between members of Turquoise Hill's board of directors and representatives of SailingStone Capital Partners (SailingStone). The meeting followed a publicly-filed letter by SailingStone on February 1, 2018 in which it raised corporate governance concerns.

On May 3, 2018, the Board of Directors of Turquoise Hill issued a letter to shareholders discussing a review undertaken by the board about matters raised by SailingStone and provided specific actions to be taken.

**Management change**

On July 30, 2018, the Company announced the appointment of Ulf Quellmann as Turquoise Hill Chief Executive Officer effective August 1, 2018. The appointment of Mr. Quellmann follows the retirement of Jeff Tygesen.

**Board appointment**

On September 7, 2018, Turquoise Hill announced the appointment of Alan Chirgwin to the Company's Board of Directors effective September 6, 2018.

**3. SELECTED QUARTERLY DATA**

The Company's interim financial statements are reported under IFRS applicable to interim financial statements, including International Accounting Standard (IAS) 34 *Interim Financial Reporting*. The following table sets forth selected unaudited quarterly financial information derived from financial information for each of the eight most recent quarters.

(\$ in millions, except per share information)

	Quarter Ended			
	Dec-31	Sep-30	Jun-30	Mar-31
	2018	2018	2018	2018
Revenue	\$ 346.2	\$ 246.5	\$ 341.7	\$ 245.6
Income for the period	\$ 95.0	\$ 15.2	\$ 204.4	\$ 79.7
Income attributable to owners of Turquoise Hill	\$ 101.0	\$ 53.2	\$ 171.3	\$ 85.7
Basic and diluted income per share attributable to owners of Turquoise Hill	\$ 0.05	\$ 0.03	\$ 0.09	\$ 0.04

	Quarter Ended			
	Dec-31	Sep-30	Jun-30	Mar-31
	2017	2017	2017	2017
Revenue	\$ 251.7	\$ 246.9	\$ 203.7	\$ 237.5
Income (loss) for the period	\$ 33.9	\$ 47.7	\$ (0.4)	\$ 29.7
Income attributable to owners of Turquoise Hill	\$ 51.1	\$ 65.3	\$ 23.8	\$ 41.0
Basic and diluted income per share attributable to owners of Turquoise Hill	\$ 0.03	\$ 0.03	\$ 0.01	\$ 0.02

**4. INCOME AND OTHER TAXES**

The Company recorded an income statement credit of \$140.6 million for income and other taxes during 2018, compared with a credit of \$154.0 million in 2017. Income and other taxes include adjustments to deferred tax assets in Mongolia and Canada, in addition to withholding taxes accrued and current tax payable.

Adjustments to deferred tax assets resulted in income statement charges within income and other taxes for 2018 of \$175.7 million. Additional Mongolian deferred tax assets of \$165.9 million and additional Canadian deferred tax assets of \$9.8 million were recognized during 2018. Deferred tax assets relate to tax operating losses, accrued but unpaid interest expense on shareholder loans and other temporary differences. Recoverability of these losses were assessed against an estimate of future taxable profits.



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Movements in the deferred tax assets result from period end reassessments of recoverability and include adjustments to record potential deferred tax assets not recognized in previous periods.

During 2018, the Company recognized additional Mongolian deferred tax assets by \$165.9 million, of which \$105.6 million was the result of operating losses and accrued but unpaid interest expense incurred by Oyu Tolgoi in the period.

The remaining movement in the Mongolian deferred tax asset was due to an overall strengthening of taxable income forecasts driven by improved long-term commodity price projections and updated operating assumptions in mine planning during the year. This was partly offset by a reduction in the deferred tax asset recognized for losses incurred in 2016, as the delay to sustainable first production start of the underground mine is expected to lead to an increase in the amount of 2016 losses estimated to expire un-utilized.

A negative effective tax rate of approximately 50% during 2018 arose as the Company reported income from continuing operations before tax of \$253.6 million, while recording in the same period a net income statement tax credit (inclusive of adjustments to deferred tax assets and accrued withholding taxes) of \$140.6 million.

During 2017, the Company recognized additional Mongolian deferred tax assets of \$164.9 million and additional Canadian deferred tax assets of \$12.5 million. An effective tax rate of approximately 350% during 2017 arose as the Company reported a loss from continuing operations before tax of \$43.1 million, while recording in the same period a net income statement tax credit (inclusive of adjustments to deferred tax assets and accrued withholding taxes) of \$154.0 million.

Turquoise Hill's effective tax rate represents the income statement charge or credit for income and other taxes as a percentage of income or loss from operations before taxes. It is possible for Turquoise Hill's effective tax rate to be in excess of 100%, primarily because of different tax jurisdictions applying different tax to intercompany loan interest, and/or previously unrecognized deferred tax assets being recorded in the current period.

Additional income statement information, including income and other taxes relating to Oyu Tolgoi and the Company's corporate operations is provided in Note 3 – Operating segment – to the consolidated financial statements.

**5. LIQUIDITY AND CAPITAL RESOURCES**

**Cash flow**

**Operating activities.** Net cash generated from operating activities was \$180.0 million in 2018 compared with \$118.0 million in 2017. Cash generated from operating activities before interest and tax was \$363.0 million in 2018 compared to \$325.8 million in 2017 primarily reflecting the impact of higher sales revenue. Interest paid in 2018 totalled \$261.4 million compared to \$259.0 million in 2017 and income and other taxes paid in 2018 amounted to \$9.9 million compared to \$8.6 million in 2017.

**Investing activities.** Cash used in investing activities totalled \$33.7 million in 2018, compared with \$96.3 million in 2017. Cash used in investing activities in 2018 reflects capital expenditure of \$1.3 billion offset by a corresponding \$1.3 billion withdrawn from the Company's Cash Management Services Agreement (CMSA). Under the CMSA, entered into on December 15, 2015 as part of Project Finance, amounts totalling \$4.2 billion were placed with a subsidiary of Rio Tinto, during 2016. The resulting receivables, which represented substantially all of the net proceeds received on drawdown of the project finance facility in 2016, are returned to Turquoise Hill as required for purposes of Oyu Tolgoi underground mine development and financing. As of December 31, 2018, amounts totalling \$2.3 billion have been withdrawn and provided to Oyu Tolgoi.<sup>6</sup>

<sup>6</sup> Please refer to Section 2.A – OYU TOLGOI – on page 6 and to Section 14 – RELATED-PARTY TRANSACTIONS – on page 38 of this MD&A.

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**Financing activities.** Cash generated from financing activities was \$12.9 million in 2018, compared with \$5.1 million generated in 2017. The amounts in 2018 and 2017 resulted from incremental drawdowns on the Company's facility with the Export-Import Bank of the United States.

**Liquidity**

As of December 31, 2018, Turquoise Hill held consolidated cash and cash equivalents of approximately \$1.6 billion (2017: \$1.4 billion) and consolidated working capital<sup>7</sup> of negative \$174.1 million (2017: negative \$109.8 million). The movement in working capital during 2018 was a result of a rise in payables associated with underground development and reduced levels of inventories arising from the recovery from the impact of border logistics issues at the end of 2017.

A \$4.2 billion related-party receivable with a Rio Tinto subsidiary was recorded in 2016, representing net proceeds (after settlement of withholding taxes and transaction costs) from project finance tranches drawn down before June 30, 2016 and placed with Rio Tinto in accordance with the CMSA. Turquoise Hill draws upon this related-party receivable as required in order to fund development and financing of the underground mine. As of December 31, 2018, \$2.3 billion had been re-drawn from this related-party receivable, leaving a balance of \$1.9 billion.

Turquoise Hill believes that, based on its current cash position and the net project finance proceeds available to be re-drawn from the related-party receivable, it will have sufficient funds to meet its minimum obligations, including general corporate activities, for at least the next 12 months. Consolidated working capital is expected to remain negative or below previously reported levels while expenditure on underground development continues and associated payables are recorded. Refer to further discussion of liquidity beyond the next 12-month period under "Funding of Oyu Tolgoi by Turquoise Hill".

**Capital resources**

The Company considers its capital to be share capital and third-party borrowings. To effectively manage capital requirements, the Company has in place a planning and budgeting process to help determine the funds required to ensure the Company has the appropriate liquidity to meet its strategic and operating needs.

In December 2015, Oyu Tolgoi signed the \$4.4 billion project finance facility for the purposes of developing the underground mine, of which \$4.3 billion had been drawn down at December 31, 2018. The additional \$0.1 billion is available, subject to certain conditions, under the Company's facility with the Export-Import Bank of the United States. As of December 31, 2018, \$2.3 billion had been advanced to Oyu Tolgoi, leaving a balance of \$1.9 billion placed on deposit with Rio Tinto in accordance with the CMSA. The project finance lenders have agreed a debt cap of \$6.0 billion thus allowing the potential for an additional \$1.6 billion of supplemental debt to be raised in the future. Under the project finance agreements, the \$6.0 billion debt cap may be increased in connection with an expansion facility, which includes the construction of a Tavan Tolgoi-based power project, for up to an amount equal to the estimated total cost of such a facility, including financing and related costs and fees, subject to the fulfilment of certain conditions. An estimate of the cost and means of financing for a power plant is expected to be completed in 2019.

The Company's accumulated deficit at December 31, 2018 was \$3.7 billion, compared to \$4.1 billion at December 31, 2017.

<sup>7</sup> Please refer to Section 15 – NON-GAAP MEASURES – on page 39 of this MD&A for further information.



**Financial instruments**

The carrying value of Turquoise Hill's financial instruments was as follows:

(Stated in \$000's of dollars)	December 31, 2018	December 31, 2017
<b>Financial Assets</b>		
Cash and cash equivalents	\$ 1,603,067	\$ 1,444,783
Marketable securities	5,566	8,441
Loans and receivables:		
Trade and other receivables	14,623	16,270
Due from related parties	15,641	12,819
Receivable from related party	1,886,284	3,156,284
<b>Financial Liabilities</b>		
Trade and other payables	396,848	373,400
Payable to related parties	51,490	52,308
Borrowings (project finance facility)	4,175,240	4,146,601
Interest payable on long-term borrowings	10,906	10,161

**6. SHARE CAPITAL**

As of March 14, 2019, the Company had a total of 2,012,314,469 common shares outstanding.

As of January 29, 2018, there were no longer any outstanding options in the Company's Equity Incentive Plan. As a result, the Turquoise Hill Board of Directors decided to repeal the Equity Incentive Plan on March 14, 2018.

**7. OUTLOOK**

The information below is in addition to disclosures already contained in this report regarding the Company's operations and activities.

Turquoise Hill's financial performance and its ability to advance its future operations and development plans are heavily dependent on the availability of funding, base and precious metal prices and foreign-exchange rates. Volatility in these markets continues to be high.

For further details on the Company's financing plans, please refer to Section 5 – LIQUIDITY AND CAPITAL RESOURCES – on page 16 of this MD&A.

**Copper and gold markets**

Commodity prices are a key driver of Turquoise Hill's earnings. By the end of February 2019, copper prices had moved to \$2.98 per pound, which was above the \$2.60 - \$2.90 per pound pricing band observed for the past eight months. This upward trend was supported by a more supportive U.S. Federal Reserve policy, Chinese stimulus program and improved U.S.-China trade discussions, which have led to a recovery in the U.S. equity market. Spot treatment charges dipped to \$74.30 per tonne on Feb 28, 2019, an eight-month low. Buying interest continues to be relatively strong among traders and smelters, as they seek to build long positions in anticipation of a tighter concentrate market later in 2019. Gold continued to move higher to approximately \$1,320 per ounce at the end of February, supported by central banks' gold purchases, particularly in China and Russia, and strong gold inflows onto exchange traded funds, with their holdings at a five-year high. These trends are underpinned by increasing economic uncertainty and lower growth expectations.

**Foreign exchange rates**

Oyu Tolgoi's sales are settled in U.S. dollars and a portion of its expenses are incurred in local currencies. Short-term foreign exchange fluctuations could have an effect on Turquoise Hill's operating margins; however, in view of the proportion of locally incurred expenditures, such fluctuations are not expected to have a significant impact on Turquoise Hill's long-term financial performance.

**8. OFF-BALANCE SHEET ARRANGEMENTS**

With the exception of the Company's operating lease commitments disclosed within Section 9 – CONTRACTUAL OBLIGATIONS, as at December 31, 2018, Turquoise Hill was not a party to any off-balance-sheet arrangements that have, or are reasonably likely to have, a significant current or future effect on the results of operations, financial condition, revenues or expenses, liquidity, capital expenditures or capital resources of the Company.

**9. CONTRACTUAL OBLIGATIONS**

The following table summarizes Turquoise Hill's contractual obligations as at December 31, 2018.<sup>8</sup>

(Stated in \$000's of dollars)	Payments Due by Period				
	Less than 1 year	1 - 3 years	4 - 5 years	After 5 years	Total
Purchase obligations <sup>(1)</sup>	\$ 946,654	\$ 275,586	\$ 7,194	\$ -	\$ 1,229,434
Power commitments	112,688	225,375	168,890	-	506,953
Operating leases	13,737	7,993	1,984	2,147	25,861
Finance leases	-	12,057	-	-	12,057
Decommissioning obligations	-	-	-	273,745	273,745
<b>Total</b>	<b>\$ 1,073,079</b>	<b>\$ 521,011</b>	<b>\$ 178,068</b>	<b>\$ 275,892</b>	<b>\$ 2,048,050</b>

<sup>(1)</sup> These amounts mainly represent various long-term contracts that include commitments for future development and operating payments for supply of engineering, equipment rentals and other arrangements.

**10. CHANGES IN ACCOUNTING POLICIES**

There were two changes in Turquoise Hill's accounting policies during 2018.

**IFRS 15, Revenue from contracts with customers**

IFRS 15, *Revenue from Contracts with Customers*, was effective and has been applied by the Company using the modified transitional approach to implementation in accordance with IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors* and the new standard has therefore been applied only to contracts that remain in force at January 1, 2018. Refer to Note 2(f) of the Company's consolidated financial statements for the year ended December 31, 2018 for the complete accounting policy.

The standard contains a single model that applies to contracts with customers. Revenue is recognized as control is passed to the customer, either at a point in time or over time.

The Company concluded that, in its specific circumstances, there were no measurement differences between IAS 18, *Revenue*, and IFRS 15, *Revenue from Contracts with Customers*. However, additional disclosures were required under IFRS 15 related to movements in the fair value of trade receivables, which are disclosed separately within Note 4 of the Company's consolidated financial statements for the year ended December 31, 2018.

<sup>8</sup> Please refer to Section 15 – NON-GAAP MEASURES – on page 39 of this MD&A for further information.



**IFRS 9, *Financial Instruments***

IFRS 9, *Financial Instruments*, was effective and has been applied by the Company from January 1, 2018. IFRS 9 uses a single approach to determine whether a financial asset is classified and measured at amortized cost or fair value, replacing the multiple rules in IAS 39, *Financial Instruments: Recognition and Measurement*. The approach in IFRS 9 is based on how an entity manages its financial instruments and the contractual cash flow characteristics of the financial asset. Most of the requirements in IAS 39 for classification and measurement of financial liabilities were carried forward in IFRS 9, so the Company's accounting policy with respect to financial liabilities is unchanged.

As a result of the adoption of IFRS 9, the Company made an election upon initial recognition for equity instruments existing at January 1, 2018 and previously classified as available-for-sale, to satisfy the conditions for classification as fair value through other comprehensive income ("FVOCI"). Fair value movements and gains or losses realized on the sale of financial assets at FVOCI will not be reclassified to the consolidated statement of income. In accordance with the transitional provisions in IFRS 9, comparative figures have not been restated. The change did not impact the carrying value of any of the Company's financial assets on the transition date.

The Company's financial assets previously classified as loans and receivables and measured at amortized cost continue to be classified at amortized cost with the exception of the Company's investments in money market funds and provisionally priced trade receivables that are classified as financial assets at fair value through profit and loss. Refer to Note 2(q) of the Company's consolidated financial statements for the year ended December 31, 2018 for the complete accounting policy.

**11. CRITICAL ACCOUNTING ESTIMATES**

The preparation of financial statements in conformity with IFRS requires Turquoise Hill to establish accounting policies and to make estimates that affect both the amount and timing of the recording of assets, liabilities, revenues and expenses. Some of these estimates require judgments about matters that are inherently uncertain.

A detailed summary of all of the Company's significant accounting policies and the estimates derived therefrom is included in Note 2 to the consolidated financial statements for the year ended December 31, 2018. While all of the estimates are important to the Company's consolidated financial statements, the following estimates derived therefrom have been identified as being critical:

- Reserves and resources;
- Recoverable amount of property, plant and equipment;
- Decommissioning obligations
- Income taxes; and
- Net realizable value of inventories.

**Reserves and resources**

Mineral reserve and resource estimates are based on various assumptions relating to operating matters set forth in Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects (NI 43-101). These include production costs, mining and processing recoveries, cut-off grades, long-term commodity prices, inflation rates and the costs and availability of treatment and refining services for the metals mined. Cost estimates are based on feasibility study estimates or operating history, and estimates are prepared by appropriately qualified persons (as defined in NI 43-101). Estimated recoverable reserves are used to determine the depreciation of property, plant and equipment at each operating mine area; to account for capitalized deferred stripping costs; to perform when required, assessments of the recoverable amount of property, plant and equipment; and to forecast the timing of the payment of decommissioning obligations.

**Recoverable amount of property, plant and equipment**

Property, plant and equipment are tested for impairment when events or changes in circumstance indicate that the carrying value may be higher than the recoverable amount. Judgment is required in assessing whether certain factors would be considered an indicator of impairment. Management considers both internal and external information to determine whether there is an indicator. A formal estimate of recoverable amount may, but will not necessarily, result in an impairment charge in the financial statements.

Recoverable amount is assessed at the level of the cash-generating units, which are identified as the smallest identifiable group of assets capable of generating cash inflows, which are largely independent from the cash inflows from other assets. When an impairment review is undertaken, the recoverable amount is estimated by reference to the higher of value in use and fair value less costs of disposal (FVLCD). FVLCD is usually estimated either from the value obtained from an active market, where applicable, or by using discounted cash flow techniques based on detailed life-of-mine and/or production plans.

The estimates used by management in arriving at its estimate of recoverable amount are subject to various risks and uncertainties. It is reasonably possible that changes in estimates could occur which may affect the expected recoverability of Turquoise Hill's investments in property, plant and equipment.

A test for recoverable amount was undertaken as at December 31, 2018 that did not result in an impairment being recorded. Refer to Note 13 of the Company's consolidated financial statements for the year ended December 31, 2018.

**Decommissioning obligations**

Turquoise Hill has obligations for site restoration and decommissioning related to its mining properties. Turquoise Hill, using mine closure plans or other similar studies that outline the requirements planned to be carried out, estimates the future obligations for mine closure activities. Since the obligations are dependent on the laws and regulations of the countries in which the mines operate, the requirements could change as a result of amendments in those laws and regulations relating to environmental protection and other legislation affecting resource companies. In addition, the estimate includes liabilities arising from constructive obligations made by the Company. Such obligations may arise from established patterns or practice by Turquoise Hill or its affiliates (including other member companies of the Rio Tinto Group), published policies or statements of intent, or other commitments, whether contractual or informal. As a result of future reviews of its constructive obligations with respect to asset retirement, there could be adjustments to the Company's accounting provision for site restoration and decommissioning affecting future results.

Turquoise Hill recognizes liabilities for statutory, contractual, legal and constructive obligations associated with the retirement of property, plant and equipment, when those obligations result from the acquisition, construction, development or normal operation of the assets. Initially, a liability for an asset retirement obligation is recognized at its fair value in the period in which it is incurred. Upon initial recognition of the liability, the corresponding asset retirement cost is added to the carrying amount of that asset and the cost is amortized as an expense over the economic life of the related asset. Following the initial recognition of the asset retirement obligation, the carrying amount of the liability is increased for the passage of time and adjusted for changes to the amount or timing of the underlying cash flows needed to settle the obligation.

Since the estimate of obligations is based on future expectations in the determination of closure provisions, management makes a number of assumptions and judgments including estimating the amount of future reclamation costs and their timing, inflation rates and risk-free discount rates. The closure provisions are more uncertain the further into the future the mine closure activities are to be carried out. Actual costs incurred in future periods in relation to the remediation of Turquoise Hill's existing assets could differ materially from their estimated undiscounted future value.



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**Income taxes**

Turquoise Hill is subject to assessments by various taxation authorities, who may interpret tax legislation differently from Turquoise Hill. The final amount of taxes to be paid depends on a number of factors, including the outcomes of audits, appeals or negotiated settlements. Such differences are accounted for based on management's best estimate of the probable outcome of these matters.

Turquoise Hill must make significant estimates in respect of the provision for income taxes and the composition of its deferred income tax assets and deferred income tax liabilities. Turquoise Hill's operations are, in part, subject to foreign tax laws where interpretations, regulations and legislation are complex and continually changing. As a result, there are usually some tax matters in question which may, on resolution in the future, result in adjustments to the amount of deferred income tax assets and deferred income tax liabilities, and those adjustments may be material to Turquoise Hill's financial position and results of operations.

Turquoise Hill computes the provision for deferred income taxes under the liability method. Deferred taxes arise from the recognition of the tax consequences of temporary differences by applying statutory tax rates applicable to future years to differences between the financial statement's carrying amounts and the tax bases of certain assets and liabilities. Turquoise Hill recognizes deferred tax assets for unused tax losses, tax credits and deductible temporary differences, only to the extent it is probable that future taxable profits will be available against which they can be utilized.

