
Management's Discussion and Analysis

February 12, 2019

Teck

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Our business is exploring for, acquiring, developing and producing natural resources. We are organized into business units focused on steelmaking coal, copper, zinc and energy. These are supported by our corporate offices, which manage our corporate growth initiatives and provide marketing, administrative, technical, financial and other services.

Through our interests in mining and processing operations in Canada, the United States (U.S.), Chile and Peru, we are the world's second-largest seaborne exporter of steelmaking coal, an important producer of copper, one of the world's largest producers of mined zinc and we have an interest in a large producing oil sands mine. We also produce lead, silver, molybdenum and various specialty and other metals, chemicals and fertilizers. We actively explore for copper, zinc and gold, and we hold interests in oil sands assets in the Athabasca region of Alberta.

This Management's Discussion and Analysis of our results of operations is prepared as at February 12, 2019 and should be read in conjunction with our audited annual consolidated financial statements for the year ended December 31, 2018. Unless the context otherwise dictates, a reference to Teck, Teck Resources, the Company, us, we or our refers to Teck Resources Limited and its subsidiaries, including Teck Metals Ltd. and Teck Coal Partnership. All dollar amounts are in Canadian dollars, unless otherwise stated, and are based on our 2018 audited annual consolidated financial statements that are prepared in accordance with International Financial Reporting Standards (IFRS). Certain comparative amounts have been restated as a result of the adoption of new IFRS pronouncements. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018 for more details. In addition, we use certain financial measures, which are identified throughout the Management's Discussion and Analysis in this report, that are not measures recognized under IFRS and do not have a standardized meaning prescribed by IFRS. See "Use of Non-GAAP Financial Measures" on page 56 for an explanation of these financial measures and reconciliation to the most directly comparable financial measures under IFRS.

This Management's Discussion and Analysis contains certain forward-looking information and forward-looking statements. You should review the cautionary statement on forward-looking statements under the heading "Cautionary Statement on Forward-Looking Statements" on page 66, which forms part of this Management's Discussion and Analysis, as well as the risk factors discussed in our most recent Annual Information Form.

Additional information about us, including our most recent Annual Information Form, is available on our website at www.teck.com, under Teck's profile at www.sedar.com (SEDAR), and on the EDGAR section of the United States Securities and Exchange Commission (SEC) website at www.sec.gov.

Business Unit Results

The following table shows a summary of our production of our major commodities for the last five years and estimated production for 2019.

Five-Year Production Record and Our Estimated Production in 2019

Principal Products	2014	2015	2016	2017	2018	2019 estimate ⁽³⁾
Steelmaking coal	million tonnes	26.7	25.3	27.6	26.6	26.25
Copper ⁽¹⁾	thousand tonnes	333	358	324	287	300
Zinc						
Contained in concentrate	thousand tonnes	660	658	662	659	635
Refined	thousand tonnes	277	307	312	310	307
Energy (bitumen) ⁽¹⁾⁽²⁾	million barrels	—	—	—	—	13.0

Notes:

- (1) We include 100% of the production and sales from Quebrada Blanca and Carmen de Andacollo mines in our production and sales volumes, even though we own 90% of these operations, because we fully consolidate their results in our financial statements. Our ownership in Quebrada Blanca is expected to be 60% upon closing of our transaction with Sumitomo Metal Mining Co., Ltd. and Sumitomo Corporation, and production and sales will continue to be reported on a 100% basis. We include 22.5% and 21.31% of production and sales from Antamina and Fort Hills, respectively, representing our proportionate ownership interest in these operations. Copper production includes cathode production at Quebrada Blanca. Zinc contained in concentrate production includes co-product zinc production from our copper business unit.
- (2) Energy (bitumen) results for the year ended December 31, 2018 are included from June 1, 2018.
- (3) Production estimates for 2019 represent the midpoint of our production guidance range.

Average commodity prices and exchange rates for the past three years, which are key drivers of our profit, are summarized in the following table.

	US\$					CAD\$				
	2018	% chg	2017	% chg	2016	2018	% chg	2017	% chg	2016
Steelmaking coal (realized — \$/tonne) ⁽¹⁾	187	+7%	174	+51%	115	243	+8%	226	+48%	153
Copper (LME cash — \$/pound)	2.96	+6%	2.80	+27%	2.21	3.84	+5%	3.64	+24%	2.94
Zinc (LME cash — \$/pound)	1.33	+2%	1.31	+38%	0.95	1.72	+1%	1.70	+35%	1.26
Blended bitumen (realized — \$/barrel) ⁽²⁾	35.12	—	—	—	—	46.14	—	—	—	—
Exchange rate (Bank of Canada)										
US\$1 = CAD\$	1.30	0%	1.30	-2%	1.33					
CAD\$1 = US\$	0.77	0%	0.77	+2%	0.75					

Notes:

- (1) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.
- (2) Energy (bitumen) results for the year ended December 31, 2018 are included from June 1, 2018.

Our revenues, gross profit before depreciation and amortization, and gross profit by business unit for the past three years are summarized in the following table.

(\$ in millions)	Revenues ⁽²⁾			Gross Profit Before Depreciation and Amortization ⁽¹⁾⁽²⁾			Gross Profit (Loss) ⁽²⁾		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Steelmaking coal	\$ 6,349	\$ 6,014	\$ 4,144	\$ 3,770	\$ 3,732	\$ 2,007	\$ 3,040	\$ 3,014	\$ 1,379
Copper	2,714	2,400	2,007	1,355	1,154	788	877	586	190
Zinc	3,094	3,496	3,147	1,085	1,173	984	869	967	830
Energy ⁽³⁾	407	—	2	(106)	—	2	(165)	—	(3)
Total	\$ 12,564	\$ 11,910	\$ 9,300	\$ 6,104	\$ 6,059	\$ 3,781	\$ 4,621	\$ 4,567	\$ 2,396

Notes:

- (1) Non-GAAP Financial Measure. See "Use of Non-GAAP Financial Measures" section for further information.
- (2) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.
- (3) Energy (bitumen) results for the year ended December 31, 2018 are included from June 1, 2018.

Steelmaking Coal

In 2018, our six steelmaking coal operations in Western Canada produced 26.2 million tonnes of coal, with sales of 26.0 million tonnes. The majority of our sales are to the Asia-Pacific region, with lesser amounts going primarily to Europe and the Americas. Our long-term production capacity is approximately 27 million tonnes, and we have total proven and probable reserves of 883 million tonnes of steelmaking coal.

In 2018, Coal Mountain Operations production declined as it reached the end of its mine reserve. However, favourable geology at Coal Mountain will allow for the mining and processing of a small amount of coal in the first quarter of 2019. In addition, throughout 2018, we hauled a portion of raw coal from Elkview Operations to Coal Mountain Operations for processing and we anticipate that practice to continue through at least the first quarter of 2019.

In 2018, our steelmaking coal business unit accounted for 50% of revenue and 62% of gross profit before depreciation and amortization.

(\$ in millions)	2018	2017	2016
Revenues ⁽²⁾	\$ 6,349	\$ 6,014	\$ 4,144
Gross profit before depreciation and amortization ⁽¹⁾⁽²⁾	\$ 3,770	\$ 3,732	\$ 2,007
Gross profit ⁽²⁾	\$ 3,040	\$ 3,014	\$ 1,379
Production (million tonnes)	26.2	26.6	27.6
Sales (million tonnes) ⁽²⁾	26.0	26.5	27.0

Notes:

(1) Non-GAAP Financial Measure. See "Use of Non-GAAP Financial Measures" section for further information.

(2) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Operations

Gross profit before depreciation and amortization increased slightly to \$3.8 billion in 2018. Gross profit was \$3.0 billion in 2018, similar to 2017, as higher prices were mostly offset by lower sales volumes and higher unit operating costs.

Our average realized selling price in 2018 increased to US\$187 per tonne, compared with US\$174 per tonne in 2017 and US\$115 per tonne in 2016.

Sales volumes were 26.0 million tonnes in 2018, slightly lower than 26.5 million tonnes sold in 2017. Sales volumes of steelmaking coal were negatively affected by logistical issues throughout the supply chain during the year.

Our 2018 production of 26.2 million tonnes was 400,000 tonnes less than 2017, primarily due to declining production at Coal Mountain Operations as it reached the end of its current reserve life. In the first quarter of 2018, a pressure event in the coal dryer at Elkview Operations affected production. However, it was fully recovered in subsequent quarters by hauling a portion of raw coal from Elkview Operations to Coal Mountain Operations for processing.

The cost of product sold in 2018, before transportation and depreciation, was \$62 per tonne, compared with \$52 per tonne in 2017. This cost increase was a result of increased mining activity, equipment rentals and associated labour to generate production to capture margin in a favourable coal price environment. In addition, the business unit experienced inflationary pressures, predominantly affecting diesel costs, the result of higher oil prices. All of these factors, combined with slightly lower production, longer haul distances and increased activity on mobile maintenance, increased the unit cost per tonne, but have not undermined our strong profitability.

Capital spending in 2018 included \$232 million for sustaining capital, \$140 million for major enhancements to maintain and increase long-term production capacity, and \$90 million for the Neptune Bulk Terminals upgrade.

Elk Valley Water Management

We continue to implement the water quality management measures required by the Elk Valley Water Quality Plan (the Plan), an Area-Based Management Plan approved in 2014 by the B.C. Minister of Environment. The Plan establishes short-, medium- and long-term water quality targets for selenium, nitrate, sulphate and cadmium to protect the environment and human health, as well as a plan to manage calcite formation. In accordance with the Plan, we have constructed and are operating the first active water treatment facility (AWTF) at West Line Creek.

In the fourth quarter, we commissioned an additional treatment step to address an issue regarding selenium compounds in effluent from the West Line Creek AWTF. The facility is operating as designed. We have commenced construction on our next AWTF at Fording River Operations, which will use the same treatment process as the modified West Line Creek AWTF.

In 2018, we successfully operated our first saturated rock fill (SRF) project at our Elkview Operations. The SRF has been in operation for the past 12 months and is demonstrating near-complete removal of nitrate and selenium from the feed water. Results to date from the full-scale trial show that the technology has the potential to replace future AWTFs, as well as to reduce capital and operating costs for water treatment. We are working to increase the capacity of the Elkview SRF to potentially reduce reliance on active water treatment. This approach has not yet received necessary approvals and we continue to progress the construction of additional AWTFs to comply with the Plan.

Capital spending on water treatment in 2019 is expected to be approximately \$235 million, including advancing a clean water diversion at Fording River, application of SRF technology at Elkview, construction of Fording River South AWTF, and advancing management of calcite and the early development of water treatment for Fording River North. This compares to approximately \$57 million of capital spending on water treatment in 2018.

In our previous guidance, we estimated total capital spending for water treatment between 2018 and 2022 of \$850 to \$900 million. We intend to complete construction of the Fording River South AWTF, currently under construction. If we are successful in permitting SRF projects to replace the Elkview AWTF and Fording River North AWTF, we estimate that total capital spending on water treatment during this period would reduce to \$600 to \$650 million. If no reduction in AWTF capacity is permitted, overall capital in the same period would increase by approximately \$250 million over our previous guidance, as a result of engineering scope changes at the Elkview AWTF and an increased volume of water treated at Fording River North. We have

presented regulators with evidence that SRFs are a viable technical alternative to active water treatment, and are working through a review process. We expect that this process will result in a decision in the first half of 2019.

We continue to advance research and development, including the SRF technology. We estimate that over the longer term, SRFs will have capital and operating costs that are 20% and 50%, respectively, of AWTFs of similar capacity. If we are successful in replacing a substantial portion of active water treatment capacity with SRFs, we believe that our long-term operating costs associated with water treatment could be reduced substantially.

All of the foregoing estimates are uncertain. Final costs of implementing the Plan will depend in part on the technologies applied and on the results of ongoing environmental monitoring and modelling. The timing of expenditures will depend on resolution of technical issues, permitting timelines and other factors. We expect that, in order to maintain water quality, some form of water treatment will continue for an indefinite period after mining operations end. The Plan contemplates ongoing monitoring to ensure that the water quality targets set out in the Plan are in fact protective of the environment and human health, and provides for adjustments if warranted by monitoring results. This ongoing monitoring, as well as our continued research into treatment technologies, could reveal unexpected environmental impacts, technical issues or advances associated with potential treatment technologies that could substantially increase or decrease both capital and operating costs associated with water quality management.

During the third quarter of 2018, we received notice from Canadian federal prosecutors of potential charges under the *Fisheries Act* in connection with discharges of selenium and calcite from coal mines in the Elk Valley. Since 2014, compliance limits and site performance objectives for selenium and other constituents, as well as requirements to address calcite, in surface water throughout the Elk Valley and in the Koochanusa Reservoir have been established under a regional permit issued by the provincial government, which references the Plan. If federal charges are laid, potential penalties may include fines as well as orders with respect to operational matters. We expect that discussions with respect to the draft charges will continue at least into the third quarter of 2019. It is not possible at this time to fully assess the viability of our potential defences to any charges, or to estimate the potential financial impact on us of any conviction. Nonetheless, that impact may be material.

Rail

Rail transportation of product from our five steelmaking coal mines in southeast B.C. to Vancouver port terminals is provided under a 10-year agreement with CP Rail, which expires March 31, 2021. Most eastbound coal deliveries to North American customers are shipped pursuant to an arrangement with CP Rail. The remaining eastbound coal deliveries are shipped via the BNSF Railway. Our Cardinal River Operations in Alberta is served by Canadian National Railway (CN), which transports our product to ports on the west coast. Currently, Teck is shipping under tariff with CN.

Ports

We maintain access to terminal loading capacity in excess of our planned 2019 shipments. We continue to progress a facility upgrade at the Neptune Bulk Terminals, which will increase terminal loading capacity. In 2018, we invested \$90 million on the project, primarily in the third and fourth quarters. The program includes an additional \$210 million to be spent in 2019 and approximately \$170 million in 2020. The upgrades are expected to be completed in the third quarter of 2020.

In addition, our contract with Westshore Terminals, which expires March 31, 2021, provides us with 19 million tonnes of annual capacity, and we have contracted capacity at Ridley Terminals near Prince Rupert. We are exploring additional options for coal shipments following the expiration of our contract with Westshore Terminals in 2021.

Sales

Our steelmaking coal marketing strategy is focused on maintaining and building relationships with our traditional customers, while establishing new customers in markets where we anticipate long-term growth in steel production and demand for seaborne steelmaking coal. In 2018, we continued to focus our marketing in areas with the greatest demand growth, increasing sales volumes to areas such as India and Southeast Asia.