The determination of the ability of Turquoise Hill to utilize tax losses carried forward to offset income taxes payable in the future and to utilize temporary differences which will reverse in the future requires management to exercise judgment and make assumptions about Turquoise Hill's future performance. Management is required to assess whether Turquoise Hill is more likely than not able to benefit from these tax losses and temporary differences. Changes in economic conditions, metal prices, timing of taxable income streams and other factors could result in revisions to the estimates of the benefits to be realized or the timing of utilizing the losses.

**Net realizable value of inventories**

Inventory, including stockpiles of ore, are valued at the lower of weighted average cost and net realizable value. If ore stockpiles are not expected to be processed within the 12 months after the balance sheet date, they are included within non-current assets and net realizable value is calculated on a discounted cash flow basis over the planned processing timeframe for such ore. Evaluating net realizable value requires management judgment in the selection of estimates for, among other inputs, discount rate, price assumptions, timing of processing, and associated costs.

**12. RECENT ACCOUNTING PRONOUNCEMENTS**

A number of new standards, and amendments to standards and interpretations, are not yet effective for the year ending December 31, 2018, and have not been applied in preparing the annual consolidated financial statements.

The following standard may have an effect on future consolidated financial statements of the Company:

**IFRS 16, Leases**

IFRS 16, *Leases*, which will replace IAS 17, *Leases*, is effective for the Company's fiscal year ending December 31, 2019. The objective of the new standard is to report all leases on the consolidated balance sheet with the exception of short term (under 12 months) and low value leases, and to define how right to use assets and related lease liabilities are measured. Under the new standard, a lessee is in essence required to:

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- a) Recognize all lease assets and liabilities (including those currently classed as operating leases) on the balance sheet, initially measured at the present value of the lease payments not paid at that date;
- b) Recognize amortization of lease assets and interest on lease liabilities in the statement of income over the lease term; and
- c) Separate the total amount of cash paid into a principal portion (presented within financing activities) and interest (which companies can choose to present within operating or financing activities consistent with presentation of any other interest paid) in the statement of cash flows.

In preparation for the first-time application of IFRS 16, the Company undertook an implementation project. The project has shown that the new definition in IFRS 16 will not change significantly the scope of contracts that meet the definition of a lease for the Company.

IFRS 16 will change how the Company accounts for leases previously classified as operating leases under IAS 17, which were off-balance sheet.

The Company will apply the definition of a lease and related guidance set out in IFRS 16 to all lease contracts entered into or modified on or after January 1, 2019 (whether it is a lessor or a lessee in the lease contract). The Company will apply the modified retrospective approach and will not restate comparative amounts for the year prior to first adoption.

For all leases, the lease liability will be measured at January 1, 2019 as the present value of any future minimum lease payments discounted using the appropriate incremental borrowing rate. The carrying value of the Company's right of use assets will be measured as if the lease had been in place since commencement date. The difference between the right of use asset and the lease liability will be recognized as an adjustment to Deficit at January 1, 2019.

The Company will apply the following optional practical expedients permitted under the standard:

- a) For short-term leases (lease term of 12 months or less) and leases of low-value assets (such as personal computers and office furniture), the Company will opt to recognise a lease expense on a straight-line basis;
- b) To exclude any initial direct costs from the measurement of the right of use asset at transition; and
- c) To apply the use of hindsight when reviewing the lease arrangement for determination of the measurement or term of the lease under the retrospective method.

Under IFRS 16, right-of-use assets will be tested for impairment in accordance with IAS 36 Impairment of Assets. This will replace the previous requirement to recognise a provision for onerous lease contracts.

As at December 31, 2018, the Company has non-cancellable operating lease commitments of \$25.8 million relating primarily to the leasing of warehouse and office facilities as well as power lines and transportation equipment, the vast majority of which are located at Oyu Tolgoi. These arrangements relate to leases other than short-term leases and leases of low-value assets.

Upon adoption of IFRS 16 from January 1, 2019, the Company intends to recognize a right of use asset and a corresponding lease liability, recognizing the difference in Deficit, none of which are expected to have a material impact on the Company's consolidated financial statements.

**IFRS 23, Uncertainty of Income Tax Treatments**

IFRIC 23, *Uncertainty of Income Tax Treatments*, changes the method of calculating provisions for uncertain tax positions. The Company currently recognized provisions based on the most likely amount of the liability, if any, for each uncertain tax position. The interpretation requires a probability weighted average approach to be taken for issues for which there are a wide range of possible outcomes. For tax



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issues with a binary outcome, the most likely amount method still remains. The Company is in the process of finalizing the impact of the adoption of IFRIC 23.

None of the remaining standards and amendments to standards and interpretations are expected to have a significant effect on the consolidated financial statements of the Company.

**13. RISKS AND UNCERTAINTIES**

Turquoise Hill is subject to a number of risks due to the nature of the industry in which it operates, the present state of development of its business and the foreign jurisdictions in which it carries on business. The following is a summary description of the material risks and uncertainties to which the Company is subject. Some of the following statements are forward-looking and actual results may differ materially from the results anticipated in these forward-looking statements. Please refer to Section 21 – FORWARD-LOOKING STATEMENTS AND FORWARD-LOOKING INFORMATION – on page 44 of this MD&A. If any of such risks or risks not currently known to Turquoise Hill actually occurs or materializes, the Company's business, financial condition or results of operations could be adversely affected, even materially adversely affected.

**The Company may be limited in its ability to enforce the Investment Agreement and the Underground Plan against Mongolia, a sovereign government.**

The Investment Agreement and the Underground Plan impose numerous obligations and commitments upon the Government that provide clarity and certainty in respect of the development and operation of Oyu Tolgoi. The Investment Agreement also includes a dispute resolution clause that requires the parties to resolve disputes through international commercial arbitration procedures. Nevertheless, if and to the extent that the Government does not observe the terms and conditions of the Investment Agreement and the Underground Plan, there may be limitations on Turquoise Hill's ability to enforce the terms of the Investment Agreement and the Underground Plan against the Government, which is a sovereign nation, regardless of the outcome of any arbitration proceeding. In addition, the Working Group is currently reviewing the implementation of certain agreements entered into by the Government and the outcome of that review is pending. If the terms of the Investment Agreement and/or the Underground Plan cannot be enforced effectively, the Company would be limited in its ability to enforce its contractual rights and could be deprived of substantial rights and benefits arising from its investment in Oyu Tolgoi with little or no recourse against the Government for fair and reasonable compensation. Irrespective of the ultimate outcome of any potential dispute, any requirement to engage in discussions or proceedings with the Government, whether or not formal, would result in significant delays, expense and diversion of management's attention. Such an outcome would have a material adverse impact on Turquoise Hill and its share price.

**Turquoise Hill's ability to carry out its activities in multiple jurisdictions, including Mongolia, is subject to legal and political risks.**

Although the Company expects that the Investment Agreement and the Underground Plan will continue to bring significant stability and clarity to the legal, political and operating environment in which Turquoise Hill will develop and operate Oyu Tolgoi, the Company remains subject to legal and political risks in Mongolia. In addition, the Government also owns a significant stake in Oyu Tolgoi LLC which holds the Oyu Tolgoi property.

There can be no absolute assurance that the Company's assets will not be subject to nationalization, requisition, expropriation or confiscation, whether legitimate or not, by any authority or body. In addition, there can be no assurance that the political and economic policies of neighbouring countries, including China, in relation to Mongolia will not have adverse economic effects on the development of Turquoise Hill's mining projects, including its ability to access power, transport (including across borders) and sell its products and access construction labour, supplies and materials. There is no assurance that provisions under Mongolian law for compensation and reimbursement of losses to investors under such circumstances would be effective to restore the full value of the Company's original investment or to

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compensate for the loss of the current value of the Mongolian projects. Insofar as the Government is a sovereign entity against which the terms of the Investment Agreement and the Underground Plan may take considerable time to enforce (if enforceable at all), this risk applies to Oyu Tolgoi despite the provisions of the Investment Agreement respecting nationalization and expropriation. There can be no assurance that Mongolian laws protecting foreign investments will not be amended or abolished or that existing laws will be enforced or interpreted to provide adequate protection against any or all of the risks described herein. There can be no assurance that there would not be disputes resulting from multiple levels of corporate and/or governmental approvals and differing sophistication in relevant business and technical matters, inequality of bargaining power and incompatible strategic and economic objectives (both in the short term and the longer term) among the shareholders of Oyu Tolgoi LLC which could have a material adverse impact on Turquoise Hill's business prospects, results of operations and financial condition.

The Company carries out its activities in countries which may be affected in varying degrees by political stability, government regulations (including but not restricted to those related to the mining industry) and domestic or foreign investment therein, and by the policies of other nations in respect of these countries. Any changes in regulations or shifts in political conditions are beyond the control of Turquoise Hill and may adversely affect its business. The Company's mining, exploration and financing activities may be affected to varying degrees by government regulations, or other political and administrative undertakings, including those with respect to restrictions on production, price controls, export controls, income and other taxes, expropriation of property, employment, land use, water use, environmental legislation and mine safety. Turquoise Hill may be subject to disputes or issues with customs officials or border crossings affecting the shipment of the Company's products in jurisdictions in which it operates, and the ability of its customers to collect such products may arise and could have an adverse effect on Turquoise Hill's ability to collect and/or recognize revenue. In addition, in the various jurisdictions where the Company operates and finances its business activities (including Mongolia, China, U.S., Canada and Europe), it may from time to time be subject to disputes with tax authorities over the interpretation and application of existing tax legislation and/or computation of taxes owing to such jurisdictions, and face risks regarding future changes in the tax laws of such jurisdictions (and future changes in the way such tax authorities interpret and apply existing tax legislation) that could increase the amount of taxes owing. Turquoise Hill's activities may also be affected to varying degrees by terrorism, military repression, crime, extreme fluctuations in currency exchange rates and high inflation.

Moreover, the legal framework in Mongolia is, in many instances, based on recent political reforms or newly enacted legislation, which may not be consistent with long-standing conventions and customs. Although legal title risks in respect of Oyu Tolgoi are believed to be significantly mitigated by the terms of the Investment Agreement, there may still be ambiguities, inconsistencies and anomalies in the other agreements, licenses and title documents through which the Company holds its direct or indirect interests in other mineral resource properties in Mongolia, or the underlying legislation upon which those interests are based, which are atypical of more developed legal systems and which may affect the interpretation and enforcement of Turquoise Hill's rights and obligations. Many laws of certain of the countries in which the Company carries out its activities have been enacted, but in many instances they are neither understood nor enforced and may be applied in an inconsistent, arbitrary and unfair manner due to the substantial administrative discretion granted to the responsible government officials or agencies, while legal remedies may be uncertain, delayed or unavailable. These laws or their enforcement by national, regional or local authorities can adversely affect, among other things, water access rights, operating costs resulting from unanticipated increases in tariff rates and overall assessment of risk. These uncertainties could limit the legal protections available to Turquoise Hill. Even the Company's best efforts to comply with the laws and regulations may not result in effective compliance in the determination of government representatives, which may have a material adverse impact on Turquoise Hill and its share price. Accordingly, while Turquoise Hill believes that it has taken the legal steps necessary to obtain and hold its property and other interests in Mongolia, there can be no guarantee that such steps will be sufficient to preserve those interests.



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**The actual cost of developing Oyu Tolgoi may differ materially from Turquoise Hill's estimates, and development may involve unexpected problems or delays.**

The Company's estimates regarding the cost of development and operation of Oyu Tolgoi are estimates only and are based on many assumptions and analyses made by Turquoise Hill's management in light of their experience and perception of historical trends, current conditions and expected future developments, as well as other factors management believes are appropriate in the circumstances. These estimates and the assumptions upon which they are based are subject to a variety of risks and uncertainties and other factors that could cause actual expenditures to differ materially from those estimated. If these estimates prove incorrect, the total capital expenditures required to complete development of the underground components of Oyu Tolgoi may increase, which may have a material adverse impact on the Company, its results of operations, financial condition and share price.

In addition to the requirements of the Investment Agreement, there are also a number of uncertainties inherent in the development and construction of any new or existing mine, including Oyu Tolgoi. These uncertainties include the timing and cost, which can be considerable, of the construction of mining and processing facilities; the availability and cost of skilled labour, ground and rock mass conditions and stability, the impact of fluctuations in commodity prices, process water, power and transportation, including costs of transport for the supply chain for Oyu Tolgoi, which requires routing approaches which have not been fully tested; the annual usage fees payable to the local province for sand, aggregate and water; the availability and cost of appropriate smelting and refining arrangements; and the need to obtain necessary environmental and other government permits, such permits being on reasonable terms, and the timing of those permits. The cost, timing and complexities of mine construction and development are increased by the remote location of a property such as Oyu Tolgoi.

It is common in mining operations and in the development, construction or expansion of existing facilities to experience unexpected problems and delays during such activities, which may cause delays in the commencement or expansion of mineral production or sustainable production. Such delays could have unforeseen impacts on disclosed project economics. Accordingly, there is no assurance that the current or future development, construction or expansion activities will be successfully completed within cost estimates, on schedule or at all and, if completed, there is no assurance that such activities will result in profitable mining operations.

**There can be no assurance that Turquoise Hill will be able to secure the funding that it needs to continue development of the Oyu Tolgoi underground mine.**

Additional funding may be required to complete the development of the underground mine, which could potentially include construction of a power facility at Tavan-Tolgoi pursuant to the PSFA, and such additional funding, if required, may not be available or available on reasonable commercial terms. If the full amount of project and other financing required to complete these developments of the underground mine is not available or obtainable on reasonable commercial terms for such purposes or funding from the Oyut open pit mine operations is insufficient, the Company could seek to issue Common Shares or instruments convertible into equity, including through future rights offerings, which issuances could result in dilution to the holders of Common Shares and have a material adverse effect upon the market price of Common Shares. Under the terms of the covenants forming part of the Turquoise Hill Financing Support Agreement, the Company is prohibited from creating, incurring or permitting to remain outstanding any indebtedness, other than certain permitted indebtedness, and from amending its constating documents to create and issue Preferred Shares. As a result of these restrictions, in seeking to raise additional capital, the Company may not incur indebtedness for borrowed money or issue debt securities, other securities convertible into debt securities or Preferred Shares while the covenants forming part of the Turquoise Hill Financing Support Agreement are in force and effect unless it obtains a waiver or consent from Rio Tinto International Holdings Limited (RTIH) permitting the incurrence of such indebtedness or the issuance of such securities.

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**Recent and future amendments to Mongolian laws and regulations, whether actual or the interpretation thereof, could adversely affect Turquoise Hill's activities, its mining rights in Oyu Tolgoi, or make it more difficult or expensive to develop such project and carry out mining in Mongolia.**

The Government has put in place a framework and environment for foreign direct investment. However, there are political constituencies within Mongolia that have espoused ideas that would not be regarded by the international mining industry as conducive to foreign investment if they were to become law or official government policy. There can be no assurance that the present or future Parliament will refrain from enacting legislation that undermines the Investment Agreement or otherwise adversely impacts Oyu Tolgoi or that the present or a future government will refrain from adopting government policies or seeking to renegotiate the terms of the Investment Agreement in ways that are adverse to Turquoise Hill's interests or that impair the Company's ability to develop and operate Oyu Tolgoi or other projects on the basis presently contemplated, which may have a material adverse impact on Turquoise Hill and its share price.

In addition, mining operations, exploration and related financing activities are subject to extensive laws and regulations. These relate to production, development, exploration, exports, imports, taxes and royalties, labour standards, occupational health, waste disposal, protection and remediation of the environment, access to water, mine decommissioning and reclamation, mine safety, toxic substances, transportation safety and emergency response and other matters.

Compliance with these laws and regulations increases the costs of exploring, drilling, financing, developing, constructing, operating and closing mines and other facilities. It is possible that the costs, delays and other effects associated with these laws and regulations may impact the Company's decision as to whether to continue to operate in a particular jurisdiction or whether to proceed with exploration or development of properties and the nature of related investing and financing arrangements.

Since legal requirements change frequently, are subject to interpretation and may be enforced to varying degrees in practice, Turquoise Hill is unable to predict the ultimate cost of compliance with these changes and their effect on operations or other business activities. Furthermore, changes in governments, regulations, interpretations, policies or practices could have an adverse impact on the Company's future cash flows, earnings or results of operations and financial condition, which may have a material adverse impact on Turquoise Hill and its share price.

**The Investment Agreement commits Oyu Tolgoi LLC to eventually utilize only Mongolian power sources.**

The Investment Agreement commits Oyu Tolgoi LLC to eventually utilize Mongolian power sources. Although Turquoise Hill entered into the PSFA with the Government in December 2018, which provides a binding framework and pathway forward for the construction of the Tavan-Tolgoi-based power project, as well as establishes the basis for a long-term domestic power solution for Oyu Tolgoi, there is no certainty that this project will be completed, that the proposed power plant will be sufficient to meet the Company's needs or that further funding in addition to the existing project finance and proposed supplemental debt facilities (which funding would be subject to negotiation and may not be available or may only be available on substantively different terms from existing facilities). Despite Turquoise Hill's best efforts, the ability to meet its obligations under the PSFA or any future agreement committing the Company to use Mongolian power sources is an obligation is not necessarily within the Company's control and non-fulfilment of this requirement may result in a default under the Investment Agreement. Such default could result in termination of the Investment Agreement or damages accruing, which may have a material adverse impact on Turquoise Hill and its share price.



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**The Investment Agreement and the Underground Plan include a number of future covenants that may be outside of the control of Turquoise Hill to perform, a breach of which could have a material adverse effect on the Company and its business.**

The Investment Agreement and the Underground Plan commit Turquoise Hill to perform many obligations in respect of the development and operation of Oyu Tolgoi. While performance of many of these obligations is within the effective control of the Company, the scope of certain obligations may be open to interpretation. Further, the performance of other obligations may require co-operation from third parties or may be dependent upon circumstances that are not necessarily within the control of Turquoise Hill. For example:

- Mongolian nationals must represent at least 90% of Oyu Tolgoi employees now that Commercial Production has been attained, and 50% of Oyu Tolgoi's engineers must be Mongolian nationals within five years of achieving commercial production (i.e. by September 2018), which targets are achieved, and increasing to 70% after ten years of achieving commercial production (i.e. expected after September 2023). Achieving or maintaining these targets is contingent upon the availability of a sufficient number of qualified personnel, which is not wholly within the Company's control.
- Although Oyu Tolgoi LLC has achieved commercial production, there is a risk that unforeseen mining or processing difficulties may be encountered that could prevent Oyu Tolgoi LLC from maintaining the required commercial production levels.
- Oyu Tolgoi LLC is obligated, on a priority basis, to purchase and utilize services supplied by Mongolian citizens and/or legal entities, and equipment, raw materials, other materials and spare parts manufactured in Mongolia, to the extent such services and materials are available on a competitive time, cost, quantity and quality basis, and to give preference to Mongolian suppliers of freight and transportation services required for Oyu Tolgoi. Such services, materials and suppliers may not be available to the extent required or may be available upon commercial terms that are less advantageous than those available from other sources.
- Oyu Tolgoi LLC has community development commitments and social responsibility obligations. There is a risk that Oyu Tolgoi LLC will be unable to meet the expectations or demands of relevant community stakeholders to the extent contemplated to allow Oyu Tolgoi LLC to meet its commitments under the Investment Agreement.
- The extension of the term of the Investment Agreement is subject to a number of conditions, including Turquoise Hill having demonstrated that Oyu Tolgoi has been operated in accordance with industry best practices in terms of national and community benefits, environment and health and safety practices. The inherently subjective nature of these criteria creates the risk that the Company and the Government may disagree as to whether the conditions for extending the term of the Investment Agreement have been met.

Despite Turquoise Hill's best efforts, such provisions are not necessarily within its control and non-fulfilment of any such provision may result in a default or breach under the Investment Agreement and the Underground Plan. Such a default or breach could result in termination of the Investment Agreement and the Underground Plan or damages accruing, which may have a material adverse impact on the Company and its share price.

In addition to the Investment Agreement and the Underground Plan, Turquoise Hill is party to a number of other material contractual agreements with a number of third parties, including the Government and Rio Tinto. Should the Company breach any of these agreements, it could face consequences that could have an adverse effect on its share price and/or the operations of Oyu Tolgoi, Turquoise Hill's main asset. Rio Tinto, as the Company's majority shareholder and as manager of Oyu Tolgoi, could materially affect the business of Turquoise Hill if it were to claim damages for a breach of an agreement against the Company or require specific performance of an obligation that Turquoise Hill is unable to comply with.

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**RTIH, as the holder of a majority of the common shares, as manager of Oyu Tolgoi, and as manager of a substantial portion of Turquoise Hill's receivables and liquid asset deposits, has the ability to exert a significant degree of control over the Company, Oyu Tolgoi LLC and Oyu Tolgoi.**

RTIH, a wholly-owned subsidiary of Rio Tinto, together with other Rio Tinto affiliates, owns a majority of the outstanding common shares and can exercise its voting power to elect all of the members of the Board of Directors, subject to applicable securities legislation. RTIH can also exercise its majority voting power to unilaterally pass any ordinary resolution submitted to a vote of the Company's shareholders, except for resolutions in respect of which RTIH is an interested party and for which disinterested shareholder approval is required. In addition, under the 2010 heads of agreement (HoA), RTIH was appointed as manager of Oyu Tolgoi which provides RTIH with responsibility for the management of Oyu Tolgoi.