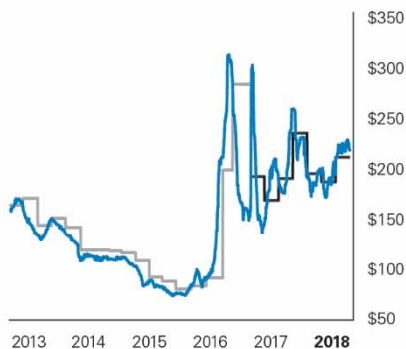
Markets

Global steel production and demand for seaborne steelmaking coal continued to be strong in 2018. The World Steel Association reported that global steel production increased by 4.6% in 2018 compared to 2017. This was due to resilient steel pricing and demand supported by the recovery in investment activities in developed economies and the improved performance of emerging economies. Depletion and reduced production of some Eastern European coal mines continued to increase demand from European steel mills for seaborne steelmaking coal.

The following graphs show key metrics affecting steelmaking coal sales: spot price assessments and quarterly pricing, hot metal production (each tonne of hot metal, or pig iron, produced requires approximately 650–700 kilograms of steelmaking coal), and China’s steelmaking coal imports by source.

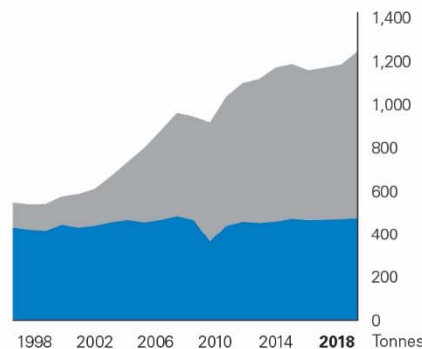
Daily Steelmaking Coal Assessments

Source: Argus



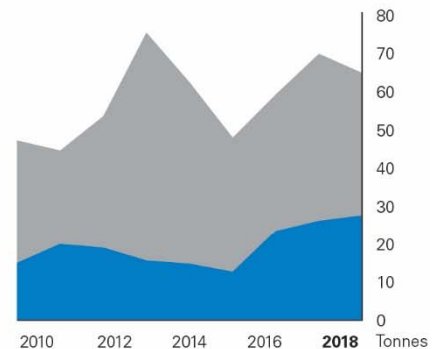
Hot Metal (Pig Iron) Production

Source: World Steel Association, National Bureau of Statistics of China



China Steelmaking Coal Imports

Source: China’s Customs



- Spot price assessments (US\$ per tonne FOB Australia)
- Quarterly benchmark (US\$ per tonne FOB Australia)
- Quarterly index-linked price (US\$ per tonne FOB Australia)

- Rest of the world (tonnes in millions)
- China (tonnes in millions)

- Landborne (tonnes in millions)
- Seaborne (tonnes in millions)

Outlook

Market expectations are that global steel production and demand for steelmaking coal will remain strong in 2019. A robust steelmaking coal market is supported by the demand effect of continued steel capacity growth

in India and Southeast Asia, the relocation of steel production to coastal areas in China, as well as concerns regarding supply from Australia and the U.S. While demand for steelmaking coal remains strong, pricing has softened somewhat since the beginning of 2019, reflecting shorter vessel queues in Australia and the relaxation of import restrictions in China, which were imposed from November 2018. We continue to monitor the effects that government policy and trade uncertainty might have on potential price volatility.

Steelmaking coal production in 2019 is expected to be between 26.0 and 26.5 million tonnes. We will continue to evaluate raw coal processing opportunities to capture the latent production capacity of our Elk Valley processing plants in 2019. As in prior years, annual production volumes can be adjusted to reflect market demand for our products, subject to adequate rail and port service. Assuming that current market conditions persist, annual production from 2020 to 2022 is expected to be higher than 2019, despite the closure of our Coal Mountain Operations in early 2019.

We continue to advance mining in new areas at our Fording River, Elkview and Greenhills operations, which will extend the lives of these mines and allow us to increase production to compensate for the closure of Coal Mountain. We are investing in processing plants and have transferred mining equipment from Coal Mountain in order to develop the new mining areas at each of these sites. As part of our strategy to maintain production capacity of approximately 27 million tonnes in the Elk Valley, Elkview Operations is well positioned for expansion. The operation is anticipating a higher strip ratio in 2019, with a natural reduction of strip ratios over the next three to five years. The reduction in strip ratios will provide opportunity for a low capital-intensity investment in plant throughput capacity to capitalize on the increased raw coal release beyond 2019 for increasing production.

Although coal prices have softened somewhat since the beginning of 2019, market fundamentals remain supportive for strong coal pricing levels. We are expecting 2019 first quarter sales to reach approximately 6.1 to 6.3 million tonnes. As always, our sales may vary depending on the performance of our logistics chain.

Customers determine vessel nominations for the majority of our sales. Final sales and average prices for the quarter will depend on product mix, market direction for spot priced sales and timely arrival of vessels, as well as the performance of the rail transportation network and port loading facilities.

In December, we experienced poor performance across the supply chain due to underperformance in rail, material handling issues and high wind events in Vancouver. Logistical challenges continued in January, including unplanned dumper outages at Westshore Terminals, which affected train unloading and negatively affected supply chain performance. Performance has improved since late January, but these factors continue to present a risk to our quarterly sales guidance.

We expect our site unit costs to be in the range of \$62 to \$65 per tonne in 2019. This range is slightly higher than in 2018, primarily as the result of the efforts described above to maintain total production after the closure of Coal Mountain, which will require the use of additional equipment, diesel and labour. We expect quarterly cost of sales to fluctuate in 2019, with higher cost of sales in the second and third quarter when our operations are scheduled to complete major plant maintenance outages.

Transportation costs in 2019 are expected to remain consistent at approximately \$37 to \$39 per tonne.

We invested approximately \$7.5 million in 2018 to continue to evaluate the MacKenzie Redcap detailed design study at our Cardinal River Operations and will be continuing this evaluation in 2019. The MacKenzie Redcap development is expected to supply approximately 1.8 million tonnes of steelmaking coal production

per year and has the potential to extend production at Cardinal River to approximately 2027, beyond the planned closure in 2020. Beyond 2020, this additional tonnage would add to the current longer-term planned production capacity of approximately 27 million tonnes in the Elk Valley.

We expect sustaining capital expenditures for our steelmaking coal operations to be approximately \$485 million in 2019, including approximately \$235 million related to water treatment and \$250 million for ongoing operations. Sustaining capital expenditures largely relate to reinvestment in our equipment fleets. In addition, approximately \$200 million will be invested in major enhancement projects in 2019, primarily relating to the development of the new mining areas at our Elk Valley operations and increasing the plant capacity at our Elkview Operations. This is expected to increase our long-term production capacity and mitigate reduced production on closure of Coal Mountain Operations.

On February 11, 2019, we agreed with Poscan, pursuant to a reopener in the Greenhills joint venture agreement, to increase the royalty paid by Poscan in respect of its 20% share of Greenhills' coal production. At current benchmark coal prices of approximately US\$200 tonne, the royalty payment will increase by approximately \$90 million annually. At current exchange rates, a US\$10 per tonne increase or decrease in the coal price would increase or decrease the annual royalty by approximately \$4 million. The new royalty remains in effect until December 31, 2022.

Copper

In 2018, we produced 293,900 tonnes of copper from our Highland Valley Copper Operations in B.C., our 22.5% interest in Antamina in Peru, and our Carmen de Andacollo and Quebrada Blanca operations in Chile. Copper production rose by 2% from 2017, as higher production from Highland Valley Copper, Antamina and Quebrada Blanca was partially offset by lower production from Carmen de Andacollo as a result of declining ore grades.

In 2018, our copper operations accounted for 22% of our revenue and 22% of our gross profit before depreciation and amortization.

(\$ in millions)	Revenues			Gross Profit (Loss) Before Depreciation and Amortization ⁽¹⁾⁽²⁾			Gross Profit (Loss) ⁽²⁾		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Highland Valley Copper	\$ 941	\$ 733	\$ 750	\$ 343	\$ 213	\$ 268	\$ 164	\$ 18	\$ 86
Antamina	1,061	936	627	794	670	409	652	534	305
Carmen de Andacollo	488	549	401	193	222	86	121	142	9
Quebrada Blanca	224	182	229	26	50	24	(59)	(107)	(211)
Other	–	–	–	(1)	(1)	1	(1)	(1)	1
Total	\$ 2,714	\$ 2,400	\$ 2,007	\$ 1,355	\$ 1,154	\$ 788	\$ 877	\$ 586	\$ 190

Notes:

(1) Non-GAAP Financial Measure. See "Use of Non-GAAP Financial Measures" section for further information.

(2) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

(thousand tonnes)	Production			Sales		
	2018	2017	2016	2018	2017	2016
Highland Valley Copper	101	93	119	103	89	122
Antamina	100	95	97	99	94	95
Carmen de Andacollo	67	76	73	64	77	73
Quebrada Blanca	26	23	35	26	23	35
Total	294	287	324	292	283	325

Operations

Highland Valley Copper

Our Highland Valley Copper Operations is located in south-central B.C. Gross profit before depreciation and amortization was \$343 million in 2018, compared to \$213 million in 2017 and \$268 million in 2016. Gross profit was \$164 million in 2018, compared with \$18 million in 2017, due to higher production and sales volumes as a result of improved copper ore grades and recoveries, and higher copper and molybdenum prices, partially offset by higher operating costs.

Highland Valley Copper's 2018 copper production was 100,800 tonnes, compared to 92,800 tonnes in 2017 and 119,300 tonnes in 2016. The increase was primarily due to significantly higher copper grades and higher recoveries in the first half of 2018 compared to early 2017. Copper and molybdenum ore grades declined as expected in the second half of 2018 as we mined ore from lower-grade sections of the Lornex and Valley pits as anticipated in the mine plan. Molybdenum production was 6% lower in 2018 at 8.7 million pounds,

compared to 9.3 million pounds in 2017, primarily due to lower molybdenum grades.

A \$73 million project to install an additional ball mill to increase grinding circuit capacity is progressing on budget and on schedule, with start-up anticipated in the third quarter of 2019. An autonomous haulage pilot project was successfully started during the second half of 2018 in the Lornex pit, with six autonomous haul trucks now fully operational. We also continued studies to assess the potential economic viability of extending the Highland Valley Copper mine life to 2040.

Copper production in 2019 is anticipated to be between 115,000 and 120,000 tonnes, with a relatively even distribution throughout the year. Annual copper production from 2020 to 2022 is expected to be between 135,000 and 155,000 tonnes per year, increasing from the low end to high end of the range during the three-year period. Copper production is anticipated to average about 150,000 tonnes per year after 2022, through to the end of the current mine plan in 2028. Molybdenum production in 2019 is expected to be approximately 6.0 million pounds contained in concentrate, with annual production expected to decline to between 4.0 million and 5.0 million pounds per year afterwards.

Antamina

We have a 22.5% share interest in Antamina, a copper-zinc mine in Peru. The other shareholders are BHP Billiton plc (33.75%), Glencore plc (33.75%) and Mitsubishi Corporation (10%). In 2018, our share of gross profit before depreciation and amortization was \$794 million, compared with \$670 million in 2017 and \$409 million in 2016. Gross profit in 2018 was \$652 million, compared with \$534 million in 2017 and \$305 million in 2016. Gross profit in 2018 increased from 2017 due to higher copper and zinc prices, as well as record production levels of total copper and zinc concentrates of 2.4 million tonnes in 2018.

Antamina's copper production (100% basis) in 2018 was 446,100 tonnes, compared to 422,500 tonnes in 2017, with the increase primarily as a result of higher copper grades. Zinc production was 409,300 tonnes in 2018, an increase from 372,100 tonnes of production in 2017, primarily due to a higher portion of copper-zinc ores processed in 2018. In 2018, molybdenum production was 10.2 million pounds, which was 17% higher than in 2017.

Pursuant to a long-term streaming agreement made in 2015, Teck delivers an equivalent to 22.5% of payable silver sold by Compañía Minera Antamina S.A. to a subsidiary of Franco-Nevada Corporation (FNC). FNC pays a cash price of 5% of the spot price at the time of each delivery, in addition to an upfront acquisition price previously paid. In 2018, approximately 3.2 million ounces of silver were delivered under the agreement. After 86 million ounces of silver have been delivered under the agreement, the stream will be reduced by one-third. A total of 13.2 million ounces of silver have been delivered under the agreement from the effective date in 2015 to December 31, 2018.

Our 22.5% share of Antamina's 2019 production is expected to be in the range of 95,000 to 100,000 tonnes of copper, 65,000 to 70,000 tonnes of zinc and approximately 2.0 million pounds of molybdenum in concentrate. Our share of copper production is expected to be between 90,000 and 95,000 tonnes per year from 2020 to 2022. The lower zinc production in 2019 is a result of mine sequencing, and is expected to return to higher production levels after 2019 with higher grades and a higher proportion of copper-zinc ore to process. Our share of zinc production is expected to average between 100,000 and 110,000 tonnes per year from 2020 to 2022, although annual production will fluctuate due to feed grades and the amount of copper-zinc ore processed. Our share of annual molybdenum production is expected to be between 2.0 and 3.0

million pounds per year between 2020 and 2022.

Carmen de Andacollo

We have a 90% interest in the Carmen de Andacollo mine, which is located in the Coquimbo Region of central Chile. The remaining 10% is owned by Empresa Nacional de Minería (ENAMI), a state-owned Chilean mining company. Gross profit before depreciation and amortization was \$193 million in 2018, compared to \$222 million in 2017 and \$86 million in 2016. Gross profit decreased to \$121 million from \$142 million in 2017, primarily due to lower copper production and sales volumes.

Carmen de Andacollo produced 63,500 tonnes of copper contained in concentrate in 2018, compared to 72,500 tonnes in 2017. This was primarily due to lower grades as anticipated in the mine plan, partially offset by higher mill throughput. Mill throughput was a record 4.93 million tonnes in the fourth quarter. Copper cathode production was 3,700 tonnes in 2018, compared with 3,500 tonnes in 2017. Gold production of 59,600 ounces in 2018 was higher than the 54,500 ounces produced in 2017, with 100% of the gold produced for the account of RGLD Gold AG, a wholly owned subsidiary of Royal Gold, Inc. In effect, 100% of gold production from the mine has been sold to Royal Gold, Inc., who pays a cash price of 15% of the monthly average gold price at the time of each delivery, in addition to an upfront acquisition price previously paid.

Consistent with the mine plan, copper grades are expected to continue to decline towards reserve grades in 2019 and future years. We continue to study and implement projects that could help to increase production, including the installation of a sizer to better manage harder ores at depth and increase mill throughput. The sizer project is anticipated to be operational in the first half of 2019 and is included in our production guidance. Carmen de Andacollo's production in 2019 is expected to be in the range of 60,000 to 65,000 tonnes of copper in concentrate and approximately 2,000 tonnes of copper cathode. Annual copper in concentrate production is expected to be approximately 60,000 tonnes from 2020 to 2022. Cathode production volumes are uncertain past 2019, although there is some potential to extend production.