RTIH is also able to exert a significant degree of control over the management, development and operation of Oyu Tolgoi, as well as Turquoise Hill, through a series of governance mechanisms and restrictive covenants established under the 2006 private placement agreement (Private Placement Agreement), the HoA and other agreements entered into with Rio Tinto. These include the Technical Committee established under the Private Placement Agreement and the Operating Committee established under the HoA, through which RTIH is able to control decisions respecting the business of Oyu Tolgoi LLC subject to a veto of the Company in respect of certain special matters.

In addition, on December 15, 2015, Turquoise Hill entered into the Cash Management Services Agreement with 9539549 Canada Inc., a wholly-owned subsidiary of Rio Tinto, pursuant to which the net proceeds from the 2015 project finance facility (Project Finance Facility) are to be placed with and managed by 9539549 Canada Inc. until they are returned to Turquoise Hill for purposes of funding the underground at Oyu Tolgoi. Although RTIH has guaranteed the obligations of 9539549 Canada Inc. under the Cash Management Services Agreement, a delay in the return of such funds when requested by Turquoise Hill, or the unavailability of such funds for any reason, could result in a material adverse effect on the Company.

In May 2016, Turquoise Hill and its wholly-owned subsidiary, Movele S.à r.l., entered into the Movele Deposit Agreement, pursuant to which Movele S.à r.l. deposited funds with Rio Tinto Finance plc (RTF), which are invested or deposited by RTF for fixed terms. The inability of Movele S.à r.l. to access cash and cash equivalent investments on deposit with RTF under the Movele Deposit Agreement, in a timely manner or at all due to circumstances which limit RTF's ability to return such funds to Movele S.à r.l. could have a material adverse impact on Turquoise Hill and its business.

The interests of RTIH and the interests of the Company's other shareholders may not necessarily be aligned in all respects and there can be no assurance that RTIH, together with other Rio Tinto affiliates, will exercise its rights as Turquoise Hill's majority shareholder and its other contractual rights under the Private Placement Agreement, the HoA and other agreements entered into with Rio Tinto in a manner that is consistent with the best interests of either the Company or Turquoise Hill's other shareholders.

**The Company's actual production, revenues and capital expenditures may differ materially from mineral reserve estimates.**

Market fluctuations in the price of metals or increases in the costs to recover metals from Turquoise Hill's mining projects may render mining of ore reserves uneconomical and affect the Company's operations in a materially adverse manner. Moreover, various short-term operating factors may cause a mining operation to be unprofitable in any particular accounting period.

Prolonged declines in the market price of metals may render reserves containing relatively lower grades of mineralization uneconomic to exploit and could materially reduce Turquoise Hill's reserves and resources. Should such reductions occur, material write-downs of the Company's investments in mining properties or the discontinuation of development or production might be required, and there could be cancellations of or material delays in the development of new projects, increased net losses and reduced



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cash flow. The estimates of mineral reserves and resources attributable to a specific property are based on internationally accepted engineering and evaluation principles. The estimated amount of contained metals in proven mineral reserves and probable mineral reserves does not necessarily represent an estimate of a fair market value of the evaluated properties.

Turquoise Hill uses prices reflecting market pricing projections in the financial modeling for Oyu Tolgoi which are subjective in nature. It should be expected that actual prices will be different than the prices used for such modelling (either higher or lower), and the differences could be significant.

A number of the uncertainties relate to the costs and availability of smelting services for the metals mined from Oyu Tolgoi, which require arrangements with third parties and involve the potential for fluctuating costs to transport the metals and fluctuating costs and availability of such services. These costs can be significantly impacted by a variety of industry-specific and also regional and global economic factors (including, among others, those which affect commodity prices). Many of these factors are beyond the Company's control.

**The mineral resource and mineral reserve estimates are estimates only and are subject to change based on a variety of factors, some of which are beyond Turquoise Hill's control.**

The estimates of mineral reserves and mineral resources in the Annual Information Form (AIF), including the anticipated tonnages and grades that are expected to be achieved or the indicated level of recovery that will be realized, are estimates and no assurances can be given as to their accuracy. Such estimates are, in large part, based on interpretations of geological data obtained from drill holes and other sampling techniques and modelling assumptions and parameters. Large-scale continuity and character of the Company's deposits will only be determined once significant additional drilling and sampling has been completed and analyzed. Actual mineralization or formations may be different from those predicted. Reserve and resource estimates are materially dependent on prevailing metal prices and the cost of recovering and processing minerals at the individual mine sites.

The estimated mineral resources and mineral reserves described in the AIF should not be interpreted as assurances of commercial viability or potential or of the profitability of any future operations. Investors are cautioned not to place undue reliance on these estimates. In addition, inferred mineral resources are quoted in the 2016 Oyu Tolgoi Technical Report and in the AIF. Inferred mineral resources have a great amount of uncertainty as to their existence, and economic and legal feasibility. Accordingly, there is no assurance that inferred mineral resources will ever be upgraded to a higher category. Investors are cautioned not to assume that part or all of an inferred mineral resource exists, or is economically or legally mineable.

There are numerous uncertainties inherent in estimating quantities of mineral reserves and resources. The estimates referenced in the AIF are based on various assumptions relating to commodity prices and exchange rates during the expected life of production, mineralization of the area to be mined, the projected cost of mining, and the results of additional planned development work. Actual future production rates and amounts, revenues, taxes, operating expenses, environmental and regulatory compliance expenditures, development expenditures, and recovery rates may vary substantially from those assumed in the estimates. Many of the projections and estimates are based on subjective views and assumptions. Any significant change in these assumptions, including changes that result from variances between projected and actual results, could result in material downward revision to current estimates, which may have a material adverse impact on Turquoise Hill and its share price.

**Turquoise Hill may be subject to public allegations, regulatory investigations or litigation that could materially and adversely affect the Company's business.**

Turquoise Hill at one time conducted exploration and mining operations in a number of jurisdictions and, as a result of such activities and operations or current or future activities and operations, including, without limitation, jurisdictions subject to various sanctions regimes, may be subject to governmental or regulatory investigations and claims in or regarding those jurisdictions, including jurisdictions in which it is

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not currently active. A serious allegation, formal investigation by regulatory authorities or other legal claim (in each case, regardless of the ultimate decision) could have a material adverse impact on the Company, its reputation and its share price.

All industries, including the mining industry, are subject to legal claims, with and without merit. Turquoise Hill may be required to defend against any such public allegations, regulatory investigations or other claims that are asserted against it, or may deem it necessary or advisable to initiate legal proceedings to protect its rights. The expense and distraction of any such public allegations, regulatory investigations or other claims or proceedings, even with respect to claims that have no merit and whether or not resolved in the Company's favour, could materially and adversely affect its business, operating results, and financial condition. There may also be considerable cost and disruption in responding to allegations, investigations or claims and taking any remedial action. Further, if an investigation, claim or proceeding were resolved against Turquoise Hill or if it were to settle any such dispute, the Company may be required to pay damages and costs or refrain from certain activities, any of which could have a material adverse impact on Turquoise Hill's business, operating results, and financial condition.

**Turquoise Hill is subject to anti-corruption legislation.**

The Company is subject to the United States' *Foreign Corrupt Practices Act* and other similar legislation, such as, but not necessarily limited to, Canada's *Corruption of Foreign Public Officials Act* (collectively, "Anti-Corruption Legislation"), which prohibits Turquoise Hill or any director, officer, employee, consultant or agent of the Company or any shareholder of Turquoise Hill acting on its behalf from giving, paying, offering to give or pay, or authorizing the giving or payment of any reward, advantage, benefit or anything of value to any foreign government or public official, government staff member, political party, or political candidate in an attempt to obtain or retain business, obtain an advantage in the course of business, or to otherwise induce or influence a person working in an official capacity. The Anti-Corruption Legislation also requires public companies to make and keep books and records that accurately and fairly reflect their transactions and to devise and maintain an adequate system of internal accounting controls. The Company's international activities create the risk of unauthorized payments or offers of payments by its employees, consultants or agents, even though they may not always be subject to its control. Turquoise Hill strictly prohibits these practices by its employees, consultants and agents. However, the Company's existing safeguards and any future improvements may prove to be less than effective, and its employees, consultants or agents may engage, and may previously have engaged, in conduct for which Turquoise Hill might be held responsible. Any failure by the Company to adopt appropriate compliance procedures and ensure that its employees, consultants and agents comply with the Anti-Corruption Legislation and applicable laws and regulations in foreign jurisdictions could result in substantial penalties or restrictions on its ability to conduct its business, which may have a material adverse impact on Turquoise Hill and its share price.

**Mining projects are sensitive to the volatility of metal prices.**

The long-term viability of Oyu Tolgoi depends in large part on the world market prices of copper, gold and silver. The market prices for these metals are volatile and are affected by numerous factors beyond the Company's control. These factors include international economic and political trends, expectations of inflation, global and regional demand, currency exchange fluctuations, interest rates and global or regional consumption patterns, speculative activities, increased production due to improved mining and production methods and economic events, including the performance of Asia's economies. Ongoing worldwide economic uncertainty could lead to prolonged recessions in many markets which may, in turn, result in reduced demand for commodities, including base and precious metals. It is anticipated that there will be continued volatility in metal prices.

The aggregate effect of these factors on metal prices in the medium or long term is impossible to predict. Should prevailing metal prices be depressed or below variable production costs of Turquoise Hill's current and planned mining operations for an extended period, losses may be sustained and, under certain circumstances, there may be a curtailment or suspension of some or all of the Company's mining, development and exploration activities. Turquoise Hill would also have to assess the economic impact of



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any sustained lower metal prices on recoverability and, therefore, the cut-off grade and level of the Company’s reserves and resources. These factors could have an adverse impact on Turquoise Hill’s future cash flows, earnings, results of operations, stated reserves and financial condition, which may have a material adverse impact on the Company and its share price.

The following table sets forth for the periods indicated: (i) the London Metals Exchange’s high, low and average settlement prices for copper in U.S. dollars per pound; (ii) the high, low and average London afternoon fixing prices for gold in U.S. dollars per ounce; and (iii) the high, low and average London afternoon fixing prices for silver in U.S. dollars per ounce.

Year	Copper			Gold			Silver		
	High	Low	Average	High	Low	Average	High	Low	Average
2014 .....	\$3.37	\$2.84	\$3.10	\$1,385	\$1,142	\$1,266	\$22.05	\$15.28	\$19.08
2015 .....	\$2.94	\$2.04	\$2.49	\$1,296	\$1,049	\$1,160	\$18.36	\$13.67	\$15.66
2016 .....	\$2.69	\$1.96	\$2.21	\$1,366	\$1,077	\$1,251	\$20.71	\$13.58	\$17.16
2017 .....	\$3.27	\$2.48	\$2.80	\$1,346	\$1,151	\$1,257	\$18.56	\$15.22	\$17.05
2018 .....	\$3.29	\$2.64	\$2.96	\$1,355	\$1,178	\$1,268	\$17.52	\$13.97	\$15.71

**There is no guarantee that any exploration or development activity will result in additional commercial production.**

Development of a mineral property is contingent upon obtaining satisfactory exploration results. Mineral exploration and development involves substantial expenses and a high degree of risk, which even a combination of experience, knowledge and careful evaluation may not be able to adequately mitigate. There is no assurance that additional commercial quantities of ore will be discovered on any of Turquoise Hill’s properties, including Hugo North Lift 2, Hugo South and Heruga. There is also no assurance that, even if commercial quantities of ore are discovered, a mineral property will be brought into commercial production. The discovery of mineral deposits is dependent upon a number of factors, not the least of which is the technical skill of the exploration personnel involved. The commercial viability of a mineral deposit, once discovered, is also dependent upon a number of factors, some of which are the particular attributes of the deposit, such as size, grade and proximity to infrastructure, metal prices and government regulations, including regulations relating to royalties, allowable production, importing and exporting of minerals, and environmental protection. In addition, assuming discovery of a commercial ore body, depending on the type of mining operation involved, several years can elapse from the initial phase of drilling until commercial operations are commenced. Most of the above factors are beyond the control of the Company.

**Under Mongolia’s Resolution No. 175, the Government may seek contribution or reimbursement from Oyu Tolgoi LLC for compensation it provides to third parties adversely affected by Resolution No. 175.**

Mongolia passed Resolution No. 175, the purpose of which is to authorize the designation of certain land areas for “State special needs” with certain defined areas in proximity to Oyu Tolgoi. These State special needs areas are to be used for infrastructure facilities for the development of Oyu Tolgoi.

Most of the areas designated for State special needs are subject to existing mineral exploration and mining licenses issued by the Government to third parties and, in certain cases, a mineral resource has been declared and registered with the applicable governmental authorities in respect of such licenses.

In accordance with the terms of Resolution No. 175 and the Minerals Law (2006), the Government will be responsible for compensating third parties whose right to use and access the subject land area is adversely affected by the application of Resolution No. 175. The Minerals Law specifically encourages non-monetary compensation where the Government issues to such third parties a mineral exploration or

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mining license in land areas of which mineral resources are identified by a geological study or exploration works with state funding, if it reaches agreement with the third parties.

To the extent that agreement for non-monetary compensation are not reached with affected third parties, it is not clear at this time whether the Government will expect any compensation that may be payable to such third parties to be borne by Oyu Tolgoi LLC. If the Government seeks contribution or reimbursement from Oyu Tolgoi LLC for compensation it provides such third parties, the amount of such contribution or reimbursement is not presently quantifiable but may be significant. The description of Resolution No. 175 has been provided by Oyu Tolgoi LLC and has been relied on under Item 3 of NI 43-101 Reliance on Other Experts.

In April 2015, the Standing Committee of the Parliament of Mongolia requested the Government to modify Resolution No. 175 due to an alleged inconsistency between Resolution No. 175 and the Minerals Law and Land Law. Oyu Tolgoi LLC understands that the Government supports the validity and justification for Resolution No. 175 and that Resolution No. 175 will not be modified or revoked.

In September 2016, one of the affected third parties challenged the validity of Resolution No. 175 at an administrative court of Mongolia, and claimed that Resolution No. 175 be resolved to be “obviously illegal”. The Government, as a defendant, attended the litigation. In June 2017, the Supreme Court of Mongolia resolved that there is no legal ground where Resolution No. 175 is deemed to be “obviously illegal.”

**There can be no assurance that the interests held by Turquoise Hill in its mining, development and exploration properties are free from defects or that material contractual arrangements between the Company and entities owned or controlled by foreign governments will not be unilaterally altered or revoked.**

Turquoise Hill has investigated its rights to exploit and explore its various properties and, to the best of its knowledge, those rights are in good standing, but no assurance can be given that such rights will not be revoked, or significantly altered, to the detriment of the Company. There can also be no assurance that Turquoise Hill’s rights will not be challenged or impugned by third parties. The Company has also applied for rights to explore various properties, but there is no certainty that such rights, or any additional rights applied for, will be granted on terms satisfactory to Turquoise Hill or at all, which may have a material adverse impact on the Company and its share price.

**Turquoise Hill is subject to substantial environmental and other regulatory requirements and such regulations are becoming more stringent. Non-compliance with such regulations, either through current or future operations or a pre-existing condition, could materially adversely affect the Company.**

All phases of Turquoise Hill’s operations are subject to environmental regulations in the various jurisdictions in which it operates and has operated. For example, Oyu Tolgoi is subject to a requirement to meet environmental protection obligations. The Company must complete an environmental protection plan for approval by the Government and complete a report prepared by an independent expert on environmental compliance every three years.

Failure to comply with applicable laws, regulations and permitting requirements may result in enforcement actions thereunder, including orders issued by regulatory or judicial authorities causing operations to cease or be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment, or remedial actions. Parties engaged in mining operations may be required to compensate those suffering loss or damage by reason of the mining activities and may have civil or criminal fines or penalties imposed for violations of applicable laws or regulations.

Environmental legislation is evolving in a manner which will likely require stricter standards and enforcement, increased fines and penalties for non-compliance, more stringent environmental assessments of proposed projects and a heightened degree of responsibility for companies and their



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directors, officers and employees. There is no assurance that future changes in environmental regulation, if any, will not adversely affect Turquoise Hill's operations. Environmental hazards may exist on the properties in which the Company holds interests which are presently unknown to Turquoise Hill and which have been caused by previous or existing third-party owners or operators of the properties. Government approvals and permits are also often required in connection with various aspects of the Company's operations. To the extent such approvals are required and not obtained, Turquoise Hill may be delayed or prevented from proceeding with planned development or exploration of its mineral properties, which may have a material adverse impact on the Company and its share price.

Amendments to current laws, regulations and permits governing operations and activities of mining companies, or more stringent implementation thereof, could have a material adverse impact on Turquoise Hill and cause increases in capital expenditures or production costs or reductions in levels of production at producing properties or require abandonment or delays in development of new mining properties, which may have a material adverse impact on the Company and its share price.

**Previous mining operations may have caused environmental damage at former mining projects of Turquoise Hill, and if the Company cannot prove that such damage was caused by other operators, its indemnities and exemptions from liability may not be effective.**

Turquoise Hill has received exemptions from liability from relevant governmental authorities for environmental damage caused by previous mining operations at former mining projects. There is a risk, however, that, if an environmental accident occurred at those sites, including with respect to tailings or water contamination, it may be difficult or impossible to assess the extent to which environmental damage was caused by the Company's activities or the activities of other operators. In that event, the liability exemptions could be ineffective and possibly worthless, which may have a material adverse impact on Turquoise Hill and its share price.

**Turquoise Hill cannot insure against all of the risks associated with mining.**

Production, development and exploration operations on mineral properties involve numerous risks and hazards, including rock bursts, slides, fires, earthquakes or other adverse environmental occurrences; industrial accidents; labour disputes; political and social instability; technical difficulties due to unusual or unexpected geological formations; failures of pit walls, shafts, head frames, and/or underground workings; and flooding and periodic interruptions due to inclement or hazardous weather conditions.

These risks can result in, among other things, damage to, and destruction of, mineral properties or production facilities; personal injury (and even loss of life); environmental damage including resulting from the presence of tailings or water contamination; delays in mining; monetary losses; and legal liability.

It is not always possible to obtain insurance (or to fully insure) against all such risks and the Company may decide not to insure against certain risks as a result of high premiums or other reasons. The occurrence of an event that is not fully covered or covered at all, by insurance, could have a material adverse effect on Turquoise Hill's financial condition, results of operations and cash flows and could lead to a decline in the value of the securities of the Company. Turquoise Hill does not maintain general insurance against political or environmental risks, which may have a material adverse impact on the Company and its share price.

**Global climate change**

Global climate change could exacerbate certain of the threats facing Turquoise Hill's business, including the frequency and severity of weather-related events, resource shortages, changes in rainfall and storm patterns and intensities, water shortages, rising water levels and changing temperatures which can disrupt the Company's operations, damage its infrastructure or properties, create financial risk to the business of Turquoise Hill or otherwise have a material adverse effect on our results of operations, financial position or liquidity. These may result in substantial costs to respond during the event, to recover from the event and possibly to modify existing or future infrastructure requirements to prevent recurrence.

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Climate changes could also disrupt the operations of the Company by impacting the availability and cost of materials needed for mining operations and could increase insurance and other operating costs.

Global climate change also results in regulatory risks which vary according to the national and local requirements implemented by each jurisdiction where we are present. There continues to be a lack of consistent climate legislation, which creates economic and regulatory uncertainty. Increased public awareness and concern regarding global climate change may result in more legislative and/or regulatory requirements to reduce or mitigate the effects of greenhouse gas emissions.

**Turquoise Hill does not expect to pay dividends for the foreseeable future.**

The Company has not paid any dividends on its common shares to date, nor does it contemplate a declaration of payment of dividends until its operations generate sufficient excess cash flow for distribution as it anticipates that it will reinvest the majority of, if not all, future earnings, if any, in the development and growth of Oyu Tolgoi and its business generally. Therefore, investors may not receive any funds unless they sell their common shares, and investors may be unable to sell their common shares on favourable terms or at all. Turquoise Hill cannot give any assurance of a positive return on investment or that investors will not lose the entire amount of their investment in common shares. Prospective investors seeking or needing dividend income or liquidity are discouraged from purchasing common shares.

**Turquoise Hill's ability to obtain dividends or other distributions from its subsidiaries may be subject to restrictions imposed by law, foreign currency exchange regulations and financing arrangements.**

The Company conducts its operations through subsidiaries. Its ability to obtain dividends or other distributions from its subsidiaries may be subject to restrictions or costs on dividends or repatriation of earnings under applicable local law, including any tax obligations, monetary transfer restrictions and foreign currency exchange regulations in the jurisdictions in which the subsidiaries operate or are incorporated. The ability of Turquoise Hill's subsidiaries to pay dividends or to make other distributions to the Company is also subject to their having sufficient funds to do so. If its subsidiaries are unable to pay dividends or to make other distributions, Turquoise Hill's growth may be inhibited unless it is able to obtain additional equity or debt financing on acceptable terms. In the event of a subsidiary's liquidation, the Company may lose all or a portion of its investment in that subsidiary. Turquoise Hill expects to be able to rely on the terms of the Investment Agreement to pay dividends out of Mongolia, subject to certain restrictions contained in the Investment Agreement, but will be unable to do so in respect of projects that are not covered by the terms of the Investment Agreement, which may have a material adverse impact on the Company and its share price.

**There is no assurance that Turquoise Hill will be capable of consistently producing positive operating cash flows, failing which capital may not at all times be available on terms acceptable to the Company or at all.**

Oyu Tolgoi LLC generated positive operating cash flows in 2018. However, there is no assurance that Turquoise Hill will be capable of producing positive cash flow on a consistent basis or for a sustained period of time. For instance, a reduction or delay in orders from leading customers could have a material adverse effect upon the Company's results of operations, including operating cash flows. Such reduction or delay in orders from leading customers may be due to market, economic or competitive conditions and customers that previously accounted for significant revenue may not necessarily generate similar levels of or any revenue in any future period. The failure to obtain new customers or repeat orders from existing customers may materially affect Turquoise Hill's operating results, including operating cash flows. The Company anticipates that its exposure to a group of key customers in any given fiscal year will continue for the foreseeable future. There is a risk that existing customers will elect not to do business with Turquoise Hill in the future or will experience financial or other difficulties.



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It is therefore possible that the Company be required to make arrangements for additional capital, whether through project debt financing or otherwise, to continue open-pit operations as currently planned or in respect of additional funding requirements for the underground mine or for the power plant.

If such additional capital is required, Turquoise Hill may be required to access securities markets. Such markets throughout the world are cyclical and, over time, tend to undergo high levels of price and volume volatility, and the market price of securities of many companies, particularly those in the resource sector, can experience wide fluctuations which are not necessarily related to the operating performance, underlying asset values or prospects of such companies. Increased levels of volatility and resulting market turmoil could adversely impact the Company and its share price. In addition, in the past, following periods of volatility in the market price of a particular company's securities, securities class action litigation has often been brought against that company. Turquoise Hill cannot provide assurance that similar litigation will not occur in the future with respect to it. Such litigation could result in substantial costs and a diversion of management's attention and resources, which could have a material adverse effect upon the Company's business, operating results, and financial condition.

If Turquoise Hill is required to access credit markets to carry out its development objectives, the state of domestic and international credit markets and other financial systems could affect the Company's access to, and cost of, capital. If these credit markets were significantly disrupted, such disruptions could make it more difficult for Turquoise Hill to obtain, or increase its cost of obtaining, capital and financing for its operations. Such capital may not be available on terms acceptable to the Company or at all, which may have a material adverse impact on the value of Oyu Tolgoi and, consequently, on Turquoise Hill and its share price.

**The Company's prospects depend on its ability to attract and retain key personnel.**

Recruiting and retaining qualified personnel is critical to Turquoise Hill's success. The number of persons skilled in the acquisition, development and exploration of mining properties is limited and competition for such persons is intense. The Company believes that it has been successful in recruiting the necessary personnel to meet its corporate objectives but, as Turquoise Hill's business activity grows, it will require additional key financial, operational, technical, mining and management personnel, as well as additional staff on the operations side. The Company is also dependent on Rio Tinto for the secondment of skilled labour at Oyu Tolgoi, particularly in the construction and development phases. Although Turquoise Hill believes that it will be successful in attracting and retaining qualified personnel, including qualified secondees on a timely basis from Rio Tinto, there can be no assurance of such success.

In addition, pursuant to the terms of the Investment Agreement, Oyu Tolgoi LLC is obligated to hire a specific number of Mongolian nationals following the achievement of commercial production. Among other obligations, Oyu Tolgoi LLC must use its best endeavours to ensure that 50% of its engineers are Mongolian nationals within five years of achieving commercial production (i.e. by September 2018), which target is achieved, and increasing to 70% after ten years of achieving commercial production (i.e. after September 2023) (and failure to meet these levels will result in financial penalties).

**Turquoise Hill may from time to time hold substantial funds in cash, cash equivalents, loans and receivables, and other deposits and there is a risk that financial market turmoil or other extraordinary events could prevent the Company from obtaining timely access to such funds or result in the loss of such funds.**

Turquoise Hill may from time to time hold substantial funds in cash, cash equivalents and other deposits, including treasury bills, money market funds, liquidity funds, bank deposits, and receivables and deposits with related parties. Management has adopted a conservative investment policy with respect to such funds, as the Company may require that these funds be used on short notice to support its business objectives. Nevertheless, there is a risk that an extraordinary event in financial markets generally or with respect to an obligor under an investment individually will occur that prevents Turquoise Hill from accessing its funds. Such an event could, in the case of delayed liquidity, have a negative impact on the

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implementation of time sensitive business objectives that require access to such funds or such an event could, in extreme circumstances, result in the loss of some or all of such funds.

**The Company may experience cybersecurity threats, which could result in disruptions in business operations and adverse operating results.**

Turquoise Hill relies on secure and adequate operations of information technology systems in the conduct of its operations. Access to and security of the information technology systems are critical to the Company's operations. To Turquoise Hill's knowledge, it has not experienced any material losses relating to disruptions to its information technology systems. The Company has implemented ongoing policies, controls and practices to manage and safeguard Turquoise Hill and its stakeholders from internal and external cybersecurity threats and to comply with changing legal requirements and industry practice. The Company is also dependent on Rio Tinto to manage the information technology systems of Oyu Tolgoi. Given that cyber risks cannot be fully mitigated and the evolving nature of these threats, Turquoise Hill may not have the resources or technical sophistication to anticipate, prevent, or recover from cyber attacks and cannot assure that its information technology systems are fully protected from cybercrime or that the systems will not be inadvertently compromised, or without failures or defects. Disruptions to the Company's information technology systems, including, without limitation, security breaches, power loss, theft, computer viruses, cyber-attacks, natural disasters, and non-compliance by third-party service providers and inadequate levels of cybersecurity expertise and safeguards of third-party information technology service providers, may adversely affect the operations of Turquoise Hill as well as present significant costs and risks including, without limitation, loss or disclosure of confidential, proprietary, personal or sensitive information and third-party data, material adverse effect on its financial performance, compliance with its contractual obligations, compliance with applicable laws, damaged reputation, remediation costs, potential litigation, regulatory enforcement proceedings and heightened regulatory scrutiny.

**Turquoise Hill may be a passive foreign investment corporation (PFIC), which could have adverse U.S. federal income tax consequences to U.S. holders of common shares.**

Based on the scope of its past, current and projected operations, the Company does not believe that it was a PFIC for the 2018 tax year. However, the determination of Turquoise Hill's PFIC status for any year is very fact-specific, and there can be no assurance in this regard for future years. If the Company is classified as a PFIC, U.S. holders of common shares could be subject to adverse U.S. federal income tax consequences, including increased tax liabilities and possible additional reporting requirements, which may have a material adverse impact on Turquoise Hill and its share price. Shareholders should consult their own tax advisors in respect to same.



**14. RELATED-PARTY TRANSACTIONS**

As at December 31, 2018, Rio Tinto's equity ownership in the Company was 50.8% which was unchanged from December 31, 2017. The following tables present the consolidated financial statement line items within which transactions with Rio Tinto are reported.

<b>Statements of Income</b>	<b>Year Ended December 31,</b>	
<b>(Stated in \$000's of dollars)</b>	<b>2018</b>	<b>2017</b>
Operating and corporate administration expenses:		
Cost recoveries - Turquoise Hill	\$ 623	\$ 1,091
Management services payment (i)	(30,055)	(24,554)
Cost recoveries - Rio Tinto (ii)	(40,627)	(41,632)
Finance income:		
Cash and cash equivalents (iii)	20,175	13,105
Receivable from Rio Tinto (iv)	119,688	134,130
Finance costs:		
Completion support fee (v)	(108,421)	(108,158)
<b>Total</b>	<b>\$ (38,617)</b>	<b>\$ (26,018)</b>

<b>Statement of Cash Flows</b>	<b>Year Ended December 31,</b>	
<b>(Stated in \$000's of dollars)</b>	<b>2018</b>	<b>2017</b>
<i>Cash generated from operating activities</i>		
Interest received (iii, iv)	\$ 72,012	\$ 52,232
Interest paid (v)	(11,918)	(40,913)
<i>Cash flows from investing activities</i>		
Receivable from related party: amounts withdrawn (iv)	1,270,000	820,000
Expenditures on property, plant and equipment:		
Management services payment and cost recoveries - Rio Tinto (i), (ii)	(61,145)	(49,362)

<b>Balance sheets</b>	<b>December 31,</b>	<b>December 31,</b>
<b>(Stated in \$000's of dollars)</b>	<b>2018</b>	<b>2017</b>
Cash and cash equivalents (iii)	\$ 741,711	\$ 741,711
Trade and other receivables	15,641	12,819
Prepaid expenses and other assets	2,928	35,736
Receivable from related party and other non-current financial assets (iv)	1,886,284	3,156,284
Trade and other payables:		
Management services payment - Rio Tinto (i)	(15,700)	(14,128)
Cost recoveries - Rio Tinto (ii)	(35,790)	(38,180)
<b>Total</b>	<b>\$ 2,595,074</b>	<b>\$ 3,894,242</b>

(i) In accordance with the ARSHA, which was signed on June 8, 2011, and other related agreements, Turquoise Hill is required to make a management services payment to Rio Tinto equal to a percentage of all capital costs and operating costs incurred by Oyu Tolgoi from March

- 31, 2010 onwards. After signing of the Underground Plan on May 18, 2015, the management services payment to Rio Tinto is calculated as 1.5% applied to underground development capital costs, and 3% applied to operating costs and capital related to current operations.
- (ii) Rio Tinto recovers the costs of providing general corporate support services and mine management services to Turquoise Hill. Mine management services are provided by Rio Tinto in its capacity as the manager of Oyu Tolgoi.
- (iii) In addition to placing cash and cash equivalents on deposit with banks or investing funds with other financial institutions, Turquoise Hill may deposit cash and cash equivalents with Rio Tinto in accordance with an agreed upon policy and strategy for the management of liquid resources. At December 31, 2018, cash equivalents deposited with wholly-owned subsidiaries of Rio Tinto totalled \$741.7 million, earning interest at rates equivalent to those offered by financial institutions or short-term corporate debt.
- (iv) As part of project finance, Turquoise Hill appointed 9539549 Canada Inc., a wholly owned subsidiary of Rio Tinto, as service provider to provide post-drawdown cash management services in connection with net proceeds from the project finance facility, which were placed with 9539549 Canada Inc. and shall be returned to Turquoise Hill as required for purposes of Oyu Tolgoi underground mine development and funding. Rio Tinto International Holdings Limited, a wholly-owned subsidiary of Rio Tinto, has guaranteed the obligations of the service provider under this agreement. At December 31, 2018, amounts due from 9539549 Canada Inc. totalled \$1,886.3 million, earning interest at an effective annual rate of LIBOR plus 2.45%. The interest rate reflects: interest receivable at LIBOR minus 0.05%; plus a benefit of 2.5% arising on amounts receivable from 9539549 Canada Inc. under the CMSA, which are net settled with the 2.5% completion support fee described in (v) below.
- (v) As part of the project finance agreements, Rio Tinto agreed to provide a guarantee, known as the completion support undertaking (CSU) in favour of the commercial banks and the export credit agencies. In consideration for providing the CSU, Turquoise Hill is required to pay Rio Tinto a fee equal to 2.5% of the amounts drawn under the facility. The annual completion support fee of 2.5% on amounts drawn under the facility is accounted for as a borrowing cost and included within interest expense and similar charges. The fee is settled net of a benefit arising on amounts receivable from 9539549 Canada Inc. under the CMSA described in (iv) above. The fee payment obligation will terminate on the date Rio Tinto's CSU obligations to the project lenders terminate.

**15. NON-GAAP MEASURES**

The Company presents and refers to the following non-GAAP measures, which are not defined in IFRS. A description and calculation of each measure is given below and may differ from similarly named measures provided by other issuers. These measures are presented in order to provide investors and other stakeholders with additional understanding of performance and operations at Oyu Tolgoi and are not intended to be used in isolation from, or as a replacement for, measures prepared in accordance with IFRS.

**Operating cash costs**

The measure of operating cash costs excludes: depreciation and depletion; exploration and evaluation; charges for asset write-down (including write-down of materials and supplies inventory) and includes management services payments to Rio Tinto and management services payments to Turquoise Hill which are eliminated in the consolidated financial statements of the Company.

**C1 cash costs**

C1 cash costs is a metric representing the cash cost per unit of extracting and processing the Company's principal metal product, copper, to a condition in which it may be delivered to customers net of gold and silver credits from concentrates sold. It is provided in order to support peer group comparability and to provide investors and other stakeholders with additional information about the underlying cash costs of Oyu Tolgoi and the impact of gold and silver credits on the operations' cost structure. C1 cash costs are relevant to understanding the Company's operating profitability and ability to generate cash flow. When calculating costs associated with producing a pound of copper, the Company deducts gold and silver revenue credits as the production cost is reduced as a result of selling these products.

**All-in sustaining costs**

All-in sustaining costs (AISC) is an extended cash-based cost metric providing further information on the aggregate cash, capital and overhead outlay per unit and is intended to reflect the costs of producing the Company's principal metal product, copper, in both the short term and over the life-cycle of its operations; as a result, sustaining capital expenditure on a cash basis is included rather than depreciation. As the measure seeks to present a full cost of copper production associated with sustaining current operations, development project capital is not included. AISC allows Turquoise Hill to assess the ability of Oyu Tolgoi to support sustaining capital expenditures for future production from the generation of operating cash flows.



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A reconciliation of total operating cash costs, C1 cash costs and all-in sustaining costs is provided below.

	Operating and unit costs			
	(Three Months Ended)		(Twelve Months Ended)	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
<b><i>C1 costs (Stated in \$000's of dollars)</i></b>				
Cost of sales	187,730	182,788	777,248	763,798
<b>Cost of sales: \$/lb of copper sold</b>	<b>2.12</b>	<b>2.32</b>	<b>2.25</b>	<b>2.32</b>
Depreciation and depletion	(44,625)	(73,491)	(209,496)	(304,144)
Provision against carrying value of copper-gold concentrate	255	(2,711)	255	8,718
Change in inventory	17,910	44,029	983	13,885
Other operating expenses	85,118	50,701	234,072	201,461
Less:				
- Inventory (write-down) reversal	(11,886)	11,812	(14,286)	6,834
- Depreciation	(216)	(804)	(1,705)	(3,460)
Management services payment to Turquoise Hill	8,035	5,348	30,055	24,554
<b>Operating cash costs</b>	<b>242,321</b>	<b>217,672</b>	<b>817,126</b>	<b>711,646</b>
<b>Operating cash costs: \$/lb of copper produced</b>	<b>2.65</b>	<b>2.18</b>	<b>2.33</b>	<b>2.05</b>
Adjustments to operating cash costs <sup>(1)</sup>	6,738	22,966	52,904	100,018
Less: Gold and silver revenues	(135,629)	(35,615)	(313,338)	(144,218)
<b>C1 costs (\$'000)</b>	<b>113,430</b>	<b>205,023</b>	<b>556,692</b>	<b>667,446</b>
<b>C1 costs: \$/lb of copper produced</b>	<b>1.24</b>	<b>2.05</b>	<b>1.59</b>	<b>1.92</b>
<b><i>All-in sustaining costs (Stated in \$000's of dollars)</i></b>				
Corporate administration	6,287	7,746	24,370	21,999
Asset retirement expense	1,741	1,669	6,797	6,583
Royalty expenses	20,104	15,654	70,782	57,082
Ore stockpile and stores write-down (reversal)	11,886	(11,812)	14,286	(6,834)
Other expenses	5,809	274	6,771	3,056
Sustaining cash capital including deferred stripping	24,554	21,108	90,796	81,450
<b>All-in sustaining costs (\$'000)</b>	<b>183,811</b>	<b>239,662</b>	<b>770,494</b>	<b>830,782</b>
<b>All-in sustaining costs: \$/lb of copper produced</b>	<b>2.01</b>	<b>2.40</b>	<b>2.20</b>	<b>2.39</b>

<sup>(1)</sup> Adjustments to operating cash costs include: treatment, refining and freight differential charges less the 5% Government of Mongolia royalty and other expenses not applicable to the definition of C1 cost.

**Mining costs and milling costs**

Mining costs and milling costs are included within operating cash costs. Mining costs per tonne of material mined for the three and twelve months ended December 31, 2018 are calculated by reference to total mining costs of \$52.1 million (2017: \$49.6 million) and \$194.1 million (2017: \$159.8 million) respectively and total material mined of 22.9 million tonnes (2017: 28.9 million tonnes) and 91.3 million tonnes (2017: 105.9 million tonnes) respectively.

Milling costs per tonne of ore treated for the three and twelve months ended December 31, 2018 are calculated by reference to total milling costs of \$64.1 million (2017: \$63.9 million) and \$275.2 million (2017: \$262.0 million) respectively and total ore treated of 9.4 million tonnes (2017: 10.8 million tonnes) and 38.7 million tonnes (2017: 41.2 million tonnes) respectively.

**Working capital**

Consolidated working capital comprises those components of current assets and liabilities which support and result from the Company's ongoing running of its current operations. It is provided in order to give a quantifiable indication of the Company's short-term cash generation ability and business efficiency. As a measure linked to current operations and the sustainability of the business, working capital excludes: non-trade receivables and payables; financing items; cash and cash equivalents; deferred revenue and non-current inventory.

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A reconciliation of consolidated working capital to the financial statements and notes is provided below.

<b>Working capital</b> (Stated in \$000's of dollars)	<b>December 31, 2018</b>	December 31, 2017
Inventories (current)	\$ 242,970	\$ 274,142
Trade and other receivables	30,264	29,089
Trade and other payables:		
- trade payables and accrued liabilities	(395,883)	(360,697)
- payable to related parties	(51,490)	(52,308)
<b>Consolidated working capital</b>	<b>\$ (174,139)</b>	<b>\$ (109,774)</b>

**Contractual obligations**

Section 9 of this MD&A discloses contractual obligations in relation to the Company's lease, purchase and asset retirement obligations. Amounts relating to these obligations are calculated on the basis of the Company carrying out its future business activities and operations as planned at the period end. As such, contractual obligations presented in this MD&A will differ from amounts presented in the financial statements, which are prepared on the basis of minimum uncancellable commitments to pay in the event of contract termination. The MD&A presentation of contractual obligations is provided in order to give an indication of future expenditure, for the disclosed categories, arising from the Company's continuing operations and development projects.

A reconciliation of contractual obligations at December 31, 2018 to the financial statements and notes is provided below.

(Stated in \$000's of dollars)	<b>Purchase obligations</b>	<b>Power commitments</b>	<b>Operating leases</b>	<b>Finance leases</b>	<b>Decommissioning obligations</b>
<b>Commitments (MD&amp;A)</b>	<b>\$ 1,229,434</b>	<b>\$ 506,953</b>	<b>\$ 25,861</b>	<b>\$ 12,057</b>	<b>\$ 273,745</b>
Cancellable obligations (net of exit costs)	(985,205)	(167,951)	-	-	-
Accrued capital expenditure	(198,272)	-	-	-	-
Discounting and other adjustments	-	-	-	-	(142,180)
<b>Financial statement amount</b>	<b>\$ 45,957</b>	<b>\$ 339,002</b>	<b>\$ 25,861</b>	<b>\$ 12,057</b>	<b>\$ 131,565</b>

**16. INTERNAL CONTROL OVER FINANCIAL REPORTING**

Disclosure controls and procedures are designed to provide reasonable assurance that information required to be disclosed by the Company under applicable securities legislation is gathered and reported to senior management, including the Company's CEO and CFO, on a timely basis so that appropriate decisions can be made regarding public disclosures.

As of the end of the Company's fiscal year ended December 31, 2018, an evaluation of the effectiveness of the Company's disclosure controls and procedures (as such term is defined in Rules 13a – 15(e) and 15d – 15(e) of the Securities Exchange Act of 1934, as amended (the Exchange Act) and under National Instrument 52-109 – Certification of Disclosure in Issuers' Annual and Interim Filings (NI 52-109)) was carried out by the Company's management with the participation of the CEO and CFO. Based upon that evaluation, the Company's CEO and CFO concluded that as of the end of the fiscal year, the Company's disclosure controls and procedures were effective to ensure that information required to be disclosed by the Company in reports that it files or submits under applicable U.S. and Canadian securities legislation is (i) recorded, processed, summarized and reported within the time periods specified in such legislation and (ii) accumulated and communicated to the Company's management, including its CEO and CFO, to allow timely decisions regarding required disclosure.



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The Company's management, including the CEO and CFO, believe that any disclosure controls and procedures or internal control over financial reporting, no matter how well conceived and operated, can provide only a reasonable and not absolute assurance that the objectives of the control system are met. Further, the design of a control system reflects the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, they cannot provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been prevented or detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by unauthorized override of the control. The design of any systems of controls is also based in part on certain assumptions about the likelihood of certain events, and there can be no assurance that any design can achieve its stated goals under all potential future conditions. Accordingly, because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

**17. MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING**

Management is responsible for establishing and maintaining adequate internal controls over financial reporting of the Company (as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act and in NI 52-109). Internal controls over financial reporting are designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with IFRS and the requirements of applicable U.S. and Canadian securities legislation.

The Company's CEO and CFO have assessed the effectiveness of the Company's internal controls over financial reporting as at December 31, 2018 in accordance with Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in 2013. Based on this assessment, the Company's CEO and CFO have determined that the Company's internal controls over financial reporting were effective as of December 31, 2018 and have certified the Company's annual filings with the U.S. Securities and Exchange Commission on Form 40-F as required by the U.S. Sarbanes-Oxley Act and with Canadian securities regulatory authorities.