Quebrada Blanca

Quebrada Blanca Operations is located in the Tarapacá Region of northern Chile. In April 2018, we increased our interest in Quebrada Blanca to 90% by acquiring an additional indirect 13.5% interest in Compañía Minera Teck Quebrada Blanca S.A. (QBSA) through the purchase of Inversiones Mineras S.A. The purchase price consisted of US\$52.5 million paid in cash on closing, an additional payment of US\$60 million paid on approval of the social and environmental impact assessment for the Quebrada Blanca Phase 2 (QB2) project and the expiry of certain appeal rights, and a further US\$50 million paid within 30 days of the commencement of commercial production at QB2. Additional amounts may become payable to the extent that average copper prices exceed US\$3.15 per pound in each of the first three years following commencement of commercial production, up to a cumulative maximum of US\$100 million if commencement of commercial production occurs prior to January 21, 2024, or up to a lesser maximum in certain circumstances thereafter.

The other shareholder of QBSA is ENAMI, a Chilean state agency, which holds a 10% preference share interest in QBSA that does not require ENAMI to fund capital spending.

Since the first quarter of 2017, all supergene ore mined has been sent directly to the dump leach circuit. This has resulted in lower recovery and a longer leaching cycle at reduced operating costs, compared to the

previous operations of the heap leach circuit. Mining of the supergene was expected to end in the second quarter of 2018, but continued until the fourth quarter due to an extension in the mine plan. Mining equipment and personnel have been redeployed to the QB2 project, and the operation is now focused on leaching the dump material and secondary extraction.

Quebrada Blanca produced 25,500 tonnes of copper cathode in 2018, compared to 23,400 tonnes in 2017, with the increase primarily due to increased production from secondary leaching.

Quebrada Blanca's gross profit before depreciation and amortization was \$26 million in 2018, compared to \$50 million in 2017 and \$24 million in 2016. Quebrada Blanca incurred a gross loss of \$59 million, compared to \$107 million in 2017. The improvement in 2018 related to a reduction in depreciation and amortization charges due to the asset impairment charge taken in 2017. However, after depreciation and amortization, a gross loss was recorded in both 2018 and 2017.

We expect production of approximately 20,000 to 23,000 tonnes of copper cathode in 2019. We expect cathode production to carry on into early 2020.

Quebrada Blanca Phase 2

The Quebrada Blanca Phase 2 (QB2) project is one of the world's largest undeveloped copper resources. QB2 is expected to have low operating costs, an initial mine life of 28 years, and significant potential for further growth.

The social and environmental impact assessment (SEIA) for the QB2 project was approved in August 2018. The Chile Environmental Evaluation Commission unanimously voted to approve the project on August 8, 2018. The final regulatory approval document, or RCA, was received on August 29, 2018. Long-term community agreements have been reached with all Indigenous communities involved in the evaluation. As expected, various administrative and legal appeals have been filed in respect of the SEIA approval, and QBSA and the relevant Chilean authorities are responding in the ordinary course.

In December, our Board of Directors approved the QB2 project for full construction and we announced a transaction with Sumitomo Metal Mining Co., Ltd. (SMM) and Sumitomo Corporation (SC) to subscribe for a 30% indirect interest in QBSA, which owns 100% of the QB2 project. The consideration payable by SMM and SC consists of a US\$1.2 billion contribution for a 30% indirect interest in QBSA, US\$50 million to Teck if QB2 achieves optimized target mill throughput of 154,000 tonnes per day by December 31, 2025, subject to adjustment; and a contingent contribution of 12% of the incremental NPV of a major expansion project (QB3) upon approval of construction, subject to adjustment (8% contingent earn-in contribution, 4% matching contribution). Closing of the transaction is subject to customary conditions precedent, including receipt of necessary regulatory approvals, and is now expected to occur before the end of March 2019.

On announcement of the transaction with SMM/SC, the Teck Board approved the QB2 project for full construction. Project development expenditures for 2019 are anticipated to be approximately US\$1,460 million. After the transaction proceeds have been expended, Teck and SMM/SC will fund the balance of project costs with proceeds from the expected US\$2.5 billion of project financing and pro rata contributions from Teck and SMM/SC on a 66.67% and 33.33% basis, respectively. ENAMI is not required to provide funding toward the capital cost of QB2. Teck and SMM/SC are in discussions with export credit agencies and commercial banks with respect to a proposed limited recourse project finance facility of up to US\$2.5 billion.

The combination of the contributions by SMM and SC from the transaction and proposed project financing reduces Teck's share of equity contributions toward the un-escalated US\$4.739 billion¹ estimated capital cost of the QB2 project to US\$693 million² with Teck's first contributions post-closing not required until late 2020. The target date for project completion and the start of commissioning and ramp-up is the fourth quarter of 2021. Full production is expected in the middle of 2022.

On a 100% basis, average annual copper-equivalent production of QB2 over the first five full years of operation is estimated at 316,000 tonnes. The mine plan is constrained by the current capacity of the tailings facility and exploits less than 25% of the total defined reserve and resource. The significant resource outside the current mine plan provides the potential for expansions in future years and the mine facilities have been designed with this in mind. The project scope includes the construction of a 143,000-tonne-per-day concentrator and related facilities, which are connected to a new port and desalination plant by 165-kilometre concentrate and desalinated water pipelines.

Project development expenditures during 2018 were approximately US\$317 million. During the fourth quarter we started to ramp up field activities and release major contracts. There are currently about 2,000 beds available for construction, with the current construction workforce already over 1,000 people. Earthworks activities are fully underway, including utilizing the existing mine fleet and third-party contractors, as well as other enabling construction activities including camp construction and development of infrastructure for power and water. Other project activities during the year focused on advancing detailed engineering, procurement and contracting activities to support construction as well as advancing operational readiness.

Engineering studies are also underway to assess the expansion potential beyond QB2, including a potential doubling of throughput capacity in the future.

NuevaUnión

Compañía Minera NuevaUnión S.A., which owns the Relincho and La Fortuna projects, is owned 50% by Teck and 50% by Goldcorp Inc. A prefeasibility study (PFS) on the NuevaUnión project was completed in early 2018, which incorporates key design changes from the earlier scoping study to improve project economics and respond to community and Indigenous Peoples' input.

The PFS estimates an initial capital cost for the Phase 1 development of the project on a 100% basis of US\$3.4 to US\$3.5 billion (not including working capital or interest during construction). Phase 2 development of the project will require additional capital investment to link the La Fortuna site to the processing facility. Mining the higher-grade portions of Relincho in Phase 1 will allow the project to help fund Phase 2 from project cash flows. Initial production from the La Fortuna mine in Phase 2 will also focus on higher-grade areas, providing significant cash flows in the early years of this phase. As a result, the PFS contemplates average annual production of 224,000 tonnes of copper, 269,000 ounces of gold and 1,700 tonnes of molybdenum in concentrate for the first five full years of mine life, or approximately 283,000 tonnes per year of copper-equivalent production.

¹ On a 100% go-forward basis from January 1, 2019 in constant Q2 2017 dollars and a CLP/USD exchange rate of 625, not including escalation (estimated at US\$300–\$470 million based on 2%–3% per annum inflation), working capital or interest during construction. Includes approximately US\$500 million in contingency. At the current spot CLP/USD rate of approximately 675, capital would be reduced by approximately US\$270 million.

² On a go-forward basis from January 1, 2019. Assumes US\$2.5 billion in project finance loans and without deduction of fees and interest during construction, and US\$1.2 billion contribution from SMM and SC.

A feasibility study (FS) commenced in the third quarter of 2018 and is anticipated to be complete in late 2019. The project team continues to work closely with the local communities and is preparing to submit an Environmental Impact Assessment (EIA) to the regulatory authorities in the second half of 2019. Detailed project economics will be released with the completion of the FS.

Project Satellite

The objective of the Project Satellite initiative is to surface value from five substantial base metals assets: Zafranal, San Nicolás, Galore Creek, Mesaba and Schaft Creek, all of which are located in stable jurisdictions in the Americas.

At the Zafranal copper-gold project in southern Peru, the project team significantly advanced its activities in support of a feasibility study, which we expect to complete in the first half of 2019. We expect to submit the SEIA in the second quarter of 2019, which is approximately two quarters later than originally planned as a result of the requirement to complete detailed pre-reviews with the regulator prior to submission. Spending in 2018 was \$29.4 million and planned spending in 2019 is \$39.7 million.

At the San Nicolás copper-zinc-silver-gold project in Zacatecas, Mexico, a significant drill program was completed, which included infill, geotechnical, hydrogeological, exploration and condemnation drillholes. In addition, the project team advanced social and environmental baseline studies, community engagement activities, preliminary hydrogeological studies and project engineering programs in support of a prefeasibility study (PFS) and early permitting activities. We expect the PFS to be complete in the fourth quarter of 2019. Spending in 2018 was \$18.2 million and planned spending in 2019 is \$25.6 million.

At the Galore Creek copper-gold-silver project in British Columbia, Newmont Mining Corporation acquired NOVAGOLD Resources Inc.'s 50% interest in the Galore Creek Partnership in July 2018. Since Newmont's entry into the partnership, subject matter experts from both Newmont and Teck have worked together to develop the scope of fieldwork programs and prefeasibility study work to be carried out over the next three to four years. Program work in 2018 focused on maintaining the mineral properties and carrying out preliminary geological mapping, prospecting and mineral deposit studies. Our share of spending in 2018 was \$4.6 million and our share of planned spending in 2019 is \$19.2 million.

At the Mesaba copper-nickel-platinum group metals-cobalt deposit in northeastern Minnesota, the project team completed a range of planning activities, preliminary development and environmental studies, and mineral resource estimate work. Spending in 2018 was \$6.4 million and planned spending in 2019 is \$13.5 million.

Markets

Copper prices on the London Metal Exchange (LME) averaged US\$2.96 per pound in 2018, up US\$0.16 per pound from average prices in 2017.

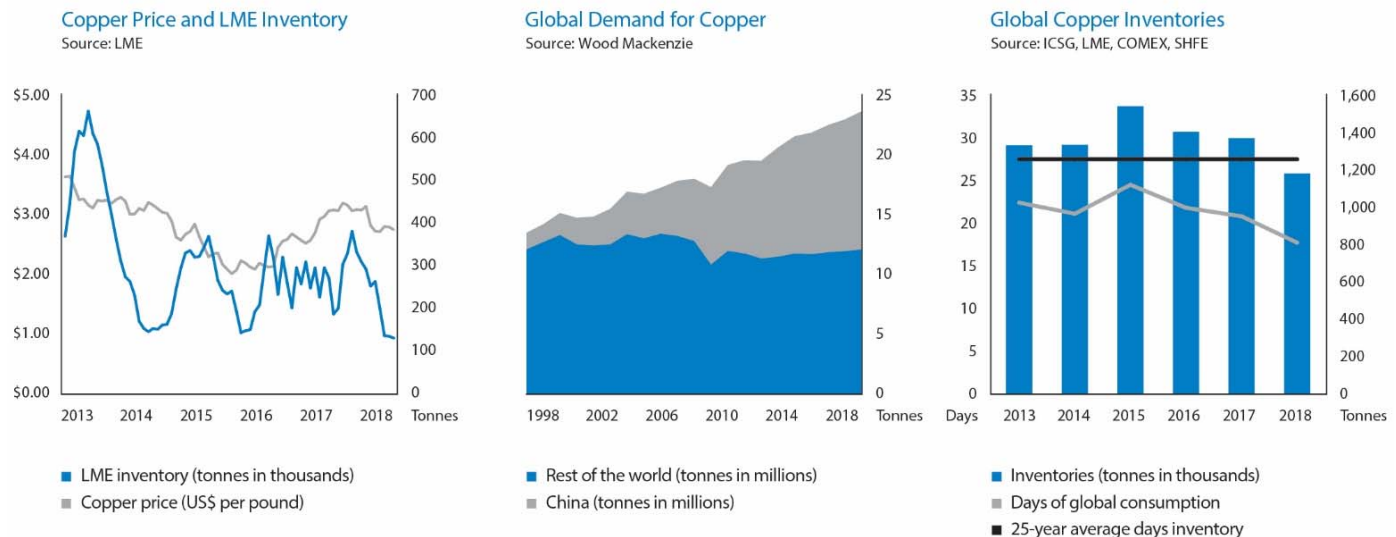
Copper stocks on the LME fell by 35% to 132,200 tonnes in 2018, while copper stocks on the Shanghai Futures Exchange fell by 21% to 118,700 tonnes and COMEX warehouse stocks fell 54% to 84,900 tonnes. Combined exchange stocks decreased by 197,700 tonnes during 2018 and ended the year at 335,800 tonnes, the lowest levels since 2014. Total reported global stocks, including producer, consumer, merchant and terminal stocks, stood at an estimated 17.3 days of global consumption versus the 25-year average of

28 days.

In 2018, global copper mine production increased 2.8% according to Wood Mackenzie, a commodity research consultancy, with total production estimated at 20.6 million tonnes. While the industry experienced several disruptions at large mines in 2017, production at these mines achieved expected production levels in 2018, and, despite a large number of labour contracts expiring in 2018, most settled without incident. Wood Mackenzie is forecasting a 0.3% increase in global mine production in 2019 to 20.7 million tonnes.

Copper scrap availability decreased in 2018 as global trade patterns were disrupted by environmental restrictions on certain types of scrap imports into China. Scrap and unrefined copper imports into China, including blister and anode, were down 15% year over year to September 2018.

Wood Mackenzie estimates that global refined copper production grew 2.5% in 2018, below the 3.0% growth rate for global copper cathode demand. They are projecting that refined production will increase 1.6% in 2019, reaching 23.9 million tonnes. Fundamentals for copper are expected to remain positive over the medium to long term, with mine supply constrained by lower grades and a lack of investment in new mine projects. Wood Mackenzie are forecasting that global copper metal demand will increase by 2.5% in 2019, reaching 24.3 million tonnes, suggesting the refined copper market will be in deficit again in 2019.



Outlook

We expect 2019 copper production to be in the range of 290,000 to 310,000 tonnes, slightly higher than 2018 production levels. The higher production is primarily due to improving grades at Highland Valley Copper.

In 2019, we expect our copper unit costs to be in the range of US\$1.70 to US\$1.80 per pound before margins from by-products, similar to 2018 levels. Copper unit costs are expected to be in the range of US\$1.45 to US\$1.55 per pound after by-products based on current production plans, by-product prices and exchange rates, an increase from 2018 due to expected lower by-product prices in 2019.

We expect annual copper production to be in the range of 285,000 to 305,000 tonnes from 2020 to 2022, excluding QB2, which is scheduled for first production in late 2021 and is expected to add substantially to our overall copper production in 2022.

Zinc

We are one of the world's largest producers of mined zinc, primarily from our Red Dog Operations in Alaska, the Antamina copper mine in northern Peru (where zinc is a co-product) and our Pend Oreille mine in Washington state. Our metallurgical complex in Trail, B.C. is one of the world's largest integrated zinc and lead smelting and refining operations. In 2018, we produced 705,000 tonnes of zinc in concentrate, while our Trail Operations produced 302,900 tonnes of refined zinc.

In 2018, our zinc business unit accounted for 25% of revenue and 18% of gross profit before depreciation and amortization.

(\$ in millions)	Revenues			Gross Profit (Loss) Before Depreciation and Amortization ⁽¹⁾			Gross Profit (Loss)		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Red Dog	\$ 1,696	\$ 1,752	\$ 1,444	\$ 990	\$ 971	\$ 749	\$ 864	\$ 874	\$ 668
Trail Operations	1,942	2,266	2,049	91	209	241	16	131	178
Pend Oreille	98	105	77	(5)	19	–	(20)	(12)	(10)
Other	8	8	7	9	(26)	(6)	9	(26)	(6)
Intra-segment	(650)	(635)	(430)	–	–	–	–	–	–
Total	\$ 3,094	\$ 3,496	\$ 3,147	\$ 1,085	\$ 1,173	\$ 984	\$ 869	\$ 967	\$ 830

Note:

(1) Non-GAAP Financial Measure. See "Use of Non-GAAP Financial Measures" section for further information.

(thousand tonnes)	Production			Sales		
	2018	2017	2016	2018	2017	2016
Refined zinc						
Trail Operations	303	310	312	304	309	312
Contained in concentrate						
Red Dog	583	542	583	521	534	600
Pend Oreille	30	33	34	30	32	34
Copper business unit ⁽¹⁾	92	84	45	93	85	43
Total	705	659	662	644	651	677

Note:

(1) Includes zinc production from Antamina.

Operations

Red Dog

Red Dog Operations, located in northwest Alaska, is one of the world's largest zinc mines. Red Dog's gross profit before depreciation and amortization in 2018 was \$990 million, compared with \$971 million in 2017 and \$749 million in 2016. Gross profit in 2018 was \$864 million, similar to 2017, as sales volumes and metal prices were similar year over year.

In 2018, zinc production at Red Dog increased to 583,200 tonnes compared to 541,900 tonnes in 2017, primarily due to higher zinc grades and recoveries. Lead production in 2018 declined to 98,400 tonnes,

compared to 111,300 tonnes in 2017, primarily due to lower grades and recoveries.

Work continues on the US\$110 million mill upgrade project, which is progressing as planned. Construction started in late 2017 and is expected to increase average mill throughput by about 15% over the remaining mine life, helping to offset lower grades and harder ore, with planned start-up in the first quarter of 2020.

Red Dog's location exposes the operation to severe weather and winter ice conditions, which can significantly affect production, sales volumes and operating costs. In addition, the mine's bulk supply deliveries and all concentrate shipments occur during a short ocean shipping season that normally runs from early July to late October. This short shipping season means that Red Dog's sales volumes are usually higher in the last six months of the year, resulting in significant variability in its quarterly profit, depending on metal prices.

In accordance with the operating agreement between Teck and NANA Regional Corporation, Inc. (NANA) governing the Red Dog mine, we pay a royalty on net proceeds of production each quarter. This royalty increases by 5% every fifth year to a maximum of 50%. The most recent increase occurred in October 2017, bringing the royalty to 35%. The NANA royalty charge in 2018 was US\$252 million, compared with US\$324 million in 2017. NANA has advised us that it ultimately shares approximately 60% of this royalty, net of allowable costs, with other Regional Alaska Native Corporations pursuant to section 7(i) of the *Alaska Native Claims Settlement Act*.

Red Dog's production of contained metal in 2019 is expected to be in the range of 535,000 to 555,000 tonnes of zinc and 85,000 to 90,000 tonnes of lead. From 2020 to 2022, Red Dog's production of contained metal is expected to be in the range of 500,000 to 520,000 tonnes of zinc and 85,000 to 100,000 tonnes of lead per year, respectively.

Trail Operations

Our Trail Operations in southern B.C. produces refined zinc and lead, as well as a variety of precious and specialty metals, chemicals and fertilizer products.

Trail Operations had a gross profit before depreciation and amortization of \$91 million in 2018, compared with \$209 million in 2017 and \$241 million in 2016. Gross profit was \$16 million in 2018, a decrease of \$115 million from 2017, primarily due to lower production levels, historically low treatment and refining charges, and increased electricity costs after the sale of the Waneta Dam.

The British Columbia Utilities Commission (BCUC) approved the \$1.2 billion sale of our two-thirds interest in the Waneta Dam to BC Hydro in the third quarter and closing of the sale occurred on July 26, 2018. Under our agreement with BC Hydro, we entered into a 20-year arrangement to purchase power for our Trail Operations, with an option to extend the arrangement for a further 10 years on comparable terms. This arrangement results in additional annual power costs for Trail Operations of \$75 million, escalating at 2% per year. We recognized this transaction as a disposition of the Waneta Dam and related transmission assets. We recorded a pre-tax gain, net of transaction costs of \$888 million (\$812 million after tax).

Refined zinc production in 2018 was 302,900 tonnes, compared with 310,100 tonnes in 2017. Refined lead production in 2018 was 61,000 tonnes, compared with 87,100 tonnes in 2017. The decline in refined lead production was primarily due to a planned extended maintenance shutdown of the KIVCET furnace

completed in the fourth quarter of 2018, which occurs once every four years. Additional factors included the effect of wildfire smoke that caused a temporary shutdown of some facilities in August. Silver production declined to 11.6 million ounces in 2018 from 21.4 million ounces in 2017, due to the KIVCET maintenance shutdown and lower silver inputs.

Our recycling process treated 41,700 tonnes of material during the year, and we plan to treat about 44,700 tonnes in 2019. Our focus remains on treating lead acid batteries and cathode ray tube glass, plus small quantities of zinc alkaline batteries and other post-consumer waste.

In November 2016, we announced that we would invest \$174 million in the installation of a second new acid plant to improve efficiency and environmental performance at Trail Operations. The construction of the acid plant is over 90% completed, and on time and on budget, with commissioning planned in the second quarter of 2019.

In 2019, we expect Trail Operations to produce 305,000 to 310,000 tonnes of refined zinc, approximately 70,000 to 75,000 tonnes of refined lead and 13.0 to 14.0 million ounces of silver. Zinc production from 2020 to 2022 is expected to increase to 310,000 to 315,000 tonnes per year, while annual lead production is expected to rise to 85,000 to 95,000 tonnes. Silver production depends on the amount of silver contained in the purchased concentrates.

Pend Oreille

Pend Oreille, located in Washington state, achieved zinc production of 29,700 tonnes in 2018, compared to 33,100 tonnes in 2017. Production declined due to reduced availability of higher-grade ore sources and additional ground support requirements in the first half of 2018.

We expect production in 2019 to be between 20,000 and 30,000 tonnes of zinc in concentrate. Production rates beyond the third quarter of 2019 are uncertain.

Markets

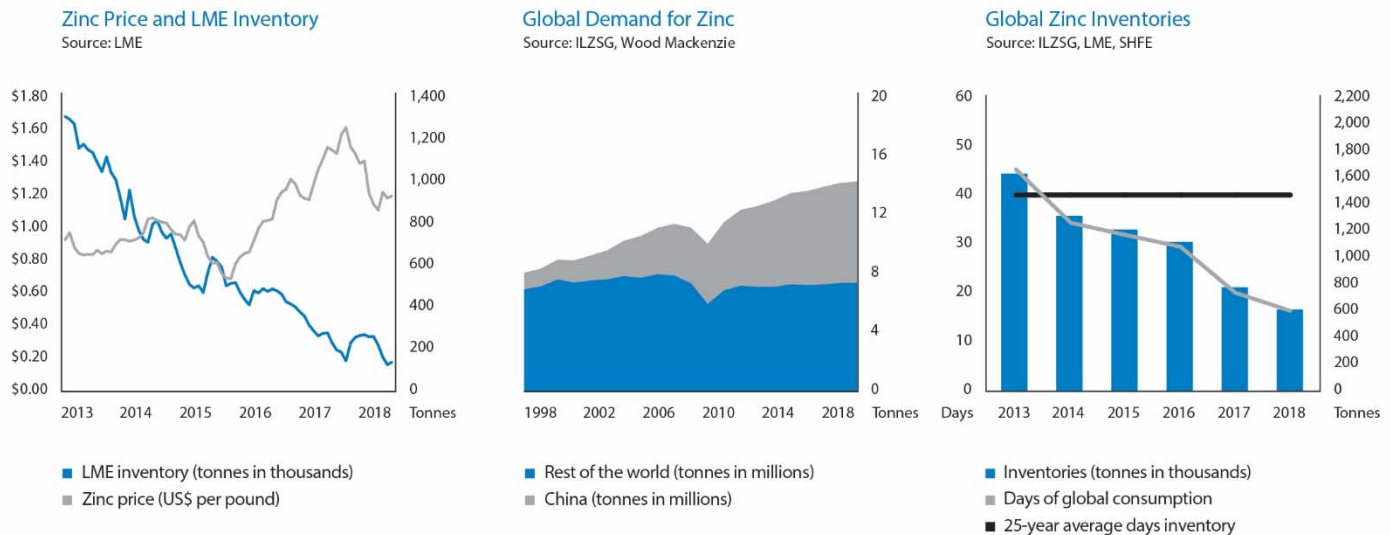
Zinc prices on the LME averaged US\$1.33 per pound for the year, similar to US\$1.31 per pound in 2017.

Zinc stocks on the LME fell by 52,700 tonnes in 2018, a 29% decline from 2017 levels, finishing the year at 129,300 tonnes, the lowest levels since early 2008. Stocks held on the Shanghai Futures Exchange fell 48,500 tonnes in 2018, a 71% decline from 2017 levels, finishing the year at 20,100 tonnes, the lowest level since stocks started to be reported in early 2007. We estimate that total reported global stocks, which include producer, consumer, merchant and terminal stocks, fell by approximately 102,000 tonnes in 2018 to 0.7 million tonnes at year-end, representing an estimated 21 days of global demand, compared to the 25-year average of 41 days.

In 2018, global zinc mine production increased 2.5% according to Wood Mackenzie, a commodity research consultancy, with total production reaching 12.9 million tonnes. Zinc mine production increased for the second consecutive year, but still remained below 2015 production levels. Wood Mackenzie expects global zinc mine production to grow to 13.9 million tonnes in 2019, largely attributable to restarts at several previously closed mines, along with some previously committed new larger-scale mines.

Wood Mackenzie estimates that the global zinc metal market remained in deficit in 2018 for the third consecutive year, recording a shortfall of 1.14 million tonnes. Global refined zinc demand was relatively flat at 14.3 million tonnes, growing only an estimated 0.6% over 2017.

Wood Mackenzie estimates that global refined zinc production fell 2.5% in 2018 for the third year in a row on tight concentrate supplies, with refined production reaching 13.2 million tonnes. They also estimate that refined zinc production will see a 6.4% increase in 2019 over 2018 levels, to 14.0 million tonnes, the first increase to refined production in four years. The estimate for the total increase in supply will still be below global metal demand, which is forecast to grow 1.5% to 14.5 million tonnes, suggesting that the refined metal market will continue in deficit into 2019.



Outlook

We expect zinc in concentrate production in 2019, including co-product zinc production from our copper business unit, to be in the range of 620,000 to 650,000 tonnes.

In 2019, we expect our zinc unit costs to be in the range of US\$0.50 to US\$0.55 per pound before margins from by-products and US\$0.35 to US\$0.40 per pound after margins from by-products based on current production plans, by-product prices and exchange rates. Unit costs after by-product margins are expected to vary significantly throughout the year with higher costs in the first half, as sales of Red Dog lead, our main by-product, are typically completed in the third and fourth quarters.

For the 2020 to 2022 period, we expect total annual zinc in concentrate production to be in the range of 600,000 to 630,000 tonnes excluding Pend Oreille, which has an uncertain production profile beyond 2019.

Benchmark terms for zinc treatment and refining charges were at historical lows in 2018, contributing to Trail Operations' profitability challenges in the fourth quarter. Trail Operations uses a long-term concentrate purchase strategy that averages payment terms and results in composite treatment charge terms generally over two years. We estimate that more than half of Trail Operations' concentrate purchases for the first half of 2019 are referenced to 2018 benchmark terms.

Energy

Our energy assets include a 21.3% interest in the Fort Hills oil sands mine, a 100% interest in the Frontier oil sands project and a 50% interest in various other oil sands leases in the exploration phase, including the Lease 421 Area. All these assets are located in the Athabasca oil sands region of northeastern Alberta.

In 2018, our Energy business unit accounted for 3% of revenue and incurred a \$106 million gross loss before depreciation and amortization. Fort Hills results were effective from June 1, 2018 when we concluded the mine was operational.

Fort Hills⁽¹⁾⁽³⁾

(\$ in millions)	2018
Blended bitumen price realized (US\$/bbl) ⁽²⁾⁽⁴⁾	\$ 35.12
Bitumen price realized (CAD\$/bbl) ⁽²⁾⁽⁴⁾	\$ 32.81
Operating netback (CAD\$/bbl) ⁽²⁾⁽⁴⁾	\$ (10.95)
Production (million bitumen barrels)	6.8
Production (average barrels per day)	31,955
Gross profit (loss) before depreciation and amortization ⁽²⁾	\$ (106)
Gross profit (loss)	\$ (165)

Notes:

- (1) Fort Hills results for the year ended December 31, 2018 are effective from June 1, 2018.
- (2) Non-GAAP Financial Measure. See "Use of Non-GAAP Financial Measures" section for further information.
- (3) Fort Hills figures presented at our ownership interest of 21.3%.
- (4) See "Use of Non-GAAP Financial Measures" section for reconciliation.

Fort Hills

The Fort Hills oil sands mine is located in northern Alberta. As at December 31, 2018, we held a 21.3% interest in the Fort Hills Energy Limited Partnership (Fort Hills Partnership), which owns the Fort Hills oil sands mine, with Total E&P Canada Ltd. (Total) and Suncor Energy Inc. (Suncor) holding the remaining interest. An affiliate of Suncor is the operator of the project.