Management reviewed the results of management's assessment with the Audit Committee of the Company's Board of Directors. PricewaterhouseCoopers LLP, independent auditor, has been engaged to audit and provide independent opinions on the Company's consolidated financial statements and the effectiveness of the Company's internal control over financial reporting as of December 31, 2018. PricewaterhouseCoopers LLP has expressed an unqualified opinion on the Company's consolidated financial statements and on the Company's internal control over financial reporting as of December 31, 2018.

**Changes in internal control over financial reporting**

There were no changes in the Company's internal control over financial reporting (as such term is defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the year ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

**18. OVERSIGHT OF THE AUDIT COMMITTEE**

The Audit Committee reviews, with management and the external auditors, the Company's MD&A and related consolidated financial statements and approves the release of such information to shareholders. For each audit or quarterly review, the external auditors prepare a report for members of the Audit Committee summarizing key areas, significant issues and material internal control weaknesses encountered, if any.

**Turquoise Hill Resources Ltd.**

Management's Discussion and Analysis of Financial Condition and Results of Operations  
(Stated in U.S. dollars, except where noted)

**19. QUALIFIED PERSON**

Disclosure of information of a scientific or technical nature in this MD&A in respect of the Oyu Tolgoi mine was approved by Bernard Peters, Technical Director – Mining, OreWin Pty Ltd., B. Eng. (Mining), FAusIMM (201743), and Sharron Sylvester, Technical Director – Geology, OreWin Pty Ltd., BSc (Geol.), RPGeo AIG (10125) based on information currently available. Each of these individuals is a "qualified person" as that term is defined in NI 43-101. The reader is referred to the 2016 Oyu Tolgoi Technical Report. Turquoise Hill has commenced an independent review of the advice received from Rio Tinto regarding the underground delay.

**20. CAUTIONARY STATEMENTS****Language regarding reserves and resources**

Readers are advised that NI 43-101 requires that each category of mineral reserves and mineral resources be reported separately. For detailed information related to Company Mineral Resources and Mineral Reserves, readers should refer to the AIF of the Company for the year ended December 31, 2017, and other continuous disclosure documents filed by the Company since January 1, 2018 under Turquoise Hill's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

**Note to United States investors concerning estimates of measured, indicated and inferred resources**

This document has been prepared in accordance with the requirements of Canadian securities laws, which differ from the requirements of United States (U.S.) securities laws. Unless otherwise indicated, all reserve and resource estimates included in this document have been prepared in accordance with NI 43-101, and the Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards for mineral resources and mineral reserves. NI 43-101 is a rule developed by the Canadian Securities Authorities that establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects.

Canadian standards, including NI 43-101, differ significantly from the requirements of the SEC, and reserve and resource information contained in this document may not be comparable to similar information disclosed by U.S. companies. In particular, and without limiting the generality of the foregoing, the term "resource" does not equate to the term "reserve". Under U.S. standards, mineralization may not be classified as a "reserve" unless the determination has been made that the mineralization could be economically and legally produced or extracted at the time the reserve determination is made. Among other things, all necessary permits would be required to be in hand or issuance imminent in order to classify mineralized material as reserves under the SEC standards. The SEC's disclosure standards normally do not permit the inclusion of information concerning "Measured mineral resources", "Indicated mineral resources" or "Inferred mineral resources" or other descriptions of the amount of mineralization in mineral deposits that do not constitute "reserves" by U.S. standards in documents filed with the SEC. U.S. investors should also understand that "Inferred mineral resources" have an even greater amount of uncertainty as to their existence and an even greater uncertainty as to their economic and legal feasibility. It cannot be assumed that all or any part of an "Inferred mineral resource" will ever be upgraded to a higher category. Under NI 43-101, estimated "Inferred mineral resources" generally may not form the basis of feasibility or pre-feasibility studies except in rare cases. Investors are cautioned not to assume that all or any part of an "Inferred mineral resource" exists or is economically or legally mineable. Disclosure of "contained pounds" or "contained ounces" of metal in a resource is permitted disclosure under Canadian regulations; however, the SEC normally only permits issuers to report mineralization that does not constitute "reserves" by SEC standards as in-place tonnage and grade without reference to unit measures. The requirements of NI 43-101 for identification of "reserves" are also not the same as those of the SEC, and reserves reported by the Company in compliance with NI 43-101 may not qualify as "reserves" under SEC standards. Accordingly, information concerning mineral deposits set forth herein may not be comparable with information made public by companies that report in accordance with U.S. standards.



**21. FORWARD-LOOKING STATEMENTS AND FORWARD-LOOKING INFORMATION**

Certain statements made herein, including statements relating to matters that are not historical facts and statements of the Company's beliefs, intentions and expectations about developments, results and events which will or may occur in the future, constitute "forward-looking information" within the meaning of applicable Canadian securities legislation and "forward-looking statements" within the meaning of the "safe harbor" provisions of the United States *Private Securities Litigation Reform Act of 1995*. Forward-looking statements and information relate to future events or future performance, reflect current expectations or beliefs regarding future events and are typically identified by words such as "anticipate", "could", "should", "expect", "seek", "may", "intend", "likely", "plan", "estimate", "will", "believe" and similar expressions suggesting future outcomes or statements regarding an outlook. These include, but are not limited to, information regarding the timing and amount of production and potential production delays, statements in respect of the impacts of any delays on the Company's cash flows, liquidity, funding requirements and planning, statements regarding timing and status of underground development, timing and status of the Tavan Tolgoi-based power project, capital and operating cost estimates, mill throughput anticipated business activities, planned expenditures, corporate strategies, and other statements that are not historical facts.

Forward-looking statements and information are made based upon certain assumptions and other important factors that, if untrue, could cause the actual results, performance or achievements of the Company to be materially different from future results, performance or achievements expressed or implied by such statements or information. There can be no assurance that such statements or information will prove to be accurate. Such statements and information are based on numerous assumptions regarding present and future business strategies, local and global economic conditions, and the environment in which the Company will operate in the future, including the price of copper, gold and silver and projected gold, copper and silver grades, anticipated capital and operating costs, anticipated future production and cash flows, and the status of the Company's relationship and interaction with the Government of Mongolia on the continued operation and development of Oyu Tolgoi and Oyu Tolgoi LLC internal governance. Certain important factors that could cause actual results, performance or achievements to differ materially from those in the forward-looking statements and information include, among others, copper; gold and silver price volatility; discrepancies between actual and estimated production, mineral reserves and resources and metallurgical recoveries; development plans for processing resources; matters relating to proposed exploration or expansion; mining operational and development risks, including geotechnical risks and ground conditions; litigation risks; regulatory restrictions (including environmental regulatory restrictions and liability); Oyu Tolgoi LLC's ability to deliver a domestic power source for the Oyu Tolgoi project within the required contractual time frame; communications with local stakeholders and community relations; activities, actions or assessments, including tax assessments, by governmental authorities; events or circumstances (including strikes, blockages or similar events outside of the Company's control) that may affect the Company's ability to deliver its products in a timely manner; currency fluctuations; the speculative nature of mineral exploration; the global economic climate; dilution; share price volatility; competition; loss of key employees; cyber security incidents; additional funding requirements, including in respect of the development or construction of a long-term domestic power supply for the Oyu Tolgoi project; capital and operating costs, including with respect to the development of additional deposits and processing facilities; and defective title to mineral claims or property. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements and information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. All such forward-looking statements and information are based on certain assumptions and analyses made by the Company's management in light of their experience and perception of historical trends, current conditions and expected future developments, as well as other factors management believes are appropriate in the circumstances. These statements, however, are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected in the forward-looking statements or information.

With respect to specific forward-looking information concerning the continued operation and development of Oyu Tolgoi, the Company has based its assumptions and analyses on certain factors which are inherently uncertain. Uncertainties and assumptions include, among others: the timing and cost of the construction and expansion of mining and processing facilities; the timing and availability of a long-term domestic power source (or the availability of financing for the Company to construct such a source) for Oyu Tolgoi; the ability to secure and draw down on the supplemental debt under the Oyu Tolgoi project financing facility and the availability of additional financing on terms reasonably acceptable to Oyu Tolgoi LLC, Rio Tinto and the Company to further develop Oyu Tolgoi; the impact of changes in, changes in interpretation to or changes in enforcement of, laws, regulations and government practices in Mongolia; the availability and cost of skilled labour and transportation; the obtaining of (and the terms and timing of obtaining) necessary environmental and other government approvals, consents and permits; delays, and the costs which would result from delays, in the development of the underground mine (which could significantly exceed the costs projected in the 2016 Oyu Tolgoi Feasibility Study and the 2016 Oyu Tolgoi Technical Report); projected copper, gold and silver prices and their market demand; and production estimates and the anticipated yearly production of copper, gold and silver at Oyu Tolgoi.

The cost, timing and complexities of mine construction and development are increased by the remote location of a property such as Oyu Tolgoi. It is common in mining operations and in the development or expansion of existing facilities to experience unexpected problems and delays during development, construction and mine start-up. Additionally, although Oyu Tolgoi has achieved commercial production, there is no assurance that future development activities will result in profitable mining operations.

This MD&A also contains references to estimates of mineral reserves and mineral resources. The estimation of reserves and resources is inherently uncertain and involves subjective judgments about many relevant factors. The mineral resource estimates contained in this MD&A are inclusive of mineral reserves. Further, mineral resources that are not mineral reserves do not have demonstrated economic viability. The accuracy of any such estimates is a function of the quantity and quality of available data, and of the assumptions made and judgments used in engineering and geological interpretation (including future production from Oyu Tolgoi, the anticipated tonnages and grades that will be achieved or the indicated level of recovery that will be realized), which may prove to be unreliable. There can be no assurance that these estimates will be accurate or that such mineral reserves and mineral resources can be mined or processed profitably. See the discussion under the headings "Language Regarding Reserves and Resources" and "Note to United States Investors Concerning Estimates of Measured, Indicated and Inferred Resources" in Section 20 – CAUTIONARY STATEMENTS – of this MD&A. Such estimates are, in large part, based on the following:

- Interpretations of geological data obtained from drill holes and other sampling techniques. Large scale mineral continuity and character of the deposits can be improved with additional drilling and sampling; actual mineralization or formations may be different from those predicted. It may also take many years from the initial phase of drilling before production is possible, and during that time the economic feasibility of exploiting a deposit may change. Reserve and resource estimates are materially dependent on prevailing metal prices and the cost of recovering and processing minerals at the individual mine sites. Market fluctuations in the price of metals or increases in the costs to recover metals or the actual recovery percentage of the metal(s) from the Company's mining projects may render mining of ore reserves uneconomic and affect the Company's operations in a materially adverse manner. Moreover, various short-term operating factors may cause a mining operation to be unprofitable in any particular accounting period;
- Assumptions relating to commodity prices and exchange rates during the expected life of production, mineralization of the area to be mined, the projected cost of mining, and the results of additional planned development work. Actual future production rates and amounts, revenues, taxes, operating expenses, environmental and regulatory compliance expenditures, development expenditures, and recovery rates may vary substantially from those assumed in the estimates. Any significant change in these assumptions, including changes that result from variances between projected and actual results, could result in material downward revision to current estimates;



- Assumptions relating to projected future metal prices. The Company uses prices reflecting market pricing projections in the financial modeling for Oyu Tolgoi which are subjective in nature. It should be expected that actual prices will be different than the prices used for such modeling (either higher or lower), and the differences could be significant; and
- Assumptions relating to the costs and availability of treatment and refining services for the metals mined from Oyu Tolgoi, which require arrangements with third parties and involve the potential for fluctuating costs to transport the metals and fluctuating costs and availability of refining services. These costs can be significantly impacted by a variety of industry-specific as well as regional and global economic factors (including, among others, those which affect commodity prices). Many of these factors are beyond the Company's control.

Readers are cautioned not to place undue reliance on forward-looking information or statements. By their nature, forward-looking statements involve numerous assumptions, inherent risks and uncertainties, both general and specific, which contribute to the possibility that the predicted outcomes will not occur. Events or circumstances could cause the Company's actual results to differ materially from those estimated or projected and expressed in, or implied by, these forward-looking statements. Important factors that could cause actual results to differ from these forward-looking statements are included in the "Risks and Uncertainties" section in this MD&A.

Readers are further cautioned that the list of factors enumerated in the "Risks and Uncertainties" section of this MD&A that may affect future results is not exhaustive. When relying on the Company's forward-looking statements and information to make decisions with respect to the Company, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. Furthermore, the forward-looking statements and information contained in this MD&A are made as of the date of this document and the Company does not undertake any obligation to update or to revise any of the included forward-looking statements or information, whether as a result of new information, future events or otherwise, except as required by applicable law. The forward-looking statements and information contained in this MD&A are expressly qualified by this cautionary statement.

**22. MANAGEMENT'S REPORT TO SHAREHOLDERS**

The consolidated financial statements and management's discussion and analysis of financial condition and results of operations (MD&A) are the responsibility of the management of Turquoise Hill Resources Ltd. The financial statements and the MD&A have been prepared by management in accordance with IFRS and regulatory requirements, respectively, using management's best estimates and judgment of all information available up to March 14, 2019.

The Board of Directors has approved the information contained in the consolidated financial statements and the MD&A. The Board of Directors is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal controls. The Audit Committee of the Board of Directors, consisting solely of outside directors, meets regularly during the year with financial officers of the Company and the external auditors to satisfy itself that management is properly discharging its financial reporting responsibilities to the Directors who approve the consolidated financial statements.

The financial statements have, in management's opinion, been properly prepared within reasonable limits of materiality and within the framework of the accounting policies summarized in Note 2 to the consolidated financial statements.

The consolidated financial statements have been audited by PricewaterhouseCoopers LLP, independent auditor, in accordance with the standards of the Public Company Accounting Oversight Board (United States). They have full and unrestricted access to the Audit Committee.

/s/ Ulf Quellmann	/s/ Luke Colton
Ulf Quellmann Chief Executive Officer	Luke Colton Chief Financial Officer

March 14, 2019  
Vancouver, BC, Canada





**Turquoise Hill Resources Ltd.**

**Consolidated Financial Statements**

**December 31, 2018 and 2017**

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Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of Turquoise Hill Resources Ltd.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Turquoise Hill Resources Ltd. and its subsidiaries (together, the Company) as of December 31, 2018 and 2017, and the related consolidated statements of income, comprehensive income, cash flows, and equity for the years then ended, including the related notes (collectively referred to as the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and their financial performance and their cash flows for the years then ended in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board (IFRS). Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control – Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting in Section 17 of Management’s Discussion and Analysis of Financial Condition and Results of Operations. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and limitations of internal control over financial reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail,

accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

(Signed) “PricewaterhouseCoopers LLP”

Chartered Professional Accountants

Vancouver, Canada  
March 14, 2019

We have served as the Company's auditor since 2012.



**TURQUOISE HILL RESOURCES LTD.**  
**Consolidated Statements of Income**  
**(Stated in thousands of U.S. dollars)**

	Note	Year Ended December 31,	
		2018	2017
Revenue	4	\$ 1,180,022	\$ 939,780
Cost of sales	5	(777,248)	(763,798)
Gross margin		402,774	175,982
Operating expenses	6	(234,072)	(201,461)
Corporate administration expenses		(24,370)	(21,999)
Other income		7,119	1,465
Income (loss) before finance items and taxes		151,451	(46,013)
Finance items			
Finance income	7	154,668	156,278
Finance costs	7	(52,489)	(153,350)
		102,179	2,928
Income (loss) from operations before taxes		\$ 253,630	\$ (43,085)
Income and other taxes	16	140,644	154,013
Income for the year		\$ 394,274	\$ 110,928
Attributable to owners of Turquoise Hill Resources Ltd.		411,198	181,247
Attributable to owner of non-controlling interest		(16,924)	(70,319)
Income for the year		\$ 394,274	\$ 110,928

Basic and diluted earnings per share attributable to Turquoise Hill Resources Ltd.	21	\$ 0.20	\$ 0.09
Basic weighted average number of shares outstanding (000's)		2,012,314	2,012,314

The accompanying notes are an integral part of these consolidated financial statements.

**TURQUOISE HILL RESOURCES LTD.**  
**Consolidated Statements of Comprehensive Income**  
**(Stated in thousands of U.S. dollars)**

	Year Ended December 31,	
	2018	2017
Income for the year	\$ 394,274	\$ 110,928
Other comprehensive income (loss):		
Items that will not be reclassified to income:		
Changes in the fair value of marketable securities at FVOCI	(2,875)	4,160
Items that have been reclassified to income:		
Gain on revaluation of marketable securities transferred to the statement of income	-	(39)
Other comprehensive income (loss) for the year (a)	\$ (2,875)	\$ 4,121
Total comprehensive income for the year	\$ 391,399	\$ 115,049
Attributable to owners of Turquoise Hill	408,323	185,368
Attributable to owner of non-controlling interest	(16,924)	(70,319)
Total comprehensive income for the year	\$ 391,399	\$ 115,049

(a) No tax charges and credits arose on items recognized as other comprehensive income or loss in 2018 (2017: nil).

The accompanying notes are an integral part of these consolidated financial statements.



**TURQUOISE HILL RESOURCES LTD.**  
**Consolidated Statements of Cash Flows**  
**(Stated in thousands of U.S. dollars)**

	Note	Year Ended December 31, 2018	2017
<b>Cash generated from operating activities before interest and tax</b>	20	<b>\$ 363,006</b>	<b>\$ 325,795</b>
Interest received		<b>88,267</b>	59,768
Interest paid		<b>(261,431)</b>	(258,995)
Income and other taxes paid		<b>(9,874)</b>	(8,568)
<b>Net cash generated from operating activities</b>		<b>\$ 179,968</b>	<b>\$ 118,000</b>
<b>Cash flows from investing activities</b>			
Receivable from related party: amounts withdrawn	22	<b>1,270,000</b>	820,000
Expenditures on property, plant and equipment		<b>(1,304,347)</b>	(917,541)
Proceeds from sale and redemption of financial assets		-	1,069
Other investing cash flows		<b>616</b>	206
<b>Cash used in investing activities</b>		<b>\$ (33,731)</b>	<b>\$ (96,266)</b>
<b>Cash flows from financing activities</b>			
Net proceeds from project finance facility	15	<b>13,261</b>	7,780
Payment of project finance fees		<b>(363)</b>	(2,704)
<b>Cash generated from financing activities</b>		<b>\$ 12,898</b>	<b>\$ 5,076</b>
Effects of exchange rates on cash and cash equivalents		<b>(851)</b>	219
<b>Net increase in cash and cash equivalents</b>		<b>\$ 158,284</b>	<b>\$ 27,029</b>
Cash and cash equivalents - beginning of year		<b>\$ 1,444,783</b>	<b>\$ 1,417,754</b>
Cash and cash equivalents - end of year		<b>1,603,067</b>	1,444,783
<b>Cash and cash equivalents as presented on the balance sheets</b>		<b>\$ 1,603,067</b>	<b>\$ 1,444,783</b>

The accompanying notes are an integral part of these consolidated financial statements.

**TURQUOISE HILL RESOURCES LTD.**  
**Consolidated Balance Sheets**  
**(Stated in thousands of U.S. dollars)**

	Note	December 31, 2018	December 31, 2017
<b>Current assets</b>			
Cash and cash equivalents	8	<b>\$ 1,603,067</b>	<b>\$ 1,444,783</b>
Inventories	9	<b>242,970</b>	274,142
Trade and other receivables	10	<b>30,264</b>	29,089
Prepaid expenses and other assets	11	<b>30,213</b>	49,552
Receivable from related party	12	<b>1,620,073</b>	1,367,586
		<b>3,526,587</b>	3,165,152
<b>Non-current assets</b>			
Property, plant and equipment	13	<b>8,838,305</b>	7,346,972
Inventories	9	<b>18,655</b>	43,379
Deferred income tax assets	16	<b>649,421</b>	473,742
Receivable from related party and other financial assets	12	<b>279,019</b>	1,804,074
		<b>9,785,400</b>	9,668,167
<b>Total assets</b>		<b>\$13,311,987</b>	<b>\$ 12,833,319</b>
<b>Current liabilities</b>			
Trade and other payables	14	<b>\$ 459,244</b>	<b>\$ 435,869</b>
Deferred revenue		<b>75,162</b>	67,598
		<b>534,406</b>	503,467
<b>Non-current liabilities</b>			
Borrowings and other financial liabilities	15	<b>4,187,297</b>	4,159,119
Deferred income tax liabilities	16	<b>47,934</b>	25,788
Decommissioning obligations	17	<b>131,565</b>	125,721
		<b>4,366,796</b>	4,310,628
<b>Total liabilities</b>		<b>\$ 4,901,202</b>	<b>\$ 4,814,095</b>
<b>Equity</b>			
Share capital	18	<b>\$11,432,122</b>	<b>\$ 11,432,122</b>
Contributed surplus		<b>1,558,264</b>	1,558,102
Accumulated other comprehensive income		<b>844</b>	3,719
Deficit		<b>(3,670,310)</b>	(4,081,508)
<b>Equity attributable to owners of Turquoise Hill</b>		<b>9,320,920</b>	8,912,435
Attributable to non-controlling interest	19	<b>(910,135)</b>	(893,211)
<b>Total equity</b>		<b>\$ 8,410,785</b>	<b>\$ 8,019,224</b>
<b>Total liabilities and equity</b>		<b>\$13,311,987</b>	<b>\$ 12,833,319</b>

Commitments and contingencies (Note 23)

The accompanying notes are an integral part of these consolidated financial statements.