Both production volumes and product quality on start-up have exceeded our expectations. Bitumen production from the first two secondary extraction trains at Fort Hills commenced in the first quarter of 2018, followed by the third and final train in May. All commissioning and construction activities are now complete. In the second quarter, we concluded that Fort Hills was operational, and results from Fort Hills are included in our consolidated results from June 1, 2018.

Realized prices and operating results in the fourth quarter were significantly impacted by a material decline in global benchmark prices and the widening of Canadian heavy blend differentials, namely Western Canada Select (WCS). In addition, costs associated with diluent increased significantly during the fourth quarter of 2018 due to a seasonal increase in diluent consumption and unusual widening in the spread between diluent and WCS. As a result of the decline in prices, we recorded inventory write-downs during the fourth quarter of approximately \$34 million.

The plant was successfully tested and ran at full design nameplate capacity for much of the fourth quarter, with December production exceeding 200,000 barrels per day. Fort Hills produced 46 million barrels of bitumen, or 125,000 barrels per day, since first oil in January 2018. Our share of production since January 1, 2018 was 9.7 million barrels, or 26,580 barrels per day, which was near the high end of our guidance of 8.5

million to 10.0 million barrels. Unit operating costs averaged \$32.89 for the year and continued to improve to below \$23.00 per barrel in December as production ramped up to full capacity.

Fort Hills has performed very well during start-up and commissioning and there is further potential to debottleneck and expand the production capacity. Evaluation of debottlenecking opportunities will include near-term work to improve the performance of the existing facilities with minimal capital. Long-term opportunities that may require modest capital expenditure will also be investigated. Between the near-term and long-term opportunities, there is a potential to increase Fort Hills' production by 20,000 to 40,000 barrels per day of bitumen on a 100% basis. Our share of annual production could increase from 14 million barrels to approximately 15.5 to 17 million barrels.

Our share of Fort Hills' major enhancement capital expenditures was \$69 million in 2018 and is expected to be \$100 million in 2019. Sustaining capital expenditures were \$21 million in 2018 and are expected to be \$60 million in 2019. Fort Hills' major enhancement and sustaining capital is expected to remain elevated in 2019 at approximately \$13.50 per barrel, primarily due to tailings and equipment ramp-up spending, before sustaining capital declines to \$3 to \$5 per barrel on average over the life of mine. Major enhancement capital is variable over the life of mine due to phasing of tailings and other development spending.

Markets

Based on industry estimates, we forecast global crude oil demand growth in 2019 to be approximately 1.325 million barrels per day. Non-OPEC production growth in 2019 is forecast at 2.000 million barrels per day, with North America contributing 1.500 million barrels per day of incremental supply. In order for the market to be in balance — given the projected imbalance between demand growth and non-OPEC supply growth — the production curtailment accord between OPEC and certain Russian producers announced in December 2018 needs to be adhered to in some measure. Canadian crude oil supply growth in 2019 is forecast at 0.270 million barrels per day. As in 2018, the majority of the supply increase in 2019 is anticipated to come from heavy blends. Supply growth will be generated via the commissioning and start-up of smaller or brownfield oil sands projects.

Export pipeline capacity for Canadian crude oil versus overall supply was in deficit through 2018 and is expected to remain that way until new capacity is developed. Exacerbating the imbalance was a slower-than-expected ramp-up of crude by rail takeaway capacity. Once contracted for, committed rail capacity will be utilized on a regular basis to ship heavy blends.

Fort Hills' bitumen production is delivered via pipeline to the East Tank Farm blend facility and ultimately sold as a blended bitumen product known as Fort Hills Reduced Carbon Life Cycle Dilbit Blend (FRB). We sell our share of FRB to a variety of customers at Hardisty market hub and the U.S. Gulf Coast. Approximately 80% of our FRB sales are at Hardisty, with the remainder at the U.S. Gulf Coast.

Net bitumen realizations at Fort Hills are influenced by a combination of North American crude oil benchmark prices, including the New York Mercantile Exchange (NYMEX) light sweet crude oil (WTI), Canadian heavy crude oil (WCS at Hardisty) and diluent (condensate at Edmonton). Bitumen price realizations are also affected by specific bitumen quality and spot sales.

The NYMEX WTI is the current light oil benchmark for North American crude oil prices. WTI averaged US\$64.77 per barrel in 2018.

WCS is a blend of conventionally produced heavy oils and bitumen, blended with diluent (condensate). WCS is a widely marketed crude grade with transparent market price references quoted at Hardisty and U.S. Gulf Coast market hubs. The index pricing period for WCS at Hardisty is typically the first nine to 11 business days that begin on the first business day of the calendar month prior to the month of delivery. WCS at Hardisty typically trades at a differential below the NYMEX WTI benchmark price, and traded at an average discount of US\$39.45 per barrel for fourth quarter deliveries, for a value of US\$19.35 per barrel. Hardisty differentials widened substantially in the quarter as increases in production strained crude oil export infrastructure and regional storage capacities.

WCS at the U.S. Gulf Coast is priced at a material premium to WCS at Hardisty, reflective of strong heavy sour oil demand, and reduced supply from Venezuela and Mexico. The U.S. Gulf Coast WCS differential to the NYMEX WTI in 2018 ranged between a discount of US\$5.45 per barrel and a premium of US\$1.12 per barrel, for an average 2018 discount of US\$2.63 per barrel.

Operating Netback

The following table summarizes our Fort Hills operating netback for the year.

(Amounts reported in CAD\$ per barrel of bitumen sold)	2018 ⁽²⁾
Bitumen price realized ⁽¹⁾⁽³⁾⁽⁴⁾	\$ 32.81
Crown royalties ⁽⁵⁾	(2.04)
Transportation costs ⁽⁶⁾	(8.83)
Adjusted operating costs ⁽¹⁾⁽³⁾⁽⁷⁾	(32.89)
Operating netback⁽¹⁾	\$ (10.95)

Notes:

(1) Non-GAAP measure. See "Use of Non-GAAP Financial Measures" section for further details.

(2) Fort Hills financial results for the year ended December 31, 2018 are included in operating results from June 1, 2018.

(3) See "Use of Non-GAAP Financial Measures" section for reconciliation.

(4) Bitumen price realized represents the realized petroleum revenue (blended bitumen sales revenue) net of diluent expense, expressed on a per barrel basis. Blended bitumen sales revenue represents revenue from our share of the heavy crude oil blend known as Fort Hills Reduced Carbon Life Cycle Dilbit Blend (FRB), sold at the Hardisty and U.S. Gulf Coast market hubs. FRB is comprised of bitumen produced from the Fort Hills oil sands mining and processing operations blended with purchased diluent. The cost of blending is affected by the amount of diluent required and the cost of purchasing, transporting and blending the diluent. A portion of diluent expense is effectively recovered in the sales price of the blended product. Diluent expense is also affected by Canadian and U.S. benchmark pricing and changes in the value of the Canadian dollar relative to the U.S. dollar.

(5) The royalty rate applicable to pre-payout oil sands operations starts at 1% of gross revenue and increases for every dollar by which the WTI crude oil price in Canadian dollars exceeds \$55 per barrel, to a maximum of 9% when the WTI crude oil price is \$120 per barrel or higher. Fort Hills is currently in the pre-payout phase. Detailed information regarding Alberta oil sands royalties can be found on the following website: <https://www.energy.alberta.ca/OS/OSRoyalty/Pages/default.aspx>.

(6) Transportation costs represent pipeline and storage costs downstream of the East Tank Farm blending facility. We use various pipeline and storage facilities to transport and sell our blend to customers throughout North America. Sales to the U.S. markets require additional transportation costs, but realize higher selling prices.

(7) Operating costs represent the costs to produce a barrel of bitumen from the Fort Hills mine and processing operation.

Outlook

Due to limited export capacity and extreme price volatility for Alberta crude oil, the Government of Alberta announced the curtailment of provincial crude oil and bitumen production, effective January 1, 2019. Initially, 325,000 barrels per day for the first quarter of 2019 was to be reduced across the industry, declining to approximately 30% of the initial curtailment levels for the remainder of the year. The government subsequently revised the first quarter curtailment level to 250,000 barrels per day for the production months of February and March.

Although there continues to be uncertainty around the details of the Government of Alberta announced curtailment, we expect it to affect both production and unit operating costs in 2019. We expect our 2019 share of bitumen production to be in the range of 33,000 to 38,000 barrels per day (12 to 14 million barrels annualized), including estimated production curtailments and unit operating costs to be \$26.00 to \$29.00 per barrel for the year. Consistent with the announced curtailments, we expect production to be lower in the first

quarter at a range of 30,000 to 32,000 barrels per day. With the lower production, we also expect unit operating costs to be higher in the first quarter.

Consistent with the Government of Alberta's production curtailment announcement, our production guidance for 2019 assumes the mandatory production curtailments as described above. The high end of our production guidance reflects curtailments being lifted in the second quarter.

Based on our share of Fort Hills operating at full production rates (approximately 90% of nameplate capacity of 194,000 barrels per day), our estimated EBITDA sensitivity to a US\$1/barrel change in the WCS price is approximately \$18.5 million, and \$13.5 million in respect of our after-tax profit.

Frontier Project

We hold a 100% interest in the Frontier oil sands project, which is located in northern Alberta. The regulatory application review of Frontier continued with a public hearing before a joint federal/provincial panel that concluded in December 2018. The earliest a federal decision statement could be expected for Frontier is in the second half of 2019. Our expenditures on Frontier are limited to supporting this process. We continue to evaluate the future project schedule and development options as part of our ongoing capital review and prioritization process.

As of December 31, 2018, our best estimate of unrisks contingent bitumen resources for the Frontier project is approximately 3.2 billion barrels. The project has been designed for a total nominal production of approximately 260,000 barrels per day of bitumen. The Frontier contingent resources have been subcategorized as "development pending" and "economically viable". There is uncertainty that it will be commercially viable to produce any portion of the resources.

The disclosure regarding our oil sands assets includes references to reserves and contingent bitumen resource estimates. Further information about these resource estimates, and the related risks and uncertainties, and contingencies that prevent the classification of resources as reserves, is set out on page 68 under the heading "Contingent Resource Disclosure". For further information about these reserve estimates, see our most recent Annual Information Form, which is available on our website at www.teck.com, on the Canadian Securities Administrators website at www.sedar.com (SEDAR), and under cover of Form 40-F on the EDGAR section of the Securities Exchange Commission (SEC) website at www.sec.gov.

Lease 421 Area

We hold a 50% interest in the Lease 421 Area, which is located east of the Fort Hills project in northern Alberta. To date, a total of 89 core holes have been completed in the Lease 421 Area.

Exploration

Throughout 2018, we conducted exploration around the world through our seven regional offices. Expenditures for the year of \$69 million were focused on copper, zinc and gold.

Exploration plays three critical roles at Teck: discovery of new orebodies through early stage exploration and acquisition; pursuit, evaluation and acquisition of development opportunities; and delivery of geoscience solutions and services to create value at our existing mines and development projects.

During 2018, early stage copper exploration continued to focus primarily on advancing porphyry-style projects in Chile, Peru, the United States and Mexico. In addition, significant exploration was carried out in and around our existing operations and advanced projects, including approximately 18 kilometres at QB2 and QB3. In 2019, we plan to drill several early stage copper projects, and we will continue to explore around our existing operations and advanced projects, with a significant program to support QB3 studies.

Zinc exploration has been concentrated in four areas: the Red Dog mine district in Alaska, western Canada, northeastern Australia, and Ireland. In Alaska, Australia and Canada, the targets are large, high-grade, sediment-hosted deposits similar to major world-class deposits. In 2018, we continued to drill on 100% state-owned lands near our Red Dog mine (completing approximately 10 kilometres), and at our Reward project (Teena Deposit) in the McArthur district of Australia (completing approximately 9 kilometres), to better define external limits and internal continuity to mineralization.

We have ongoing exploration for, and partnerships in, gold opportunities. Our plan is to explore, find and advance gold resources through targeted exploration in select jurisdictions. Once an opportunity has been recognized, the strategy is to optimize that opportunity or asset through further definition drilling and engineering studies, then capture value through periodic divestitures. Our current exploration efforts and drill testing for gold are primarily focused in Chile, Peru and Turkey.

Financial Overview

Financial Summary

(\$ in millions, except per share data)	2018	2017 ⁽²⁾	2016 ⁽²⁾
Revenues and profit			
Revenues	\$ 12,564	\$ 11,910	\$ 9,300
Gross profit before depreciation and amortization ⁽¹⁾	\$ 6,104	\$ 6,059	\$ 3,781
Gross profit	\$ 4,621	\$ 4,567	\$ 2,396
EBITDA ⁽¹⁾	\$ 6,174	\$ 5,589	\$ 3,350
Profit attributable to shareholders	\$ 3,107	\$ 2,460	\$ 1,040
Cash flow			
Cash flow from operations	\$ 4,438	\$ 5,049	\$ 3,056
Property, plant and equipment expenditures	\$ 1,906	\$ 1,621	\$ 1,416
Capitalized production stripping costs	\$ 707	\$ 678	\$ 477
Investment expenditures	\$ 284	\$ 309	\$ 114
Balance sheet			
Cash balances	\$ 1,734	\$ 952	\$ 1,407
Total assets	\$ 39,626	\$ 37,028	\$ 35,629
Debt, including current portion	\$ 5,519	\$ 6,369	\$ 8,343
Per share amounts			
Profit attributable to shareholders	\$ 5.41	\$ 4.26	\$ 1.80
Dividends declared	\$ 0.30	\$ 0.60	\$ 0.10

Notes:

(1) Non-GAAP Financial Measures. See "Use of Non-GAAP Financial Measures" section for further information and a reconciliation to GAAP measures.

(2) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Our revenue and profit depend on the prices for the commodities we produce, sell and use in our production processes. Commodity prices are determined by the supply of and demand for those commodities, which are influenced by global economic conditions. We normally sell the products that we produce at prevailing market prices or, in the case of steelmaking coal, through an index-linked pricing mechanism or on a spot basis. Prices for our products can fluctuate significantly and that volatility can have a material effect on our financial results.

Foreign exchange rate movements can also have a significant effect on our results and cash flows, as a substantial portion of our operating costs are incurred in Canadian and other currencies, and most of our revenue and debt are denominated in U.S. dollars. We determine our financial results in local currency and report those results in Canadian dollars and, accordingly, our reported operating results and cash flows are affected by changes in the Canadian dollar exchange rate relative to the U.S. dollar, as well as the Peruvian sol and Chilean peso.

In 2018, our profit attributable to shareholders was \$3.1 billion, or \$5.41 per share. This compares with \$2.5 billion or \$4.26 per share in 2017 and \$1.0 billion or \$1.80 per share in 2016. The changes are mainly due to the gain on the sale of the Waneta Dam in 2018, varying commodity prices, sales volumes, exchange rate

movements and the after-tax impairment charges and reversals recorded in the respective periods.

Our profit over the past three years has included items that we segregate for presentation to investors so that the ongoing profit of the company may be more clearly understood. Our adjusted profit, which takes these items into account, was \$2.4 billion in 2018, \$2.5 billion in 2017 and \$1.1 billion in 2016, or \$4.13, \$4.36 and \$1.91 per share, respectively. These items are described below and summarized in the table that follows.

In 2018, we completed the sale of our two-thirds interest in the Waneta Dam to BC Hydro for \$1.2 billion cash and recorded a pre-tax gain of \$888 million, with no cash taxes payable on the transaction. We also purchased US\$1.0 billion principal amount of our near-term debt maturities, reducing the outstanding balance to US\$3.8 billion and recorded a \$26 million pre-tax charge on the transaction. We also recorded a non-cash pre-tax asset impairment of \$41 million, of which \$31 million related to capitalized exploration expenditures that are not expected to be recovered, and \$10 million related to Quebrada Blanca assets that will not be recovered through use because mining operations ended in the fourth quarter of 2018.

In 2017, due to the improvement in steelmaking coal prices and future operating cost estimates, we recorded a \$207 million non-cash pre-tax reversal of an impairment charge that we took against our steelmaking coal operations in 2015. This was partially offset by a non-cash pre-tax asset impairment of \$44 million recorded against our Quebrada Blanca assets that will not be recovered through use. We also recorded an \$82 million charge related to increased provincial tax rates in B.C., and the reduction in tax rates in the U.S. resulted in a \$101 million non-cash credit to our 2017 tax expense. We incurred a \$216 million pre-tax loss on the repurchase of certain of our outstanding notes in the first half of the year.

In 2016, we recorded an impairment of our investment in the Fort Hills oil sands project due to increased development costs. We also recorded asset impairments relating to a project at our Trail Operations and our interest in the Wintering Hills Wind Power Facility, which was sold in 2017. These non-cash charges totalled \$294 million on a pre-tax basis and \$217 million on an after-tax basis.

The following table shows the effect of these items on our profit.

(\$ in millions, except per share data)	2018	2017 ⁽³⁾	2016 ⁽³⁾
Profit attributable to shareholders	\$ 3,107	\$ 2,460	\$ 1,040
Add (deduct):			
Debt purchase loss (gain)	19	159	(44)
Debt prepayment option loss (gain)	31	(38)	(84)
Asset sales	(809)	(5)	(53)
Foreign exchange (gain) loss	(8)	(4)	(45)
Environmental provisions	13	60	–
Asset impairments (reversals)	30	(100)	217
Other	(11)	(12)	72
Adjusted profit⁽¹⁾⁽²⁾	\$ 2,372	\$ 2,520	\$ 1,103
Adjusted basic earnings per share⁽¹⁾⁽²⁾	\$ 4.13	\$ 4.36	\$ 1.91
Adjusted diluted earnings per share⁽¹⁾⁽²⁾	\$ 4.07	\$ 4.30	\$ 1.89

Notes:
(1) Non-GAAP Financial Measures. See "Use of Non-GAAP Financial Measures" section for further information.
(2) See "Use of Non-GAAP Financial Measures" section for reconciliation.
(3) Certain 2017 comparative figures have been restated for new IFRS pronouncements. The 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Cash flow from operations in 2018 was \$4.4 billion, compared with \$5.0 billion in 2017 and \$3.1 billion in 2016. The changes in cash flow from operations are mainly due to varying commodity prices and sales volumes, offset to some extent by changes in foreign exchange rates.

At December 31, 2018, our cash balance was \$1.7 billion. Total debt was \$5.5 billion and our net debt to net-debt-plus-equity ratio was 14% at December 31, 2018, compared with 21% at December 31, 2017 and 28% at the end of 2016.

Gross Profit

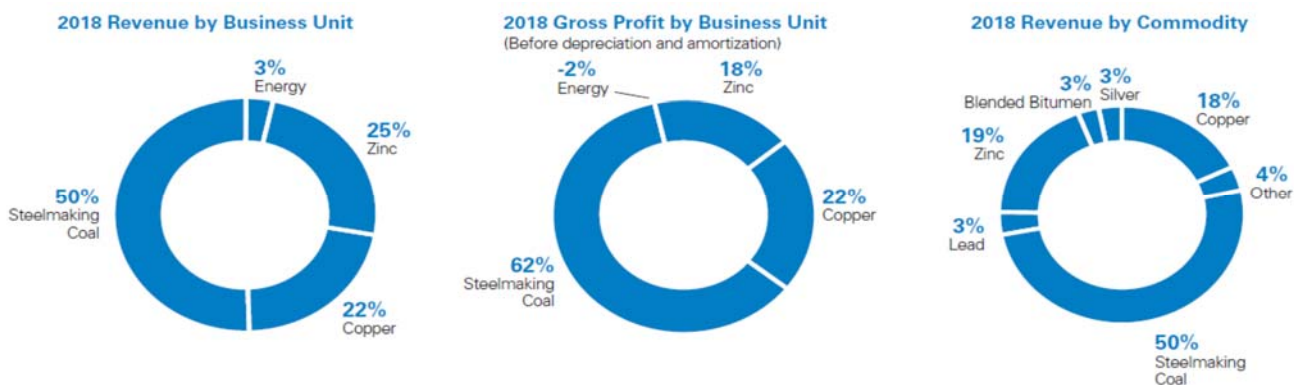
Our gross profit is made up of our revenue less the operating expenses at our producing operations, including depreciation and amortization. Income and expenses from our business activities that do not produce commodities for sale are included in our other operating income and expenses or in our non-operating income and expenses.

Our principal commodities are steelmaking coal, copper, zinc and blended bitumen, which accounted for 50%, 18%, 19% and 3% of revenue, respectively, in 2018. Silver and lead are significant by-products of our zinc operations, each accounting for 3% of our 2018 revenue. We also produce a number of other by-products, including molybdenum, various specialty metals, and chemicals and fertilizers, which in total accounted for 4% of our revenue in 2018.

Our revenue is affected by sales volumes, which are determined by our production levels and by demand for the commodities we produce, commodity prices and currency exchange rates.

Our revenue was a record \$12.6 billion in 2018, compared with \$11.9 billion in 2017 and \$9.3 billion in 2016. The increase in 2018 revenue was mainly due to higher steelmaking coal and copper prices and the addition of revenue from the sale of blended bitumen from our Fort Hills oil sands mine, partially offset by lower sales volumes of refined lead and silver from our Trail Operations. Average prices for steelmaking coal and copper were 7% and 6% higher in 2018 than in 2017. The increase in 2017 from 2016 revenue was mainly due to higher steelmaking coal, copper and zinc prices, partially offset by lower sales volumes of steelmaking coal and a slightly weaker average U.S. dollar exchange rate.

Our cost of sales includes all of the expenses required to produce our products, such as labour, energy, operating supplies, concentrates purchased for our Trail Operations' refining and smelting activities, diluent purchased for our Fort Hills oil sands mine to transport our bitumen by pipeline, royalties, and marketing and distribution costs required to sell and transport our products to various delivery points. Our cost of sales also



includes depreciation and amortization expense. Due to the geographic locations of many of our operations, we are highly dependent on third parties for the provision of rail, port, pipeline and other distribution services. In certain circumstances, we negotiate prices and other terms for the provision of these services where we may not have viable alternatives to using specific providers, or may not have access to regulated rate-setting mechanisms or appropriate remedies for service failures. Contractual disputes, demurrage charges, rail, port and pipeline capacity issues, availability of vessels and railcars, weather problems and other factors can have a material effect on our ability to transport materials from our suppliers and to our customers in accordance with schedules and contractual commitments.

Our costs are dictated mainly by our production volumes, by the costs for labour, operating supplies, concentrate purchases and diluent purchases, and by strip ratios, haul distances, ore grades, distribution costs, commodity prices, foreign exchange rates, costs related to non-routine maintenance projects, and our ability to manage these costs. Production volumes mainly affect our variable operating and our distribution costs. In addition, production affects our sales volumes and, when combined with commodity prices, affects profitability and, ultimately, our royalty expenses.

Our cost of sales was \$7.9 billion in 2018, compared with \$7.3 billion in 2017 and \$6.9 billion in 2016. In our steelmaking coal business, unit cost increases were partly driven by our decision to increase mining activity to capture margin in a favourable steelmaking coal price environment. In addition, increased diesel and operating supplies costs also resulted in increased unit costs. Costs were higher at our Trail Operations due to both maintenance issues and the effect of wildfires in southeast British Columbia, as well as the increase in power costs resulting from the sale of the Waneta Dam to BC Hydro in July 2018. Cost of sales in 2018 also included costs from Fort Hills, which produced its first bitumen in January and achieved commercial production on June 1.

Our 2017 costs were higher than 2016 due to a number of factors, including difficult weather conditions early in the year, higher employee turnover rates and geotechnical issues at our coal operations, all of which affected material movement. Our Highland Valley Copper Operations was mining lower-grade ore as planned, which results in higher unit operating costs. At Red Dog, we had some challenges early in the year that affected production and costs. A metallurgically complex, highly oxidized, higher-grade ore from the Qanaiyaq pit was introduced to the mill early in the year, impacting recoveries. As we gained processing experience with this ore and deepened the pit to access less-weathered ore, recoveries improved and allowed us to increase the amount of Qanaiyaq ore, which resulted in a significant improvement in metal production in the second half of the year.

Other Expenses

(\$ in millions)	2018	2017	2016
General and administration	\$ 142	\$ 116	\$ 99
Exploration	69	58	51
Research and development	35	55	30
Asset impairments (impairment reversal)	41	(163)	294
Other operating expense (income)	(450)	230	197
Finance income	(33)	(17)	(16)
Finance expense	252	229	354
Non-operating expense (income)	52	151	(239)
Share of losses (income) of associates	3	(6)	(2)
	\$ 111	\$ 653	\$ 768

We must continually replace our reserves as they are depleted in order to maintain production levels over the long term. We try to do this through our exploration and development programs and through acquisition of interests in new properties or in companies that own them. Exploration for minerals, steelmaking coal and oil is highly speculative and the projects involve many risks. The vast majority of exploration projects are unsuccessful and there are no assurances that current or future exploration programs will find deposits that are ultimately brought into production.

Our research and development expenditures are primarily focused on advancing our proprietary CESL hydrometallurgical technology, the development of internal and external growth opportunities, and the development and implementation of process and environmental technology improvements at operations, such as the saturated rock fill project.

In 2018, we recorded asset impairments of \$41 million, of which \$31 million related to capitalized exploration expenditures that are not expected to be recovered, and \$10 million related to our Quebrada Blanca assets that will not be recorded through use because mining operations ended in the fourth quarter of 2018 as reserves were depleted.

In 2017, due to the improvement in steelmaking coal prices and future operating cost estimates, we recorded a \$207 million reversal of an impairment charge that we took against our steelmaking coal operations in 2015. This was partially offset by an impairment of \$44 million recorded on our Quebrada Blanca assets that will not be recovered through use.

During 2016, we recorded an impairment of our investment in the Fort Hills oil sands project as a result of increased development costs. We also recorded asset impairments relating to a project at our Trail Operations and our interest in the Wintering Hills Wind Power Facility. These charges, primarily related to Fort Hills, totalled \$294 million on a pre-tax basis and \$217 million on an after-tax basis.

The key inputs used in determining the magnitude of asset impairments and reversals are outlined on pages 48 to 51 in this Management's Discussion and Analysis.

The impairment charges and (reversals) were as follows:

(\$ in millions)	2018	2017	2016
Steelmaking coal operations	\$ –	\$ (207)	\$ –
Energy — Fort Hills	–	–	222
Other	41	44	72
	\$ 41	\$ (163)	\$ 294

Other operating income and expenses include items we consider to be related to the operation of our business, such as final pricing adjustments (which are further described in the following paragraph), share-based compensation, gains or losses on commodity derivatives, gains or losses on the sale of operating or exploration assets, and provisions for various costs at our closed properties. Significant items in 2018 included an \$888 million gain on the sale of our two-thirds interest in the Waneta Dam to BC Hydro, \$117 million of negative pricing adjustments, \$31 million for environmental costs, \$59 million for share-based compensation and a \$106 million charge for take-or-pay contracts. Significant items in 2017 included \$190 million of positive pricing adjustments, \$186 million for environmental costs, \$125 million for share-based compensation, an \$81 million charge for take-or-pay contracts and a \$28 million break fee related to the sale of the Waneta Dam that was paid to Fortis. Significant items in 2016 included a \$171 million expense for share-based compensation, \$153 million of positive pricing adjustments, a \$48 million charge for take-or-pay contracts and \$144 million for environmental costs.

Sales of our products, including by-products, are recognized in revenue at the point in time when the customer obtains control of the product. Control is achieved when a product is delivered to the customer, we have present right to payment for the product, significant risks and rewards of ownership have transferred to the customer according to contract terms, and there is no unfulfilled obligation that could affect the customer's acceptance of the product. For sales of steelmaking coal and copper, zinc and lead concentrates, control of the product generally transfers to the customer when an individual shipment parcel is loaded onto a carrier accepted or directly contracted by the customer. For sales of refined metals, chemicals, and fertilizers, control of the product transfers to the customer when the product is loaded onto a carrier specified by the customer. For blended bitumen, control of the product generally transfers to the customer when the product passes the delivery point specified in the sales contract.

The majority of our base metal concentrates and refined metals are sold under pricing arrangements where final prices are determined by quoted market prices in a period subsequent to sale. For these sales, revenue is recognized based on the estimated consideration to be received at the date of sale with reference to relevant commodity market prices. Our refined metals are sold under spot or average pricing contracts. For all steelmaking coal sales under average pricing contracts where pricing is not finalized when revenue is recognized, revenue is recorded based on the estimated consideration to be received at the date of sale with reference to steelmaking coal price assessments. The majority of our blended bitumen is sold under pricing arrangements where final prices are determined based on commodity price indices that are finalized at or near the date of sale. Our revenue for blended bitumen is net of royalty payments to governments.

Adjustments are made to settlement receivables in subsequent periods based on movements in quoted market prices or published price assessments (for steelmaking coal) up to the date of final pricing. These pricing adjustments result in gains in a rising price environment and losses in a declining price environment, and are recorded as other operating income or expense. The extent of the pricing adjustments also takes

into account the actual price participation terms as provided in certain concentrate sales agreements. It should be noted that these effects arise on the sale of concentrates, as well as on the purchase of concentrates at our Trail Operations.