The financial statements were approved by the directors on March 13, 2019 and signed on their behalf by:

/s/ P. Gillin	/s/ R. Robertson
P. Gillin, Director	R. Robertson, Director



**TURQUOISE HILL RESOURCES LTD.**  
**Consolidated Statements of Equity**  
(Stated in thousands of U.S. dollars)

Year Ended December 31, 2018	Attributable to owners of Turquoise Hill				
	Accumulated			Non-controlling	
	Share capital	Contributed surplus	comprehensive income (loss)	Interest (Note 19)	Total equity
<b>Opening balance</b>	<b>\$11,432,122</b>	<b>\$ 1,558,102</b>	<b>\$ 3,719</b>	<b>\$ (4,081,508)</b>	<b>\$ 8,912,435</b>
Income for the year	-	-	-	411,198	411,198
Other comprehensive loss for the year	-	-	(2,875)	-	(2,875)
Employee share plans	-	162	-	-	162
<b>Closing balance</b>	<b>\$11,432,122</b>	<b>\$ 1,558,264</b>	<b>\$ 844</b>	<b>\$ (3,670,310)</b>	<b>\$ 9,320,920</b>

Year Ended December 31, 2017	Attributable to owners of Turquoise Hill				
	Accumulated			Non-controlling	
	Share capital	Contributed surplus	comprehensive income (loss)	Interest (Note 19)	Total equity
<b>Opening balance</b>	<b>\$11,432,122</b>	<b>\$ 1,557,913</b>	<b>\$ (402)</b>	<b>\$ (4,262,755)</b>	<b>\$ 8,726,878</b>
Income for the year	-	-	-	181,247	181,247
Other comprehensive income for the year	-	-	4,121	-	4,121
Employee share plans	-	189	-	-	189
<b>Closing balance</b>	<b>\$11,432,122</b>	<b>\$ 1,558,102</b>	<b>\$ 3,719</b>	<b>\$ (4,081,508)</b>	<b>\$ 8,912,435</b>

The accompanying notes are an integral part of these consolidated financial statements.

**TURQUOISE HILL RESOURCES LTD.**

**Notes to the consolidated financial statements**

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

**1. Nature of operations**

The consolidated financial statements of Turquoise Hill Resources Ltd. (“Turquoise Hill”) were authorized for issue in accordance with a directors’ resolution on March 13, 2019. Rio Tinto plc is the ultimate parent company and indirectly owned a 50.8% majority interest in Turquoise Hill as at December 31, 2018.

Turquoise Hill, together with its subsidiaries (collectively referred to as “the Company”), is an international mining company focused principally on the operation and further development of the Oyu Tolgoi copper-gold mine in Southern Mongolia. Turquoise Hill’s head office is located at 354-200 Granville Street, Vancouver, British Columbia, Canada, V6C 1S4. Turquoise Hill’s registered office is located at 300-204 Black Street, Whitehorse, Yukon, Canada, Y1A 2M9.

Turquoise Hill has its primary listing in Canada on the Toronto Stock Exchange and secondary listings in the U.S. on the New York Stock Exchange and the NASDAQ.

**2. Summary of significant accounting policies**

*(a) Statement of compliance*

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”).

These consolidated financial statements have been prepared on a going concern basis, and in making the assessment that the Company is a going concern, management have taken into account all available future information, which extends for a period of at least twelve months from December 31, 2018.

*(b) Change in accounting policies*

*(i) Revenue from contracts with customers*

IFRS 15, *Revenue from Contracts with Customers*, was effective and has been applied by the Company using the modified retrospective approach to implementation in accordance with IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors* and the new standard has therefore been applied only to contracts that remain in force on the date of initial application, which is January 1, 2018. Refer to Note 2(f) for the complete accounting policy.

The standard contains a single model that applies to contracts with customers. Revenue is recognized as control is passed to the customer, either at a point in time or over time.

The Company concluded that, in its specific circumstances, there were no measurement differences between IAS 18, *Revenue*, and IFRS 15, *Revenue from Contracts with Customers*. As such, no adjustment has been recorded to Deficit at January 1, 2018. However, additional disclosures were required under IFRS 15 related to movements in the fair value of trade receivables, which are disclosed separately within the revenue note (Note 4).







(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

(i) *Critical accounting estimates (continued)*

Inventory, including stockpiles of ore, are valued at the lower of weighted average cost and net realizable value (“NRV”). If ore stockpiles are not expected to be processed within the 12 months after the balance sheet date, they are included within non-current assets and net realizable value is calculated on a discounted cash flow basis over the planned processing timeframe for such ore. Evaluating NRV requires management judgment in the selection of estimates for, among other inputs, discount rate, price assumptions, timing of processing and costs to complete.

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

For long-lived assets that are depleted or depreciated over proven and probable reserves using the units of production method, a change in the original estimate of proven and probable reserves would result in a change in the rate of depletion or depreciation.



2. Summary of significant accounting policies (continued)

(c) Critical accounting estimates and judgments (continued)

(ii) Critical accounting judgments (continued)

Income taxes – utilization of tax losses carried forward

The determination of the ability of the Company to utilize tax losses carried forward to offset income taxes payable in the future and to utilize temporary differences which will reverse in the future requires management to exercise judgment and make assumptions about the Company’s future performance. Management is required to assess whether it is probable the Company is able to benefit from these tax losses and temporary differences.

(d) Basis of consolidation

The financial statements consist of the consolidation of the accounts of Turquoise Hill and its respective subsidiaries. All intercompany transactions and balances between Turquoise Hill and its subsidiaries have been eliminated on consolidation. Where necessary, adjustments are made to assets, liabilities, and results of subsidiaries to bring their accounting policies into line with those used by the Company.

Subsidiaries are entities controlled by Turquoise Hill. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. The Company controls an entity if it has power to direct the activities of the entity in a manner that significantly affects its returns, has exposure or rights to variable returns from its involvement with the entity and has the ability to use its power to affect those returns.

The Company consolidates all subsidiaries. The Company’s principal operating subsidiary is Oyu Tolgoi LLC (“Oyu Tolgoi”). Wholly-owned subsidiaries of Turquoise Hill together hold a 66.0% interest in Oyu Tolgoi, whose principal asset is the Oyu Tolgoi copper-gold mine located in Southern Mongolia. The remaining 34% non-controlling interest in Oyu Tolgoi is owned by Erdenes Oyu Tolgoi LLC (“Erdenes”), a company controlled by the Mongolian government. The Company has historically funded 100% of the Oyu Tolgoi copper-gold mine’s exploration and development costs via equity and debt investments in Oyu Tolgoi and non-recourse loans to Erdenes. Income or loss of Oyu Tolgoi is attributed to the controlling and non-controlling shareholders based on ownership percentage. Non-recourse loans advanced to Erdenes upon the issuance of additional equity interests to Erdenes are accounted for separately and recorded as an offset to non-controlling interest in equity. Unrealized interest on the non-recourse loans to Erdenes, which are recoverable principally through dividends from Oyu Tolgoi or sale by Erdenes of its interests in Oyu Tolgoi, is recognized when payment of the interest can be reliably determined.

2. Summary of significant accounting policies (continued)

(e) Currency translation and foreign exchange

The Company has determined the U.S. dollar to be the functional currency of Turquoise Hill and its significant subsidiaries as it is the currency of the primary economic environment in which Turquoise Hill and all of its significant subsidiaries operate. Accordingly, monetary assets and liabilities denominated in foreign currencies are translated into U.S. dollars at the exchange rate in effect at the date of the balance sheet and non-monetary assets and liabilities are translated at the time of acquisition or issue. Revenues and expenses are translated at rates approximating the exchange rates in effect at the date of the transaction. All exchange gains and losses are included in the consolidated statement of income during the year.

(f) Revenue

Policy applicable from January 1, 2018:

The Company generates revenue from the sale of concentrate containing copper, gold and silver. Sales revenue is recognized on individual sales to depict the transfer of promised goods to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods. The Company considers five steps in assessing whether all of the criteria are met:

- identify the contract with a customer;
- identify the performance obligations in the contract;
- determine the transaction price;
- allocate the transaction price to performance obligations; and
- recognize revenue when or as a performance obligation is satisfied.

The Company satisfies its performance obligation and sales revenue is recognized at the point in time when the product is delivered as specified by the customer, which is typically upon loading of the product to the customer’s truck, train or vessel. The Company considers that control has passed when there is a present obligation to pay from the customer’s perspective; physical possession, legal title and the risks and rewards of ownership have all passed to the customer; and the customer has accepted the concentrate. The Company recognizes deferred revenue in the event it receives payment from a customer before a sales transaction meets all the criteria for revenue recognition.

In order to determine the transaction price, revenue from contracts with customers is measured by reference to the forward price for the commodities for the expected quotation period and the Company’s best estimate of contained metal at the date revenue is recognized. Concentrate is provisionally priced whereby the selling price is subject to final adjustment at the end of a period normally ranging from 30 to 180 days after delivery to the customer as defined in the sales contract. The final price is based on the market price at the relevant quotation point stipulated in the contract.

At each reporting date, the receivable is marked to fair value based on the forward selling price for the quotation period stipulated in the contract. The change in fair value of the receivable subsequent to the date of revenue recognition is recognized within ‘Revenue’ on the face of the statements of income and is shown separately as ‘other revenue’ in the notes to the consolidated financial statements.



(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

## (f) Revenue (continued)

*Policy applicable before January 1, 2018:*

- the Company has transferred to the buyer the significant risks and rewards of ownership of the product;
- the Company retains neither continuing managerial involvement to the degree usually associated with ownership, nor effective control over the goods sold;
- the amount of revenue can be measured reliably;
- it is probable that the economic benefits associated with the sale will flow to the Company; and
- the costs incurred or to be incurred in respect of the sale can be measured reliably.

Sales revenue is subject to adjustment based on the final determination of contained metal. In such cases, sales revenue is initially recognized on a provisional basis using the Company's best estimate of contained metal and subsequently adjusted.

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### (g) Exploration and evaluation

Exploration and evaluation costs are charged to operations in the period incurred until such time as it has been determined that a mineral property has proven and probable reserves and the property is economically viable, in which case subsequent evaluation costs incurred to develop a mineral property are capitalized. Exploration and evaluation costs include value-added taxes incurred in foreign jurisdictions when recoverability of those taxes is uncertain.

(h) *Property, plant and equipment*

Property, plant and equipment are recorded at cost, less accumulated depletion and depreciation and accumulated impairment losses. The cost of property, plant and equipment includes the estimated close down and restoration costs associated with the asset.

Once an undeveloped mining project has been established as commercially viable, including that it has established proven and probable reserves and approval to mine by governmental authorities has been given, expenditure other than that on land, buildings, plant and equipment is capitalized under “Mineral property interests.” Ore reserves may be declared for an undeveloped mining project before its commercial viability has been fully determined and approval to mine has been given. Evaluation costs may be capitalized during the period between declaration of reserves and approval to mine as further work is undertaken in order to refine the development case to maximize the project’s return.

Project development expenditures, including costs to acquire and construct buildings and equipment are capitalized under “Capital works in progress” provided that the project has been established as commercially viable. Capital works in progress are not categorized as mineral property interests, mining plant and equipment or other capital assets until the capital asset is in the condition and location necessary for its intended use.

Costs, which are incurred during the commissioning phase, that are necessary for the successful commissioning of new assets, are capitalized. Development costs incurred after the commencement of production are capitalized to the extent they are expected to give rise to a future economic benefit.

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**2. Summary of significant accounting policies (continued)**

*(i) Deferred stripping*

In open pit mining operations, it is necessary to remove overburden and other waste materials to access ore from which minerals can be extracted economically. The process of mining overburden and waste materials is referred to as stripping.

During the development of an open pit mine, before production commences, stripping costs are capitalized as part of mineral property interests and are subsequently amortized over the life of the mine on a units of production basis.

During the production phase, stripping activity is undertaken for the dual purpose of extracting inventory for current production as well as improving access to the ore body.

Stripping costs incurred for the purpose of extracting current inventories are included in the costs of inventory produced during the period the stripping costs are incurred.

In order for production phase stripping costs to qualify for capitalization as a stripping activity asset, three criteria must be met:

- it must be probable that economic benefit will be realized in a future accounting period as a result of improved access to the ore body created by the stripping activity;
- it must be possible to identify the “component” of the ore body for which access has been improved; and
- it must be possible to reliably measure the costs that relate to the stripping activity.

When the cost of stripping related to development which has a future benefit is not distinguishable from the cost of producing current inventories, the stripping costs are allocated to each activity based on a relevant production measure. Generally, the measure would be calculated based on a ratio obtained by dividing the tonnage of waste mined for the component for the period by the quantity of ore mined for the component. Stripping costs incurred in the period related to the component are deferred to the extent that the current period ratio exceeds the historical life of component ratio.

The stripping activity asset is depreciated on a units of production basis based on expected production of ore over the useful life of the component that has been made more accessible as a result of the stripping activity. The life of component ratios are based on proven and probable reserves based on the mine plan; they are a function of the mine design and therefore changes to that design will generally result in changes to the ratios. Changes in other technical or economic parameters that impact reserves may also impact the life of component ratios. Changes to the life of component ratios are accounted for prospectively.

Deferred stripping costs are included in “Mineral property interests” within property, plant and equipment. Amortization of deferred stripping costs is included as a cost of production in the period.

**2. Summary of significant accounting policies (continued)**

*(j) Depreciation and depletion*

Property, plant and equipment is depreciated over its useful life, or over the remaining life of the mine if that is shorter.

The useful lives of the major assets of a cash-generating unit are often dependent on the life of the ore body to which they relate. Where this is the case, the lives of mining properties, and their associated concentrators and other long lived processing equipment generally relate to the expected life of the ore body. The life of the ore body, in turn, is estimated on the basis of the life-of-mine plan. In applying the units of production method, depreciation is calculated using the copper content of the ore extracted from the mine in the period as a percentage of the total metal content of the ore to be extracted in current and future periods based on proven and probable reserves.

Development costs that relate to a discrete section of an ore body, and which only provide benefit over the life of those reserves, are depreciated over the estimated life of that discrete section. Development costs incurred that relate to the entire ore body are depreciated over the estimated life of the entire ore body.

Assets within operations for which production is not expected to fluctuate significantly from one year to another or which have a physical life shorter than the mine are depreciated on a straight-line basis. Depreciation commences when an asset is available for use.

*(k) Impairment of non-current assets*

Property, plant and equipment is reviewed for impairment when events or changes in circumstances indicate that the full carrying amount may not be recoverable.

Impairment is assessed at the level of cash-generating units which are identified as the smallest identifiable group of assets capable of generating cash inflows which are largely independent of the cash inflows from other assets. When an impairment review is undertaken, the recoverable amount is assessed by reference to the higher of value in use and FVLCD.

The value in use is the net present value of expected future pre-tax cash flows from the relevant cash-generating unit in its current condition, both from continuing use and ultimate disposal. For value in use, recent cost levels are considered, together with expected changes in costs that are compatible with the current condition of the business and which meet the requirements of IFRS.

The best evidence of FVLCD is often the value obtained from an active market or binding sale agreement. Where this is not the case, or where neither an active market nor a binding sale agreement exists, FVLCD is based on the best information available to reflect the amount a market participant would pay for the cash-generating unit in an arm’s length transaction. This is often estimated using discounted post tax cash flow techniques based on detailed life-of-mine and/or production plans.





(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

2. Summary of significant accounting policies (continued)

(q) Financial instruments (continued)

d) Derivative financial instruments

Derivatives are classified as fair value through profit or loss. Derivatives embedded in financial liabilities are treated as separate derivatives when their risks and characteristics are not closely related to their host contracts. Commodity-based derivatives resulting from provisionally priced concentrate are classified as fair value through profit or loss with changes in value recognized in revenue.

Impairment of financial assets

The Company recognizes a loss allowance for expected credit losses on financial assets that are measured at amortized cost.

At each reporting date, the Company measures the loss allowance for the financial asset at an amount equal to the twelve month expected credit loss for performing assets and the lifetime expected credit loss if the credit risk on the financial asset has increased significantly since initial recognition. For financial assets that are credit impaired at inception, the Company recognizes the expected lifetime credit loss allowance and any interest income is calculated on the net carrying amount.

Impairment losses on financial assets carried at amortized cost are reversed in subsequent periods if the expected credit losses are reversed after the impairment was recognized.

Derecognition

Financial assets are derecognized when the investments mature or are sold, and substantially all the risks and rewards of ownership have been transferred. A financial liability is derecognized when the obligation under the liability is discharged, canceled or expired. Gains and losses on derecognition are recognized within finance income and finance costs, respectively. Gains or losses on equity instruments designated as fair value through other comprehensive income remain within accumulated other comprehensive income.

Policy applicable before January 1, 2018:

The Company categorizes its financial assets in the following categories: at fair value through profit or loss, loans and receivables, available for sale or held-to-maturity investments. The classification depends on the purpose for which the financial assets were acquired.

2. Summary of significant accounting policies (continued)

(q) Financial instruments (continued)

(i) Financial assets

Management determines the classification of the Company’s non-derivative financial assets at initial recognition. The Company has no financial assets categorized at fair value through profit or loss or held-to-maturity.

a) Loans and receivables

Loans and receivables comprise non-derivative financial assets with fixed or determinable payments that are not quoted in an active market, with the exception of items for which the Company may not recover substantially all of its investment for reasons other than credit deterioration, which are classified as available for sale. Such assets are recognized initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, loans and receivables are measured at amortized cost using the effective interest method, less any impairment losses.

b) Available for sale financial assets

Available for sale financial assets are non-derivatives that are either designated as available for sale or not classified in any of the other categories. Subsequent to initial recognition, they are measured at fair value and changes therein, other than impairment losses and foreign currency differences on available for sale debt instruments, are recognized in other comprehensive income.

When an investment is derecognized, the cumulative gain or loss in accumulated other comprehensive income is transferred to the consolidated statement of income. The Company assesses at each balance sheet date whether there is objective evidence that a financial asset or a group of financial assets is impaired. In the case of equity securities classified as available for sale, an evaluation is made as to whether a decline in fair value is “significant” or “prolonged”. Impairment losses are recorded in the consolidated statement of income.

(ii) Financial liabilities

Borrowings and other financial liabilities (including trade payables but excluding embedded derivatives) are recognized initially at fair value, net of transaction costs incurred, and are subsequently stated at amortized cost. Any difference between the amounts originally received for borrowings and other financial liabilities (net of transaction costs) and the redemption value is recognized in the consolidated statement of income over the period to maturity using the effective interest method.



**2. Summary of significant accounting policies (continued)**

*(q) Financial instruments (continued)*

*(iii) Derivative financial instruments*

Derivatives are initially recognized at their fair value on the date the derivative contract is entered into and transaction costs are expensed in the consolidated statement of income. The Company’s derivatives are subsequently re-measured at their fair value at each consolidated balance sheet date with changes in fair value recognized in the consolidated statement of income.

Derivatives embedded in other financial instruments or other host contracts are treated as separate derivatives when their risks and characteristics are not closely related to their host contracts.

*(r) Share based payments*

The Company has a Performance Share Unit (“PSU”) Plan and a Director Deferred Share Unit (“DDSU”) Plan.

The PSUs and DDSUs are accounted for at fair value upon issuance and remeasured each reporting period, based on the fair market value of a common share of the Company, and recognized as an expense on a straight-line basis over the vesting period.

*(s) Segment reporting*

An operating segment is a component of the Company that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Company’s other components. Operating segments are reported consistently with internal information provided to the chief operating decision maker (“CODM”). The CODM, who is responsible for allocating resources and assessing performance, has been identified as Turquoise Hill’s Chief Executive Officer. Based upon management’s assessment of the above criteria, the Company has one operating segment, Oyu Tolgoi, with its copper-gold mine in Southern Mongolia.

**2. Summary of significant accounting policies (continued)**

*(t) New standards and interpretations not yet adopted*

A number of new standards, and amendments to standards and interpretations, are not yet effective for the year ending December 31, 2018, and have not been applied in preparing these consolidated financial statements. The following standard will have an effect on future consolidated financial statements of the Company:

*(i)* IFRS 16, *Leases*, which will replace IAS 17, *Leases*, is effective for the Company’s fiscal year ending December 31, 2019. The objective of the new standard is to report all leases on the consolidated balance sheet with the exception of short term (under 12 months) and low value leases, and to define how right to use assets and related lease liabilities are measured. Under the new standard, a lessee is in essence required to:

- (a)* Recognize all lease assets and liabilities (including those currently classified as operating leases) on the balance sheet, initially measured at the present value of the lease payments not paid at that date;
- (b)* Recognize amortization of lease assets and interest on lease liabilities in the statement of income over the lease term; and
- (c)* Separate the total amount of cash paid into a principal portion (presented within financing activities) and interest (which companies can choose to present within operating or financing activities consistent with presentation of any other interest paid) in the statement of cash flows.

In preparation for the first-time application of IFRS 16, the Company undertook an implementation project. The project has shown that the new definition in IFRS 16 will not change significantly the scope of contracts that meet the definition of a lease for the Company.

IFRS 16 will change how the Company accounts for leases previously classified as operating leases under IAS 17, which were off-balance sheet.

The Company will apply the definition of a lease and related guidance set out in IFRS 16 to all lease contracts entered into or modified on or after January 1, 2019 (whether it is a lessor or a lessee in the lease contract). The Company will apply the modified retrospective approach and will not restate comparative amounts for the year prior to first adoption.