The following table outlines our outstanding receivable positions, which were provisionally valued at December 31, 2018 and 2017, respectively.

(payable pounds in millions)	Outstanding at December 31, 2018		Outstanding at December 31, 2017	
	Pounds	US\$/lb.	Pounds	US\$/lb.
Copper	93	\$ 2.70	138	\$ 3.26
Zinc	208	\$ 1.12	197	\$ 1.50

Our finance expense includes the interest expense on our debt, finance lease interest, letters of credit and standby fees, the interest components of our pension obligations, and accretion on our decommissioning and restoration provisions, less any interest that we capitalize against the cost of our development projects. Debt interest expense decreased in 2018, mainly due to the reduction in our outstanding notes. These items were partially offset by additional fees from an increase in our outstanding letters of credit, and the effect of accretion on our decommissioning and restoration provisions. Further detail is provided in Note 10 to our 2018 audited annual consolidated financial statements.

Non-operating income (expense) includes items that arise from financial and other matters and includes such items as foreign exchange gains or losses, debt refinancing costs, gains or losses on the revaluation of debt prepayment options, and gains or losses on the sale of investments. In 2018, other non-operating expenses included \$42 million of losses on debt prepayment options, \$16 million of foreign exchange gains and a \$26 million charge on debt repurchased during the year. In 2017, other non-operating expenses included \$51 million of gains on debt prepayment options, \$5 million of foreign exchange gains, \$9 million of gains on sale of investments and a \$216 million charge on debt repurchased during the year. In 2016, other non-operating expenses included \$113 million of gains on debt prepayment options, \$46 million of foreign exchange gains, \$49 million of gains on debt repurchases and \$34 million of gains on sale of investments.

Profit (loss) attributable to non-controlling interests relates to the ownership interests that are held by third parties in our Quebrada Blanca, Carmen de Andacollo and Elkview operations, and Compañía Minera Zafranal S.A.C.

Income Taxes

Income and resource taxes in 2018 were \$1.4 billion, or 30% of pre-tax profits. This effective tax rate is higher than the Canadian statutory income tax rate of 27% as a result of resource taxes and higher rates in some foreign jurisdictions. The effect of these is partially offset by the gain on the sale of our two-thirds interest in the Waneta Dam, which was taxed at a lower rate. Due to available tax pools, we are currently shielded from cash income taxes, but not resource taxes, in Canada. We remain subject to cash taxes in foreign jurisdictions.

Subsequent to year-end, the Peruvian tax authority, Superintendencia Nacional de Aduanas y de Administración Tributaria (SUNAT), issued an income tax assessment to Antamina (our joint operation in

which we own a 22.5% share) denying its accelerated depreciation allowance on costs incurred in 2013 related to the expansion of the Antamina mine, as provided under Antamina's tax stability agreement. If the assessment is sustained, our indirect share of the current tax debt that Antamina may have to pay, including interest and penalties, is estimated to be approximately \$40 million (US\$30 million). However, since these items are mainly a matter of timing rather than the ultimate liability, the resulting charge to our earnings would be approximately \$20 million (US\$15 million) consisting of interest and penalties. If SUNAT's view on the scope of the tax stability agreement were sustained and extended to 2015 (being the last year of tax stability), our indirect share of the tax debt that Antamina may have to pay, including interest and penalties, could reach about \$125 million (US\$94 million) and the charge to our earnings could reach about \$60 million (US\$45 million). Based on opinions from Peruvian counsel, we believe that Antamina's original filing positions will ultimately prevail and Antamina will appeal the 2013 income tax assessment in due course. As a result, we have not provided for this matter in our financial statements as at December 31, 2018.

Financial Position and Liquidity

Our financial position and liquidity have improved from our strong position at the beginning of the year. At December 31, 2018, we had \$1.7 billion of cash and a US\$4.0 billion unused line of credit, providing us with \$7.2 billion of liquidity. Based on our current strong financial position, we expect to be able to maintain our operations and fund our development activities as planned.

Our outstanding debt was \$5.5 billion at December 31, 2018, compared with \$6.4 billion at the end of 2017 and \$8.3 billion at the end of 2016. The decrease is due primarily to the US\$1.0 billion of notes that we repurchased and retired in the third quarter of 2018. Additionally, in the first quarter of 2018, we repaid US\$22 million of notes that matured. In total, since September 2015, our term notes have been reduced by US\$3.4 billion, reducing the principal outstanding to US\$3.8 billion.

Our debt positions and credit ratios are summarized in the following table:

	2018	2017 ⁽⁴⁾	2016
Term notes face value	\$ 3,809	\$ 4,831	\$ 6,141
Unamortized fees and discounts	(31)	(40)	(50)
Other	268	286	122
Debt (US\$ in millions)	\$ 4,046	\$ 5,077	\$ 6,213
Debt (CAD\$ equivalent) ⁽¹⁾ (A)	\$ 5,519	\$ 6,369	\$ 8,343
Less cash balances	(1,734)	(952)	(1,407)
Net debt ⁽²⁾ (B)	\$ 3,785	\$ 5,417	\$ 6,936
Equity (C)	\$ 23,018	\$ 19,993	\$ 18,007
Debt to debt-plus-equity ratio ⁽²⁾ (A/(A+C))	19%	24%	32%
Net debt to net-debt-plus-equity ratio ⁽²⁾ (B/(B+C))	14%	21%	28%
Debt to EBITDA ratio ⁽²⁾⁽³⁾	0.9x	1.1x	2.5x
Net debt to EBITDA ratio ⁽²⁾⁽³⁾	0.6x	1.0x	2.1x
Average interest rate	6.1%	5.7%	5.7%

Notes:

(1) Translated at year-end exchange rates.

(2) Non-GAAP Financial Measure. See "Use of Non-GAAP Financial Measures" section for further information.

(3) See "Use of Non-GAAP Financial Measures" section for reconciliation.

(4) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

At December 31, 2018, the weighted average maturity of our term notes is approximately 16 years and the weighted average coupon rate is approximately 6.1%.

Our primary sources of liquidity and capital resources are our cash and temporary investments, cash flow provided from operations, and funds available under our committed and uncommitted bank credit facilities, of which approximately US\$4.1 billion is currently available. Further information about our liquidity and associated risks is outlined in Notes 28 and 30 to our 2018 audited annual consolidated financial statements.

Cash flow from operations was \$4.4 billion in 2018. Our cash position increased from \$952 million at the end of 2017 to \$1.7 billion at December 31, 2018. Significant outflows included \$2.6 billion of capital expenditures, \$1.4 billion to purchase and cancel US\$1.0 billion of notes, \$172 million on returns to shareholders through dividends, \$189 million on share buybacks and \$407 million primarily consisting of interest on our outstanding debt.

We maintain various committed and uncommitted credit facilities for liquidity and for the issuance of letters of credit. Our US\$4.0 billion revolving credit facility matures in November 2023 and has a letter of credit sub-limit of US\$1.5 billion. There are currently no drawings on this facility and it remains fully available as at February 12, 2019.

We also have a US\$600 million facility that matures in November 2021. As at December 31, 2018, there were US\$573 million of letters of credit issued on this facility.

Borrowing under our primary committed credit facilities is subject to our compliance with the covenants in the agreement and our ability to make certain representations and warranties at the time of the borrowing request.

In addition to our two primary revolving committed credit facilities, we maintain uncommitted bilateral credit facilities with various banks and with Export Development Canada for the issuance of letters of credit, stand-alone letters of credit and surety bonds, all primarily to support our future reclamation obligations. At December 31, 2018, we had \$1.82 billion of letters of credit issued on the \$2.15 billion of bilateral credit facilities that we have. In addition to the letters of credit outstanding under these uncommitted credit facilities, we also had stand-alone letters of credit of \$369 million outstanding as at December 31, 2018, which were not issued under a credit facility. We also had surety bonds of \$350 million outstanding as at December 31, 2018 to support our current and future reclamation obligations.

The cost of funds under certain of our credit facilities depends on our credit ratings. Teck was upgraded to an investment grade credit rating by Moody's on January 16, 2019, at Baa3 with a stable outlook. Our current credit ratings from S&P and Fitch are BB+ and BB+, respectively, with positive outlooks. As a result of the Moody's upgrade, the drawn cost on our US\$4.0 billion revolving credit facility has been reduced by 0.35%. Should another rating agency upgrade our rating by a single notch, letters of credit totalling US\$672 million could be released.

Under the terms of the silver streaming agreement relating to Antamina, if there is an event of default under the agreement or Teck insolvency, Teck Base Metals Ltd., our subsidiary that holds our interest in Antamina, is restricted from paying dividends or making other distributions to Teck to the extent that there are unpaid amounts under the agreement.

Operating Cash Flow

Cash flow from operations was \$4.4 billion in 2018, compared with a record \$5.0 billion in 2017 and \$3.1 billion in 2016. The decrease in 2018 was primarily associated with the changes in non-cash working capital items due to the buildup of inventories with the ramp-up of Fort Hills, along with a reduction of accounts payable early in the year following a significant increase in the fourth quarter of 2017 related to Red Dog's seasonality. The increase in 2017 compared to 2016 was mainly due to the higher average commodity prices.

Investing Activities

Capital expenditures in 2018 were \$1.9 billion property, plant and equipment and \$707 million for capitalized stripping, as summarized in the table on pages 44 to 45.

The largest components of sustaining capital included \$232 million at our steelmaking coal operations, \$150 million at Trail Operations, \$65 million at Red Dog Operations and \$63 million for our share of spending at Antamina.

Major enhancement expenditures included \$230 million at our steelmaking coal operations, primarily related to the upgrade at Neptune Terminals, developing the Baldy Ridge pit at Elkview Operations and the Swift pit at Fording River Operations; \$100 million for the mill upgrade project at Red Dog Operations; \$55 million towards installing an additional ball mill to increase grinding circuit capacity at Highland Valley Copper Operations; and \$69 million on tailings and equipment ramp-up spending at Fort Hills.

New mine development included \$414 million for the Quebrada Blanca Phase 2 project, \$263 million for our share of completing the development of the Fort Hills oil sands project and \$56 million on our Project Satellite.

Expenditures on investments in 2018 and 2017 were \$284 million and \$309 million, respectively. In 2018, we paid US\$112.5 million — US\$52.5 million on closing and US\$60 million upon receipt of the regulatory approvals received in August — to acquire Inversiones Mineras S.A. to bring our ownership share of Quebrada Blanca to 90%. Other investments include \$44 million for the 1.3% increase in Fort Hills, and \$48 million on NuevaUnión, which is an equity investment under the IFRS accounting rules. For 2017, investments included \$121 million for a 0.89% increase in our share of Fort Hills, \$43 million on our NuevaUnión copper project, \$63 million to acquire Goldcorp's minority 21% interest in the San Nicolás copper project, and \$13 million to acquire the remaining 70% of AQM Copper Inc. not already owned, giving us an 80% interest in the Zafranal copper-gold project located in southern Peru.

Cash proceeds from the sale of assets and investments were \$1.3 billion in 2018, \$126 million in 2017 and \$170 million in 2016. The major item in 2018 was the \$1.2 billion of proceeds from the sale of our two-thirds interest in the Waneta Dam. Significant items in 2017 were proceeds of \$59 million from the sale of our 49% interest in the Wintering Hills Wind Power Facility and \$30 million from the sale of marketable securities and various royalty interests.

Financing Activities

In 2018, we purchased US\$1.0 billion aggregate principal amount of our outstanding notes pursuant to cash tender offers. The principal amount of notes purchased was US\$103 million of 4.50% notes due January 2021, US\$471 million of 4.75% notes due 2022 and US\$426 million of 3.75% notes due 2023. The total cost

of the purchases, which was funded from cash on hand, including the premiums, was US\$1.01 billion. We recorded a pre-tax accounting charge of \$26 million (\$19 million after tax) in non-operating income (expense) in connection with these purchases.

In November 2018, we changed the amounts and maturity dates, and made certain other amendments to our two committed revolving credit facilities. We increased our US\$3.0 billion facility to US\$4.0 billion (undrawn at December 31, 2018) and extended the maturity date from October 2022 to November 2023. We decreased the US\$1.2 billion facility to US\$600 million (US\$573 million drawn for letters of credit at December 31, 2018) and extended the maturity date from October 2020 to November 2021. In addition, our obligations under these agreements and our outstanding 8.5% term notes due 2024 are no longer guaranteed on a senior unsecured basis by certain Teck subsidiaries.

In April 2017, our Board announced a dividend policy reflecting our commitment to return cash to shareholders in balance with the needs and opportunities to invest in, and the inherent cyclicity of, our underlying businesses. The policy is anchored by an annual base dividend of \$0.20 per share, to be paid \$0.05 on the last business day of each quarter. Each year the Board will review the free cash flow generated by the business, the outlook for business conditions and priorities regarding capital allocation, and determine whether a supplemental dividend should be paid. Any supplemental dividends declared are expected to be paid on the last business day of the calendar year. If declared, supplemental dividends may be highly variable from year to year, given the volatility of commodity prices and the potential need to conserve cash for certain project capital expenditures or other corporate priorities. As always, the payment of dividends is at the discretion of the Board, who will review the dividend policy regularly. During 2018, we paid \$172 million of eligible dividends, of which approximately \$57 million, or \$0.10 per share, was for the supplemental dividend.

In 2018, we purchased and cancelled approximately 6.3 million Class B shares at a cost of \$189 million under our normal course issuer bids. Our current normal course issuer bid allows us to purchase up to 40 million Class B shares during the period starting October 10, 2018 and ending October 9, 2019. As of February 12, 2019, we have purchased approximately 8.5 million shares under this bid for \$247 million, of which 4.7 million shares were purchased and cancelled in 2018.

Teck is making the normal course issuer bid because it believes that the market price of its Class B Shares may, from time to time, not reflect their underlying value and that the share buyback program may provide value by reducing the number of shares outstanding at attractive prices. All repurchased shares will be cancelled. During Teck's prior normal course issuer bid, which commenced on October 10, 2017 and ended October 9, 2018, Teck purchased 7,483,388 Class B Shares on the open market at a volume-weighted average price of \$31.05 per Class B Share. Shareholders may obtain a copy of Teck's normal course issuer bid notice by contacting our Corporate Secretary.