For all leases, the lease liability will be measured at January 1, 2019 as the present value of any future minimum lease payments discounted using the appropriate incremental borrowing rate. The carrying value of the Company’s right of use assets will be measured as if the lease had been in place since commencement date. The difference between the right of use asset and the lease liability will be recognized as an adjustment to Deficit at January 1, 2019.

TURQUOISE HILL RESOURCES LTD.

Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

2. Summary of significant accounting policies (continued)

(t) New standards and interpretations not yet adopted (continued)

The Company will apply the following optional practical expedients permitted under the standard:

- For short-term leases (lease term of 12 months or less) and leases of low-value assets (such as personal computers and office furniture), the Company will opt to recognize a lease expense on a straight-line basis;
- to exclude any initial direct costs from the measurement of the right of use asset at transition; and
- to apply the use of hindsight when reviewing the lease arrangement for determination of the measurement or term of the lease under the retrospective method.

Under IFRS 16, right of use assets will be tested for impairment in accordance with IAS 36 Impairment of Assets. This will replace the previous requirement to recognize a provision for onerous lease contracts.

As at December 31, 2018, the Company has non-cancellable operating lease commitments of \$25.8 million relating primarily to the leasing of warehouse and office facilities as well as power lines and transportation equipment, the vast majority of which are located at Oyu Tolgoi. These arrangements relate to leases other than short-term leases and leases of low-value assets.

Upon adoption of IFRS 16 from January 1, 2019, the Company intends to recognize a right of use asset and a corresponding lease liability, recognizing the difference in Deficit, none of which are expected to have a material impact on the Company’s consolidated financial statements.

(ii) IFRIC 23, *Uncertainty of Income Tax Treatments*, changes the method of calculating provisions for uncertain tax positions. The Company currently recognized provisions based on the most likely amount of the liability, if any, for each uncertain tax position. The interpretation requires a probability weighted average approach to be taken for issues for which there are a wide range of possible outcomes. For tax issues with a binary outcome, the most likely amount method still remains. The Company is in the process of finalizing the impact of the adoption of IFRIC 23.

None of the remaining standards and amendments to standards and interpretations are expected to have a significant effect on the consolidated financial statements of the Company.

TURQUOISE HILL RESOURCES LTD.

Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

3. Operating segment

	Year Ended December 31, 2018		
	Oyu Tolgoi	Corporate and other eliminations	Consolidated
Revenue	\$ 1,180,022	\$ -	\$ 1,180,022
Cost of sales	(777,248)	-	(777,248)
Gross margin	402,774	-	402,774
Operating expenses	(284,063)	49,991	(234,072)
Corporate administration expenses	-	(24,370)	(24,370)
Other income	7,105	14	7,119
Income before finance items and taxes	125,816	25,635	151,451
Finance items			
Finance income	46,993	107,675	154,668
Finance costs	(388,388)	335,899	(52,489)
Income (loss) from operations before taxes	\$ (215,579)	\$ 469,209	\$ 253,630
Income and other taxes	165,803	(25,159)	140,644
Income (loss) for the year	\$ (49,776)	\$ 444,050	\$ 394,274
Depreciation and depletion	211,201	-	211,201
Capital additions	1,684,732	-	1,684,732
Current assets	409,733	3,116,854	3,526,587
Non-current assets	9,447,857	337,543	9,785,400
Current liabilities	508,551	25,855	534,406
Non-current liabilities	9,695,964	(5,329,167)	4,366,796
Net increase in cash	67,599	90,685	158,284

(a) Revenue by geographic destination is based on the ultimate country of destination, if known. If the destination of the concentrate sold through traders is not known, then revenue is allocated to the location of the concentrate at the time when revenue is recognized. During the year ended December 31, 2018, principally all of Oyu Tolgoi’s revenue arose from concentrate sales to customers in China and revenue from individual customers in excess of 10% of Oyu Tolgoi’s revenue was \$209.6 million, \$145.1 million and \$127.8 million (December 31, 2017 - \$195.6 million, \$187.7 million, \$168.1 million and \$124.9 million).

All long-lived assets of the Oyu Tolgoi segment, other than financial instruments, are located in Mongolia.



TURQUOISE HILL RESOURCES LTD.

Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

3. Operating segment (continued)

	Year Ended December 31, 2017		
	Oyu Tolgoi	Corporate and other eliminations	Consolidated
Revenue	\$ 939,780	\$ -	\$ 939,780
Cost of sales	(763,798)	-	(763,798)
Gross margin	175,982	-	175,982
Operating expenses	(238,967)	37,506	(201,461)
Corporate administration expenses	-	(21,999)	(21,999)
Other income	736	729	1,465
Income (loss) before finance items and taxes	(62,249)	16,236	(46,013)
Finance items			
Finance income	64,309	91,969	156,278
Finance costs	(373,639)	220,289	(153,350)
Income (loss) from operations before taxes	\$ (371,579)	\$ 328,494	\$ (43,085)
Income and other taxes	164,758	(10,745)	154,013
Income (loss) for the period	\$ (206,821)	\$ 317,749	\$ 110,928
Depreciation and depletion	307,572	32	307,604
Capital additions	1,253,253	-	1,253,253
Current assets	391,696	2,773,456	3,165,152
Non-current assets	7,814,976	1,853,191	9,668,167
Current liabilities	480,065	23,402	503,467
Non-current liabilities	8,538,758	(4,228,130)	4,310,628
Net increase (decrease) in cash	(40,662)	67,691	27,029

TURQUOISE HILL RESOURCES LTD.

Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

4. Revenue

	Year Ended December 31, 2018		
	Revenue from contracts with customers	Other revenue (a)	Total revenue
Total revenue:			
Copper	\$ 899,737	\$ (33,195)	\$ 866,542
Gold	299,820	609	300,429
Silver	12,946	105	13,051
	\$ 1,212,503	\$ (32,481)	\$ 1,180,022

	Year Ended December 31, 2017		
	Revenue from contracts with customers	Other revenue (a)	Total revenue
Total revenue:			
Copper	\$ 766,600	\$ 28,963	\$ 795,563
Gold	128,346	2,433	130,779
Silver	13,158	280	13,438
	\$ 908,104	\$ 31,676	\$ 939,780

(a) Other revenue relates to gains (losses) on the revaluation of trade receivables.

5. Cost of sales

	Year Ended December 31,	
	2018	2017
Production and delivery	\$ 568,007	\$ 468,372
Depreciation and depletion	209,496	304,144
Reversal of provision against carrying value of inventories (Note 9)	(255)	(8,718)
	\$ 777,248	\$ 763,798

**TURQUOISE HILL RESOURCES LTD.**

**Notes to the consolidated financial statements**

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

**6. Operating expenses**

	Year Ended December 31,	
	2018	2017
Oyu Tolgoi administration expenses	\$ 117,172	\$ 120,634
Royalty expenses	70,782	57,082
Inventory write downs (reversals) (a)	14,286	(6,834)
Selling expenses	26,754	24,132
Depreciation	1,705	3,460
Other	3,373	2,987
	<b>\$ 234,072</b>	<b>\$ 201,461</b>

(a) Inventory write downs (reversals) include net adjustments to the carrying value of ore stockpile inventories and materials and supplies; refer to Note 9.

**7. Finance items**

	Year Ended December 31,	
	2018	2017
Finance income:		
Interest income (a)	\$ 154,668	\$ 156,278
	<b>\$ 154,668</b>	<b>\$ 156,278</b>
Finance costs:		
Interest expense and similar charges	\$ (382,082)	\$ (349,262)
Amounts capitalized to property, plant and equipment (b)	334,668	200,764
Accretion of decommissioning obligations (Note 17)	(5,075)	(4,852)
	<b>\$ (52,489)</b>	<b>\$ (153,350)</b>

(a) Finance income on the related party receivable relates to amounts placed with Rio Tinto under an agreement for cash management services in connection with net proceeds from the project finance facility (refer to Note 22).

(b) The majority of the costs capitalized to property, plant and equipment were capitalized at the weighted average rate of the Company’s general borrowings of 8.2%.

**TURQUOISE HILL RESOURCES LTD.**

**Notes to the consolidated financial statements**

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

**8. Cash and cash equivalents**

	December 31, 2018	December 31, 2017
Cash at bank and on hand (a)	\$ 148,040	\$ 95,822
Money market funds and other cash equivalents (b)	1,455,027	1,348,961
	<b>\$ 1,603,067</b>	<b>\$ 1,444,783</b>

(a) At December 31 2018, cash at bank and on hand of \$124.0 million (December 31, 2017 - \$56.4 million) has been pledged as security for the project finance facility.

(b) At December 31, 2018, short-term liquid investments of \$741.7 million (December 31, 2017 - \$741.7 million) have been placed with Rio Tinto (refer to Note 22).

**9. Inventories**

	December 31, 2018	December 31, 2017
<i>Current</i>		
Concentrate	\$ 69,691	\$ 92,882
Ore stockpiles	76,512	65,556
Provision against carrying value of ore stockpiles	(15,636)	(10,129)
Materials and supplies	185,994	193,902
Provision against carrying value of materials and supplies	(73,591)	(68,069)
	<b>\$ 242,970</b>	<b>\$ 274,142</b>
<i>Non-current</i>		
Ore stockpiles	\$ 25,005	\$ 51,144
Provision against carrying value of ore stockpiles	(6,350)	(7,765)
	<b>\$ 18,655</b>	<b>\$ 43,379</b>

During the year ended December 31, 2018, \$777.2 million (2017 - \$763.8 million) of inventory was charged to cost of sales (Note 5).

During the year ended December 31, 2018, net write down charges of \$14.0 million (2017 – net write down reversals of \$15.6 million) were recognized in the consolidated statement of income relating to inventory write off and movement in provisions against carrying value. During the year ended December 31, 2018, inventory on which there was a provision against carrying value of \$4.4 million (2017 - \$56.3 million) was sold and recognized in cost of sales for the period.



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Notes to the consolidated financial statements

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10. Trade and other receivables

	December 31, 2018	December 31, 2017
Trade receivables and other	\$ 14,623	\$ 16,270
Due from related parties (Note 22)	15,641	12,819
	<b>\$ 30,264</b>	<b>\$ 29,089</b>

11. Prepaid expenses and other assets

	December 31, 2018	December 31, 2017
Prepaid expenses	\$ 27,285	\$ 13,816
Amounts prepaid to related parties (Note 22)	2,928	35,736
	<b>\$ 30,213</b>	<b>\$ 49,552</b>

12. Receivable from related party and other non-current financial assets

	December 31, 2018	December 31, 2017
Current assets:		
Receivable from related party (Note 22)	\$ 1,620,073	\$ 1,367,586
	<b>\$ 1,620,073</b>	<b>\$ 1,367,586</b>

	December 31, 2018	December 31, 2017
Receivable from related party and other non-current financial assets:		
Receivable from related party (Note 22)	\$ 266,211	\$ 1,788,698
Marketable securities	5,566	8,441
Other	7,242	6,935
	<b>\$ 279,019</b>	<b>\$ 1,804,074</b>

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(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

13. Property, plant and equipment

Year Ended December 31, 2018	Oyu Tolgoi			Other capital assets	
	Mineral property interests	Plant and equipment	Capital works in progress		Total
Net book value:					
January 1, 2018	\$ 834,310	\$ 3,197,491	\$ 3,315,171	\$ -	<b>7,346,972</b>
Additions	21,137	-	1,328,927	-	<b>1,350,064</b>
Interest capitalized (Note 7)	-	-	334,668	-	<b>334,668</b>
Depreciation for the year	(56,334)	(133,070)	-	-	<b>(189,404)</b>
Disposals and write offs	-	(3,995)	-	-	<b>(3,995)</b>
Transfers and other movements	-	203,021	(203,021)	-	-
<b>December 31, 2018</b>	<b>\$ 799,113</b>	<b>\$ 3,263,447</b>	<b>\$ 4,775,745</b>	<b>\$ -</b>	<b>\$ 8,838,305</b>
Cost	1,247,246	4,729,132	4,775,745	1,152	<b>10,753,275</b>
Accumulated depreciation / impairment	(448,133)	(1,465,685)	-	(1,152)	<b>(1,914,970)</b>
<b>December 31, 2018</b>	<b>\$ 799,113</b>	<b>\$ 3,263,447</b>	<b>\$ 4,775,745</b>	<b>\$ -</b>	<b>\$ 8,838,305</b>
Non-current assets pledged as security (a)	\$ 799,113	\$ 3,263,447	\$ 4,775,745	\$ -	<b>\$ 8,838,305</b>

Year Ended December 31, 2017	Oyu Tolgoi			Other capital assets	
	Mineral property interests	Plant and equipment	Capital works in progress		Total
Net book value:					
January 1, 2017	\$ 854,089	\$ 3,394,948	\$ 2,167,962	\$ 32	<b>\$ 6,417,031</b>
Additions	47,270	-	1,005,219	-	<b>1,052,489</b>
Interest capitalized (Note 7)	-	-	200,764	-	<b>200,764</b>
Depreciation for the year	(67,049)	(253,296)	-	(32)	<b>(320,377)</b>
Disposals and write offs	-	(2,935)	-	-	<b>(2,935)</b>
Transfers and other movements	-	58,774	(58,774)	-	-
<b>December 31, 2017</b>	<b>\$ 834,310</b>	<b>\$ 3,197,491</b>	<b>\$ 3,315,171</b>	<b>\$ -</b>	<b>\$ 7,346,972</b>
Cost	1,226,109	4,541,570	3,315,171	1,152	<b>9,084,002</b>
Accumulated depreciation / impairment	(391,799)	(1,344,079)	-	(1,152)	<b>(1,737,030)</b>
<b>December 31, 2017</b>	<b>\$ 834,310</b>	<b>\$ 3,197,491</b>	<b>\$ 3,315,171</b>	<b>\$ -</b>	<b>\$ 7,346,972</b>
Non-current assets pledged as security (a)	\$ 834,310	\$ 3,197,491	\$ 3,315,171	\$ -	<b>\$ 7,346,972</b>

13. Property, plant and equipment (continued)

- (a) In addition to property, plant and equipment, at December 31, 2018 current and non-current inventory of \$243.0 million (December 31, 2017 - \$274.1 million) and \$18.7 million (December 31, 2017 - \$43.4 million) respectively are pledged as security for the project finance facility.
- (b) At December 31, 2018, the Company reviewed impairment indicators at the Oyu Tolgoi cash-generating unit level and identified that there was an indicator of impairment. The recoverable amount was assessed as the higher of value in use and FVLCD. The recoverable amount was determined by reference to a FVLCD model using discounted post-tax cash flows in line with the Company’s accounting policy for impairment of non-current assets set out in Note 2 (k).

The Company’s assessment of FVLCD exceeded the carrying value by \$3.7 billion at December 31, 2018. As such, no impairment charge has been recognized in the consolidated statement of income.

In arriving at FVLCD, post-tax cash flows expressed in real terms have been estimated based on detailed life-of-mine plans and discounted using a post-tax real discount rate of 8.0%. Long-term forecast commodity prices were estimated using industry analyst consensus forecasts.

During the fourth quarter of 2018, the Company carried out its own review of the previously announced Rio Tinto schedule and cost re-forecast for the Oyu Tolgoi underground project that had concluded that a delay to sustainable first production was expected from the first quarter of 2021 to late in the third quarter of 2021. On December 31, 2018, Oyu Tolgoi and the Government of Mongolia signed the Power Source Framework Agreement, which provides a binding framework and pathway forward for the construction of a Tavan Tolgoi-based power project, as well as establishes the basis for a long-term domestic power solution for the mine. The impact of these updates has been reflected in the recoverable amount of the Oyu Tolgoi cash-generating unit.

Reasonably possible movements in key assumptions could reduce the calculated recoverable amount. The post-tax real discount rate would need to be increased to 10.4% or the long-term copper and gold prices would need to be reduced by 15%, in order for the recoverable amount to equal the carrying value of the cash-generating unit.

Since the completion of its independent review and as announced on February 27, 2019, the Company has become aware that Rio Tinto, as manager of the project, has advised that as the lateral development continues, there is more detailed data than what was previously available. As a consequence, Rio Tinto is studying the impact of some potentially significant changes to some future elements of the underground design including relocating the ore passes. This, together with the delay to Shaft 2 also announced by the Company on February 27, 2019, is ultimately expected to result in an overall schedule delay to sustainable first production beyond the end of the third quarter of 2021.

Recognizing the uncertainties noted above, the Company acknowledges that a further delay to first sustainable production would have an adverse impact upon the recoverable amount. The Company has estimated that, based on its best available information, any possible additional delay to sustainable first production, whilst maintaining a total project cost of \$5.3 billion, would reduce the recoverable amount by approximately \$0.1 billion per each incremental month of delay.

13. Property, plant and equipment (continued)

As such, the Company believes that any reasonably possible movement in the development schedule would not reduce the recoverable amount to below the carrying value of the Oyu Tolgoi cash-generating unit.

14. Trade and other payables

	December 31, 2018	December 31, 2017
Trade payables and accrued liabilities	\$ 395,883	\$ 360,697
Interest payable on long-term borrowings	10,906	10,161
Payable to related parties (Note 22)	51,490	52,308
Other	965	12,703
	<b>\$ 459,244</b>	<b>\$ 435,869</b>

15. Borrowings and other financial liabilities

	December 31, 2018	December 31, 2017
Project finance facility (a)	\$ 4,175,240	\$ 4,146,601
Finance lease payable	12,057	12,518
	<b>\$ 4,187,297</b>	<b>\$ 4,159,119</b>

(a) Project finance facility

On December 14, 2015, Oyu Tolgoi signed a \$4.4 billion project finance facility. The facility is provided by a syndicate of international financial institutions and export credit agencies representing the governments of Canada, the United States and Australia, along with 15 commercial banks. The project finance lenders have agreed a debt cap of \$6.0 billion. In addition to the funding drawn down to date there is an additional \$0.1 billion available, subject to certain conditions, under the Company’s facility with the Export-Import Bank of the United States, and the potential for an additional \$1.6 billion of supplemental debt in the future. Under the terms of the project finance facility held by Oyu Tolgoi, there are certain restrictions on the ability of Oyu Tolgoi to make shareholder distributions.



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15. Borrowings and other financial liabilities (continued)

(a) Project finance facility (continued)

At December 31, 2018, Oyu Tolgoi has drawn down \$4.3 billion of the project finance facility:

Facility	December 31, 2018		Original Term (ii)	Annual interest rate	
	Carrying Value (i)	Fair Value (i)		Pre-completion	Post-completion
International Financial Institutions - A Loan	\$ 768,002	\$ 899,021	15 years	LIBOR + 3.78%	LIBOR + 4.78%
Export Credit Agencies Loan	871,491	949,936	14 years	LIBOR + 3.65%	LIBOR + 4.65%
	271,408	307,439	13 years	2.3%	2.3%
MIGA Insured Loan (iii)	676,157	735,065	12 years	LIBOR + 2.65%	LIBOR + 3.65%
Commercial Banks - B Loan	1,588,182	1,674,216	12 years	LIBOR + 3.4%	LIBOR + 4.4%
				Includes \$50 million 15-year loan at A Loan rate	
	\$ 4,175,240	\$ 4,565,677			

(i) The carrying value of borrowings under the project finance facility differs from fair value due to amortized transaction costs, and changes in the estimate of fair value between the initial recognition date and the balance sheet date. Project finance borrowings were initially recognized at fair value less transaction costs on the relevant draw down dates, with aggregate initial fair value being \$4,347.2 million before transaction costs. At December 31, 2018, these borrowings are stated net of \$172.0 million amortized transaction costs.

At December 31, 2018, the fair value of the Company’s borrowings has been estimated with reference to a market yield, the variability of which is considered a reasonable indicator, over the pre-completion period, of movements in the fair value of amounts drawn under the project finance facility. Post completion, the fair value has been estimated with reference to the annual interest rate on each tranche of the facility, and consideration of factors that could indicate a change in the credit assessment of Oyu Tolgoi LLC as a counterparty to project finance. These considerations include in-country risk relating to the Oyu Tolgoi project, and the assumed date of transition from pre-completion to post-completion. This is considered a level 3 fair value measurement. Refer to Note 22 (v) for a description of Rio Tinto guarantee arrangements with respect to project finance borrowings.

(ii) The project finance facility provides for interest only payments for the first five years followed by minimum repayments according to a stepped amortization schedule for the remaining life of the facility.

(iii) The Multilateral Investment Guarantee Agency (“MIGA”) provides political risk insurance for commercial banks. The Company is required to pay an annual insurance premium of 1.4% of the MIGA Insured Loan for the remaining life of the facility.

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16. Income taxes

(a) Tax expense (benefit)

	Year Ended December 31,	
	2018	2017
Current (i)	\$ 12,804	\$ 5,613
Deferred		
Temporary differences including tax losses (ii)	(175,679)	(177,342)
Withholding taxes (iii)	22,231	17,716
	\$ (153,448)	\$ (159,626)
Net income statement benefit for income taxes	\$ (140,644)	\$ (154,013)

(i) Current taxes

In 2018, a cash payment of \$4.9 million (2017 - \$1.2 million) was made in respect of withholding tax in addition to other current taxes payable. Deferred tax liabilities for withholding taxes are reclassified to current tax prior to settlement.

(ii) Deferred tax assets

2018 – Mongolia

Deferred tax assets of \$584.2 million were recognized at December 31, 2018 in Mongolia, comprising of \$280.1 million relating to tax losses that expire if not recovered against taxable profits within eight years and \$304.1 million relating to accrued but unpaid interest expense and other temporary differences. Tax losses have been calculated in accordance with the provisions of the Oyu Tolgoi Investment Agreement and Mongolian laws.

The Company recognized deferred tax assets at December 31, 2018 to the extent recovery is considered probable. In assessing the probability of recovery, taxable profit projections, derived from cash flows from detailed life-of-mine and production plans, were evaluated with reference to commodity price sensitivities, operating cost assumptions, and carry-forward limits.

During the year ended December 31, 2018, the Company recognized additional Mongolian deferred tax assets of \$165.9 million, of which \$105.6 million was the result of additional operating losses and accrued but unpaid interest expense incurred by Oyu Tolgoi in the period.

The remaining movement in the Mongolian deferred tax asset was due to an overall strengthening of taxable income forecasts driven by improved long-term commodity price projections and updated operating assumptions in mine planning during the year. This was partly offset by a reduction of the deferred tax asset recognized for losses incurred in 2016, as the delay to sustainable first production of

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Notes to the consolidated financial statements

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16. Income taxes (continued)

(a) Tax expense (benefit) (continued)

the underground mine is expected to lead to an increase in the amount of 2016 losses estimated to expire un-utilized.

2018 – Canada

The deferred tax asset at December 31, 2018 of \$65.3 million was recognized in relation to non-capital Canadian tax losses carried forward. Non-capital losses expire if not used to offset taxable income within twenty years. Updated projections, including interest income, management service fees, and operating costs increased projected taxable income against which the recoverability of tax losses was assessed.

2017 - Mongolia

At December 31, 2017, the Company recognized a deferred tax asset related to Mongolian tax losses and accrued but unpaid interest totaling \$418.3 million. During the year ended December 31, 2017, the Company recognized additional Mongolian deferred tax assets of \$164.9 million, of which \$81.9 million related to 2017 activity. The remaining movement in the Mongolian deferred tax asset was due to an overall strengthening of taxable income forecasts driven by improved long-term commodity price projections and the impact of the tax assessment, partly offset by updated operating assumptions in mine planning.

In January 2018, Oyu Tolgoi received a tax assessment from the Mongolian Tax Authority (the “MTA”) as a result of a general tax audit for the period covering 2013 through 2015 (see Note 23). The tax assessment resulted in an adjustment to the deferred tax asset recognized in 2017, reducing tax losses and deductions for depreciation of property, plant, and equipment from years prior to 2017. The tax assessment impacted the timing of future tax deductions for depreciation of property, plant, and equipment which positively impacted the recoverability of tax losses.

2017 - Canada

The deferred tax asset at December 31, 2017 of \$55.5 million was recognized in relation to non-capital Canadian tax losses carried forward.

(iii) Withholding taxes

Withholding tax is accrued on loans and recognized within deferred tax liabilities as interest accrues. Mongolian or Canadian withholding tax will be due upon receipt of loan interest.

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16. Income taxes (continued)

(b) Reconciliation of income taxes calculated at the statutory rates to the actual tax provision

	Year Ended December 31,	
	2018	2017
Income (loss) from operations before taxes	\$ 253,630	\$ (43,085)
Tax at Canadian combined federal and provincial income tax rate (2018: 26.73%; 2017: 26%)	67,795	(11,202)
Tax effect of:		
Change in amount of deferred tax recognized	(152,639)	(92,098)
Difference in tax rates and treatment in foreign jurisdictions	(83,568)	(74,638)
Withholding taxes	24,670	18,932
Non deductible losses and expense	3,098	4,993
	\$ (140,644)	\$ (154,013)

Effective January 1, 2018, the Canadian statutory tax rate increased due to the British Columbia legislative changes. The effective tax rate is based on provincial apportionment.

(c) Deferred tax assets and liabilities

Recognized and unrecognized deferred tax assets and liabilities are shown in the table below:

	Recognized		Unrecognized	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Deferred tax assets				
Non-capital losses (i)	\$ 345,368	\$ 349,956	\$ 276,492	\$ 237,463
Capital losses	-	-	120,626	120,209
Other temporary differences including accrued interest	304,053	123,786	11,674	205,736
	\$ 649,421	\$ 473,742	\$ 408,792	\$ 563,408
Deferred tax liabilities (ii)				
Withholding tax	(47,934)	(25,788)	-	-
	\$ (47,934)	\$ (25,788)	\$ -	\$ -

(i) Unrecognized deferred tax assets relating to Mongolian non-capital losses for which recovery is not considered probable as at December 31, 2018 expire between 2021 and 2024.

(ii) Deferred tax is not recognized on the unremitted earnings of subsidiaries where the Company is able to control the timing of the remittance and it is probable that there will be no remittance in the foreseeable future. At December 31, 2018, there were no unremitted earnings for which deferred tax liabilities had not been recognized (2017: nil).



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**16. Income taxes (continued)**

(c) *Deferred tax assets and liabilities (continued)*

In addition to the above, the Company has \$812.1 million of investment tax credits at December 31, 2018. No deferred tax asset has been recognized in respect of these credits, in accordance with the initial recognition exception in IAS 12 *Income taxes* for transactions that are not a part of a business combination.

**17. Decommissioning obligations**

	Year Ended December 31,	
	2018	2017
Opening carrying amount	\$ 125,721	\$ 118,903
Changes in estimates and new estimated cash flows	769	1,966
Accretion of present value discount	5,075	4,852
	<b>\$ 131,565</b>	<b>\$ 125,721</b>

All decommissioning obligations relate to Oyu Tolgoi. Reclamation and closure costs have been estimated based on the Company’s interpretation of current regulatory requirements and other commitments made to stakeholders, and are measured as the net present value of future cash expenditures upon reclamation and closure.

Estimated future cash expenditures of \$273.7 million (December 31, 2017 - \$266.5 million) have been discounted from an anticipated closure date of 2055 to their present value at a real rate of 2.0% (December 31, 2017 - 2.0%).

**18. Share capital**

The authorized share capital of Turquoise Hill consists of an unlimited number of Common Shares without par value and an unlimited number of Preferred Shares. As at both December 31, 2018 and 2017, there were 2,012,314,469 Common Shares and no Preferred Shares issued and outstanding.

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**19. Non-controlling interests**

	Non-controlling Interest: Oyu Tolgoi (a) Year Ended December 31,	
	2018	2017
Balance, January 1	\$ (893,211)	\$ (822,892)
Non-controlling interest's share of loss	(16,924)	(70,319)
Common share investments funded on behalf of non-controlling interest (a)	175,100	95,200
Funded amounts repayable to the Company (a)	(175,100)	(95,200)
<b>Balance, December 31</b>	<b>\$ (910,135)</b>	<b>\$ (893,211)</b>

(a) Since 2011, the Company has funded common share investments in Oyu Tolgoi on behalf of Erdenes Oyu Tolgoi LLC (“Erdenes”). In accordance with the Amended and Restated Shareholders Agreement dated June 8, 2011, such funded amounts earn interest at an effective annual rate of LIBOR plus 6.5% and are repayable to the Company via a pledge over Erdenes’ share of future Oyu Tolgoi common share dividends. Erdenes also has the right to reduce the outstanding balance by making payments directly to the Company.

Common share investments funded on behalf of Erdenes are recorded as a reduction to the net carrying value of non-controlling interest. As at December 31, 2018, the cumulative amount of such funding was \$1,021.4 million (December 31, 2017 - \$846.3 million). Accrued interest of \$505.6 million (December 31, 2017 - \$387.7 million) relating to this funding, has not been recognized in these consolidated financial statements, as payment will be triggered on common share dividend distribution by Oyu Tolgoi, the certainty of which cannot currently be reliably determined.

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Notes to the consolidated financial statements

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20. Cash flow information

(a) Reconciliation of net income to net cash flow generated from operating activities before interest and tax

	Year Ended December 31,	
	2018	2017
Income from continuing operations	\$ 394,274	\$ 110,928
Adjustments for:		
Depreciation and amortization	211,201	307,604
Finance items:		
Interest income	(154,668)	(156,278)
Interest and accretion expense	52,489	153,350
Realized and unrealized (gains) losses on financial instruments	-	(6,704)
Unrealized foreign exchange losses (gains)	851	(219)
Inventory write downs (reversals)	14,031	(15,552)
Write down of carrying value of property, plant and equipment	3,373	2,729
Income and other taxes	(140,644)	(154,013)
Other items	(219)	491
Net change in non-cash operating working capital items:		
(Increase) decrease in:		
Inventories	(983)	(13,885)
Trade, other receivables and prepaid expenses	(8,377)	14,439
(Decrease) increase in:		
Trade and other payables	(15,886)	52,009
Deferred revenue	7,564	30,896
Cash generated from operating activities before interest and tax	\$ 363,006	\$ 325,795

(b) Supplementary information regarding other non-cash transactions

The non-cash investing and financing activities relating to operations not already disclosed in the consolidated statements of cash flows were as follows:

	Year Ended December 31	
	2018	2017
Investing activities		
Change in accounts payable and accrued liabilities related to purchase of property, plant and equipment	\$ 26,930	\$ 110,782

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21. Earnings per share

Basic earnings per share is computed by dividing the net income attributable to owners of Turquoise Hill by the weighted average number of common shares outstanding during the period. All stock options and share purchase warrants outstanding at each period end have been excluded from the weighted average share calculation. As at December 31, 2018, the number of potentially dilutive shares excluded from the earnings per share calculation due to anti-dilution is nil (December 31, 2017 – 151,042). As of January 29, 2018, there were no longer any outstanding options in the Company’s Equity Incentive Plan. As a result, the Turquoise Hill Board of Directors decided to repeal the Equity Incentive Plan on March 14, 2018.

22. Related parties

As at December 31, 2018, Rio Tinto plc’s indirect equity ownership in the Company was 50.8% (December 31, 2017: 50.8%). The following tables present the consolidated financial statements line items within which transactions with a Rio Tinto entity or entities (“Rio Tinto”) are reported. Rio Tinto entities comprise Rio Tinto plc, Rio Tinto Limited and their respective subsidiaries other than Turquoise Hill Resources and its subsidiaries.

	Year Ended December 31,	
Statements of Income	2018	2017
Operating and corporate administration expenses:		
Cost recoveries - Turquoise Hill	\$ 623	\$ 1,091
Management services payment (i)	(30,055)	(24,554)
Cost recoveries - Rio Tinto (ii)	(40,627)	(41,632)
Finance income:		
Cash and cash equivalents (iii)	20,175	13,105
Receivable from Rio Tinto (iv)	119,688	134,130
Finance costs:		
Completion support fee (v)	(108,421)	(108,158)
	\$ (38,617)	\$ (26,018)

	Year Ended December 31,	
Statements of Cash Flows	2018	2017
Cash generated from operating activities		
Interest received (iii, iv)	\$ 72,012	\$ 52,232
Interest paid (v)	(11,918)	(40,913)
Cash flows from investing activities		
Receivable from related party: amounts withdrawn (iv)	1,270,000	820,000
Expenditures on property, plant and equipment:		
Management services payment and cost recoveries - Rio Tinto (i), (ii)	(61,145)	(49,362)



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22. Related parties (continued)

	December 31, 2018	December 31, 2017
Balance Sheets		
Cash and cash equivalents (iii)	\$ 741,711	\$ 741,711
Trade and other receivables (Note 10)	15,641	12,819
Prepaid expenses and other assets (Note 11)	2,928	35,736
Receivable from related party and other non-current financial assets (iv) (Note 12)	1,886,284	3,156,284
Trade and other payables (Note 14)		
Management services payment - Rio Tinto (i)	(15,700)	(14,128)
Cost recoveries - Rio Tinto (ii)	(35,790)	(38,180)
	\$ 2,595,074	\$ 3,894,242

- (i) In accordance with the Amended and Restated Shareholders’ Agreement, which was signed on June 8, 2011, and other related agreements, Turquoise Hill is required to make a management services payment to Rio Tinto equal to a percentage of all capital costs and operating costs incurred by Oyu Tolgoi from March 31, 2010 onwards. After signing the Underground Mine Development and Financing Plan on May 18, 2015, the management services payment to Rio Tinto is calculated as 1.5% applied to underground development capital costs, and 3% applied to operating costs and capital related to current operations.
- (ii) Rio Tinto recovers the costs of providing general corporate support services and mine management services to Turquoise Hill. Mine management services are provided by Rio Tinto in its capacity as the manager of Oyu Tolgoi.
- (iii) In addition to placing cash and cash equivalents on deposit with banks or investing funds with other financial institutions, Turquoise Hill may deposit cash and cash equivalents with Rio Tinto in accordance with an agreed upon policy and strategy for the management of liquid resources. At December 31, 2018, cash equivalents deposited with wholly owned subsidiaries of Rio Tinto totalled \$741.7 million, earning interest at rates equivalent to those offered by financial institutions or short-term corporate debt.
- (iv) As part of project finance (Note 15), Turquoise Hill appointed 9539549 Canada Inc., a wholly owned subsidiary of Rio Tinto, as service provider to provide post-drawdown cash management services in connection with net proceeds from the project finance facility, which were placed with 9539549 Canada Inc. and shall be returned to Turquoise Hill as required for purposes of Oyu Tolgoi underground mine development and funding. Rio Tinto International Holdings Limited, a wholly owned subsidiary of Rio Tinto, agreed to guarantee the obligations of the service provider under this agreement. At December 31, 2018, the resulting receivable from 9539549 Canada Inc. totalled \$1,886.3 million, earning interest at an effective annual rate of LIBOR plus 2.45%. The interest rate reflects: interest receivable at LIBOR minus 0.05%; plus a benefit of 2.5% arising on amounts receivable from 9539549 Canada Inc. under the Cash Management Services Agreement, which are net settled with the 2.5% completion support fee described in (v) below.

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Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

22. Related parties (continued)

At December 31, 2018, the fair value of the receivable approximates its carrying value. The fair value has been estimated with reference to a market yield, the variability of which is considered a reasonable indicator, over the projected timeframe for returning funds to Turquoise Hill, of movements in the fair value of the receivable. This is considered a level 3 fair value measurement.

- (v) As part of the project finance agreements (Note 15), Rio Tinto agreed to provide a guarantee, known as the completion support undertaking (“CSU”) in favour of the Commercial Banks and the Export Credit Agencies. In consideration for providing the CSU, the Company is required to pay Rio Tinto a fee equal to 2.5% of the amounts drawn under the facility. The annual completion support fee of 2.5% on amounts drawn under the facility is accounted for as a borrowing cost and included within interest expense and similar charges (refer to Note 7). The fee is settled net of a benefit arising on amounts receivable from 9539549 Canada Inc. under the Cash Management Services Agreement described in (iv) above. The fee payment obligation will terminate on the date Rio Tinto’s CSU obligations to the project lenders terminate.

The above noted transactions were carried out in the normal course of operations and were measured at the transaction amount, which is the amount of consideration established and agreed to by the related parties.

23. Commitments and contingencies

(a) Capital commitments

At December 31, 2018, the Company had capital expenditure commitments at the balance sheet date of \$46.0 million. These commitments represent minimum non-cancellable obligations and exit costs for cancellable obligations.

(b) Operating lease commitments

The following table presents the future aggregate minimum lease payments under non-cancellable operating leases as at December 31, 2018:

	December 31, 2018	December 31, 2017
Less than one year	13,737	\$ 20,317
1 to 5 years	9,977	25,621
More than 5 years	2,147	3,125
	\$ 25,861	\$ 49,063

(c) Other commitments

During 2017, Oyu Tolgoi signed a new power purchase agreement with the National Power Transmission Grid (“NPTG”) of Mongolia. The power purchase agreement was executed in connection with the power import arrangement between NPTG and the Inner Mongolia Power International Corporation (“IMPIC”).

23. Commitments and contingencies (continued)

The new arrangement took effect on July 4, 2017, subsequent to the expiry of the previous IMPIC agreement, for a term of up to six years, with possibility of early cancelation after the fourth year, if a domestic power plant is commissioned earlier.

At December 31, 2018, the Company had power purchase commitments of \$339.0 million. These commitments represent minimum non-cancellable obligations.

(d) On January 16, 2018, the Company announced that Oyu Tolgoi received a tax assessment for approximately \$155 million from the Mongolian Tax Authority (the “MTA”) as a result of a general tax audit for the period covering 2013 through 2015. In January 2018 Oyu Tolgoi paid an amount of \$4.8 million to settle unpaid taxes, fines and penalties for accepted items.

The Company is of the opinion that Oyu Tolgoi has now paid all taxes and charges required under the 2009 Oyu Tolgoi Investment Agreement (“Investment Agreement”), the Amended and Restated Shareholders’ Agreement (“ARSHA”), the Underground Mine Development and Financing Plan and Mongolian law. Following engagement with the MTA, Oyu Tolgoi was advised that the MTA could not resolve Oyu Tolgoi’s objections to the tax assessment. Accordingly, on March 15, 2018, Oyu Tolgoi issued a notice of dispute to the Government of Mongolia under the Investment Agreement and on April 13, 2018, Oyu Tolgoi submitted a claim to the Mongolian Administrative Court. The Administrative Court has currently suspended the processing of the case for an indefinite period based on current procedural uncertainty in relation to the tax assessment disputes.

Chapter 14 of the Investment Agreement sets out a dispute resolution process. The issuance of a notice of dispute is the first step in the dispute resolution process and commenced a 60 working-day negotiation period. The parties were unable to reach a resolution during the 60 working-day period; however, the parties can continue discussions in an attempt to resolve the dispute in good faith. If unsuccessful, the next step would be dispute resolution through international arbitration.

The Company accrues for such matters when both a liability is probable and the amount can be reasonably estimated. The Company believes that Oyu Tolgoi has paid all taxes and charges as required under the Investment Agreement, ARSHA, the Underground Mine Development and Financing Plan and Mongolian law and in the opinion of the Company at December 31, 2018, a provision is not required for the amount of approximately \$150 million disputed by the Company relating to the years 2013 through 2015 or any additional amounts related to 2016 through 2018. The amounts that could arise related to 2016 through 2018 would be material. The final amount of taxes to be paid depends on a number of factors including the outcome of discussions with the government and possible international arbitration. Changes in management’s assessment of the outcome of this matter could result in material adjustments to the Company’s statements of income and financial position.

Due to the size, complexity and nature of Turquoise Hill’s operations, various legal and tax matters arise in the ordinary course of business. Turquoise Hill recognizes a liability with respect to such matters when an outflow of economic resources is assessed as probable and the amount can be reliably estimated. In the opinion of management, these matters will not have a material effect on the consolidated financial statements of the Company.

24. Financial instruments and fair value measurements

Certain of the Company’s financial assets and liabilities are measured at fair value on a recurring basis and classified in their entirety based on the lowest level of input that is significant to the fair value measurement. Certain non-financial assets and liabilities may also be measured at fair value on a non-recurring basis.

The fair value of financial assets and financial liabilities measured at amortized cost is determined in accordance with accepted pricing models based on discounted cash flow analysis or using prices from observable current market transactions. Except as otherwise specified, the Company considers that the carrying amount of other receivables, trade payables and other financial assets measured at amortized cost approximates their fair value because of the demand nature or short-term maturity of these instruments.

The following tables provide an analysis of the Company’s financial assets that are measured subsequent to initial recognition at fair value on a recurring basis, grouped into Level 1 to 3 based on the degree to which the significant inputs used to determine the fair value are observable.

- Level 1 fair value measurements are those derived from quoted prices in active markets for identical assets or liabilities.
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1, that are observable either directly or indirectly.
- Level 3 fair value measurements are those derived from valuation techniques that include significant inputs that are not based on observable market data.

	Total	Fair Value at December 31, 2018		
		Level 1	Level 2	Level 3
Money market funds (a)	\$ 315,808	\$ 315,808	\$ -	\$ -
Marketable securities (a)	5,566	5,566	-	-
Trade receivables (b)	10,936	-	10,936	-
	\$ 332,310	\$ 321,374	\$ 10,936	\$ -

	Total	Fair Value at December 31, 2017		
		Level 1	Level 2	Level 3
Money market funds (a)	\$ 272,928	\$ 272,928	\$ -	\$ -
Marketable securities (a)	8,441	8,441	-	-
Trade receivables (b)	13,695	-	13,695	-
	\$ 295,064	\$ 281,369	\$ 13,695	\$ -

- (a) The Company’s money market funds and marketable securities are classified within level 1 of the fair value hierarchy as they are valued using quoted market prices in active markets.
- (b) Trade receivables from provisionally priced concentrate sales are included in level 2 of the fair value hierarchy as the basis of valuation uses quoted commodity prices.





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24. Financial instruments and fair value measurements (continued)

Financial risk management (continued)

Capital risk management

The Company’s objectives when managing capital risk are to safeguard its ability to continue as a going concern, to provide an adequate return to shareholders and to support any growth plans.

The Company considers its capital to be share capital and third party borrowings. To effectively manage capital requirements, the Company has in place a planning and budgeting process to help determine the funds required to ensure the Company has the appropriate liquidity to meet its operating needs. The Company seeks to ensure that there is sufficient borrowing capacity and cash to meet its short term business requirements, taking into account its anticipated cash flows from operations and its holdings of cash, cash equivalents and receivable from related party.

25. Key management compensation

The compensation for key management, which comprises Turquoise Hill’s directors, Chief Executive Officer, Chief Financial Officer, and Vice President, Operations and Development, in respect of employee services is as follows:

	Year Ended December 31,	
	2018	2017
Salaries, director fees and other short term benefits	\$ 1,909	\$ 2,092
Post-employment benefits	27	63
Share based payment	1,262	1,386
	\$ 3,198	\$ 3,541

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