Quarterly Profit and Cash Flow

(\$ in millions except per share data)	2018				2017 (restated)			
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Revenue	\$ 3,247	\$ 3,209	\$ 3,016	\$ 3,092	\$ 3,156	\$ 3,075	\$ 2,832	\$ 2,847
Gross profit	1,011	1,009	1,241	1,360	1,263	1,068	1,073	1,163
EBITDA ⁽¹⁾	1,152	2,064	1,403	1,555	1,563	1,370	1,341	1,315
Profit attributable to shareholders	433	1,281	634	759	740	584	580	556
Basic earnings per share	\$ 0.75	\$ 2.23	\$ 1.10	\$ 1.32	\$ 1.28	\$ 1.01	\$ 1.00	\$ 0.96
Diluted earnings per share	\$ 0.75	\$ 2.20	\$ 1.09	\$ 1.30	\$ 1.26	\$ 0.99	\$ 0.99	\$ 0.95
Cash flow from operations	\$ 1,352	\$ 872	\$ 1,100	\$ 1,114	\$ 1,458	\$ 894	\$ 1,407	\$ 1,290

Notes:

(1) Non-GAAP Financial Measure. See "Use of Non-GAAP Financial Measures" section for further information.

Gross profit in the fourth quarter from our steelmaking coal business unit was \$819 million, compared with \$625 million a year ago. Strong fourth quarter sales and significantly higher realized steelmaking coal prices increased gross profit before depreciation and amortization by \$196 million from a year ago, despite higher operating and transportation unit costs.

Sales volumes of 6.6 million tonnes in the fourth quarter were 5% higher than the same period a year ago, including record high monthly sales in November. This strong performance resulted from a combination of robust demand in all market areas led by continued steel production capacity growth in India and Southeast Asia and steelmaking coal supply concerns, mainly in Australia.

Gross profit from our copper business unit was \$138 million in the fourth quarter, compared with \$288 million a year ago. Gross profit before depreciation and amortization decreased by \$166 million, compared with a year ago due mainly to lower copper sales and lower prices for copper and zinc. A sharp decline in copper prices, especially in December, also resulted in inventory write-down charges at Quebrada Blanca (\$27 million) and Highland Valley Copper (\$14 million). In the same period last year, we reversed prior inventory write-downs at our Quebrada Blanca mine of \$25 million as a result of higher copper prices.

Copper production in the fourth quarter decreased by 7% from a year ago primarily due to lower ore grades and mill throughput at Highland Valley Copper, as expected in the mine plan. Our total cash unit costs³ before by-product credits in the fourth quarter were US\$1.76 per pound, similar to the same period a year ago. Higher zinc and molybdenum sales volumes in 2018 were offset by lower zinc prices. As a result, cash unit costs after by-product credits of US\$1.28 per pound in the fourth quarter were also similar to US\$1.27 per pound in the fourth quarter last year.

Gross profit from our zinc business unit was \$206 million in the fourth quarter, compared with \$350 million a year ago. Gross profit before depreciation and amortization decreased by \$133 million due primarily to lower zinc prices and a decrease in by-product revenues from lead and silver, partially offset by lower royalties.

³ Non-GAAP Financial Measure. See "Use of Non-GAAP Financial Measures" section for further information.

Fourth quarter production was lower at our Trail Operations due to planned major maintenance in the lead circuit and the treatment of lead concentrates with lower silver content in the period, resulting in refined lead and silver production declining substantially by 45% and 77%, respectively, compared with a year ago. Refined zinc production was 7% lower due to temporary maintenance issues in the zinc roasters. Profit at Trail Operations was also negatively affected by historically low treatment and refining charges and increased electricity costs. At Red Dog, zinc and lead production increased by 13% and 6%, respectively, compared to a year ago as a result of strong operational performance with higher than planned throughput.

In our energy business unit, both production volumes and product quality on start-up at the Fort Hills mine have exceeded our expectations. Bitumen production from the first two secondary extraction trains at Fort Hills commenced in the first quarter of 2018, followed by the third and final train in May. All commissioning and construction activities are now complete. In the second quarter, we concluded that Fort Hills was operational and results from Fort Hills are included in our consolidated results from June 1, 2018.

Realized prices and operating results in the fourth quarter were significantly affected by a material decline in global benchmark crude oil prices and the widening of Canadian heavy blend differentials, for WCS. In addition, costs associated with diluent increased significantly during the fourth quarter of 2018 due to a seasonal increase in diluent consumption and unusual widening in the spread between diluent and WCS. As a result of the decline in prices, we recorded inventory write-downs during the fourth quarter of approximately \$34 million.

Our profit attributable to shareholders was \$433 million, or \$0.75 per share, in the fourth quarter compared with \$740 million, or \$1.28 per share, a year ago.

Cash flow from operations was \$1.4 billion in the fourth quarter, similar to \$1.5 billion a year ago.

Outlook

The sales of our products are denominated in U.S. dollars while a significant portion of our expenses are incurred in local currencies, particularly the Canadian dollar and the Chilean peso. Foreign exchange fluctuations can have a significant effect on our operating margins, unless such fluctuations are offset by related changes to commodity prices.

Our U.S. dollar denominated debt is subject to revaluation based on changes in the Canadian/U.S. dollar exchange rate. As at December 31, 2018, \$2.6 billion of our U.S. dollar denominated debt is designated as a hedge against our foreign operations that have a U.S. dollar functional currency. As a result, any foreign exchange gains or losses arising on that amount of our U.S. dollar debt are recorded in other comprehensive income, with the remainder being charged to profit.

Commodity markets are volatile. Prices can change rapidly and customers can alter shipment plans. This can have a substantial effect on our business and financial results. Demand fundamentals, especially for steelmaking coal, refined zinc and refined copper, remain strong and prices for steelmaking coal rose substantially in the past year, contributing additional revenues and cash flows. Production and logistics disruptions in a number of the coal producing regions continued to have an effect on available supplies and market prices. Recent uncertainty in global markets arising from government policy changes, including tariffs and the potential for trade disputes, may have a significant positive or negative effect on the various products we produce. Price volatility will continue, but over the long term, the industrialization of emerging economies,

as well as infrastructure replacement in developed economies, will continue to be a major factor in the demand for the commodities we produce.

While price volatility remains a significant factor in our industry, we have taken significant steps to insulate our company from its effects. We have improved operations and made selective short-term decisions to maximize production more specifically in our steelmaking coal operations to capture significant gross profit cash margins. We have strengthened our balance sheet and credit ratings by reducing debt. Further, the supply and demand balance for our products is favourable. Combined, these factors are significant positives for the outlook for our company.

Commodity Prices and Sensitivities

Commodity prices are a key driver of our profit and cash flows. On the supply side, the depleting nature of ore reserves, difficulties in finding new ore-bodies, the permitting processes and the availability of skilled resources to develop projects, as well as infrastructure constraints, political risk and significant cost inflation, may continue to have a moderating effect on the growth in future production for the industry as a whole.

The sensitivity of our annual profit attributable to shareholders and EBITDA to changes in the Canadian/U.S. dollar exchange rate and commodity prices, before pricing adjustments, based on our current balance sheet, our expected 2019 mid-range production estimates, current commodity prices and a Canadian/U.S. dollar exchange rate of \$1.32, is as follows:

	2019 Mid-Range Production Estimates ⁽¹⁾	Change	Estimated Effect of Change On Profit ⁽²⁾	Estimated Effect on EBITDA ⁽²⁾
US\$ exchange		CAD\$0.01	\$ 48 million	\$ 76 million
Steelmaking coal (million tonnes)	26.25	US\$1/tonne	\$ 20 million	\$ 31 million
Copper (thousand tonnes)	300.0	US\$0.01/lb.	\$ 5 million	\$ 8 million
Zinc (thousand tonnes) ⁽³⁾	942.5	US\$0.01/lb.	\$ 10 million	\$ 13 million
WCS (million bbl) ⁽⁴⁾	13.0	US\$1/bbl	\$ 12 million	\$ 17 million
WTI ⁽⁵⁾		US\$1/bbl	\$ 9 million	\$ 12 million

Notes:

- (1) All production estimates are subject to change based on market and operating conditions.
- (2) The effect on our profit attributable to shareholders and on EBITDA of commodity price and exchange rate movements will vary from quarter to quarter depending on sales volumes. Our estimate of the sensitivity of profit and EBITDA to changes in the U.S. dollar exchange rate is sensitive to commodity price assumptions.
- (3) Zinc includes 307,500 tonnes of refined zinc and 635,000 tonnes of zinc contained in concentrate.
- (4) Bitumen volumes from our energy business unit.
- (5) Our WTI oil price sensitivity takes into account our interest in Fort Hills for respective change in revenue, partially offset by the effect of the change in diluent purchase costs as well as the effect on the change in operating costs across our business units, as our operations use a significant amount of diesel fuel.

2019 Production and Other Guidance

Our steelmaking coal production in 2019 is expected to be in the range of 26.0 to 26.5 million tonnes, compared with 26.2 million tonnes produced in 2018. Our actual production will depend primarily on customer demand for deliveries of steelmaking coal. Depending on market conditions and the sales outlook, we may adjust our production plans.

Our copper production for 2019 is expected to be in the range of 290,000 to 310,000 tonnes, compared with 293,900 tonnes produced in 2018. Copper production at Highland Valley Copper is expected to increase approximately 17,000 tonnes as a result of higher ore grades. Our share of production from Antamina and Carmen de Andacollo is expected to remain similar to 2018 levels.

Our zinc in concentrate production in 2019 is expected to be in the range of 620,000 to 650,000 tonnes, compared with 705,000 tonnes produced in 2018. Red Dog's production is expected to be between 535,000 to 555,000 tonnes, approximately 7% lower than 2018 production levels. Our share of Antamina's zinc production in 2019 is expected to decrease by approximately 25,000 tonnes. Refined zinc production in 2019 from our Trail Operations is expected to be in the range of 305,000 to 310,000 tonnes, compared with 302,900 tonnes produced in 2018.

Our share of bitumen production in 2019 is expected to be in the range of 12 to 14 million barrels (33,000 to 38,000 barrels per day), including estimated production curtailments. The high end of our guidance reflects the Government of Alberta's production curtailments being lifted in the second quarter of 2019.

In 2019, we expect to spend approximately \$140 million on research and development initiatives including our Ideas at Work technology and innovation fund, projects that could reduce our energy consumption and greenhouse gas emissions and the continued advancement of research and development of alternative water treatment strategies, including with respect to SRF technology.

We will apply IFRS 16, Leases (IFRS 16) from January 1, 2019 and expect to record additional leases on our consolidated balance sheet, which will increase our debt and property, plant and equipment balances. As a result of recognizing additional lease liabilities and right of use assets, we expect a reduction in our cost of sales, as operating lease expense will be replaced by depreciation expense and finance expense.

Guidance

Production Guidance

The table below shows our share of production of our principal products for 2018, our guidance for production in 2019 and our guidance for production for the following three years.

Units in thousand tonnes (excluding steelmaking coal, molybdenum and bitumen)	2018	2019 Guidance	Three-Year Guidance 2020–2022
Principal Products			
Steelmaking coal (million tonnes)	26.2	26.0–26.5	26.5–27.5
Copper ⁽¹⁾⁽²⁾⁽³⁾			
Highland Valley Copper	100.8	115–120	135–155
Antamina	100.4	95–100	90–95
Carmen de Andacollo	67.2	62–67	60
Quebrada Blanca ⁽⁵⁾	25.5	20–23	–
	293.9	290–310	285–305
Zinc ⁽¹⁾⁽²⁾⁽⁴⁾			
Red Dog	583.2	535–555	500–520
Antamina	92.1	65–70	95–110
Pend Oreille	29.7	20–30	–
	705.0	620–650	600–630
Refined zinc			
Trail Operations	302.9	305–310	310–315
Bitumen (million barrels) ⁽²⁾⁽⁶⁾⁽⁷⁾			
Fort Hills	6.8	12–14	14
Other Products			
Lead ⁽¹⁾			
Red Dog	98.4	85–90	85–100
Refined lead			
Trail Operations	61.0	70–75	85–95
Molybdenum (million pounds) ⁽¹⁾⁽²⁾			
Highland Valley Copper	8.7	6.0	4.0–5.0
Antamina	2.3	2.0	2.0–3.0
	11.0	8.0	6.0–8.0
Refined silver (million ounces)			
Trail Operations	11.6	13–14	N/A

Notes:

- (1) Metal contained in concentrate.
- (2) We include 100% of production and sales from our Quebrada Blanca and Carmen de Andacollo mines in our production and sales volumes, even though we own 90% of these operations, because we fully consolidate their results in our financial statements. We include 22.5% and 21.3% of production and sales from Antamina and Fort Hills, respectively, representing our proportionate ownership interest in these operations.
- (3) Copper production includes cathode production at Quebrada Blanca and Carmen de Andacollo.
- (4) Total zinc includes co-product zinc production from our copper business unit.
- (5) Excludes production from QB2 for three-year guidance 2020–2022.
- (6) Results for 2018 are effective from June 1, 2018.
- (7) The 2020–2022 bitumen production guidance does not include potential near-term debottlenecking opportunities. See energy business unit for more information.

Sales Guidance

The table below shows our sales for the last quarter and our sales guidance for the next quarter for selected primary products.

	Q4 2018	Q1 2019 Guidance
Steelmaking coal (million tonnes)	6.6	6.1–6.3
Zinc (thousand tonnes) ⁽¹⁾		
Red Dog	175.7	125–130

Note:

(1) Metal contained in concentrate.

Unit Cost Guidance

The table below reports our unit costs for selected principal products for 2018 and our guidance for unit costs for selected principal products in 2019.

(Per unit costs — CAD\$/tonne)	2018	2019 Guidance
Steelmaking coal⁽¹⁾		
Adjusted site cost of sales ⁽⁵⁾	\$ 62	\$ 62–65
Transportation costs	37	37–39
Unit costs ⁽⁵⁾	\$ 99	\$ 99–104
Copper⁽²⁾		
Total cash unit costs ⁽⁵⁾ (US\$/lb.)	\$ 1.74	\$ 1.70–1.80
Net cash unit costs ⁽³⁾⁽⁵⁾ (US\$/lb.)	\$ 1.23	\$ 1.45–1.55
Zinc⁽⁴⁾		
Total cash unit costs ⁽⁵⁾ (US\$/lb.)	\$ 0.49	\$ 0.50–0.55
Net cash unit costs ⁽³⁾⁽⁵⁾ (US\$/lb.)	\$ 0.31	\$ 0.35–0.40
Energy (bitumen)		
Adjusted operating costs ⁽⁵⁾ (CAD\$/barrel)	\$ 32.89	\$ 26–29

Notes:

- (1) Steelmaking coal unit costs are reported in Canadian dollars per tonne. Steelmaking coal unit cost of sales include site costs, transport costs, and other and does not include capitalized stripping or capital expenditures. See "Use of Non-GAAP Financial Measures" section for further information.
- (2) Copper unit costs are reported in U.S. dollars per payable pound of metal contained in concentrate. Copper total cash costs after by-product margins include adjusted cash cost of sales, smelter processing charges and cash margin for by-products including co-products. Assumes a zinc price of US\$1.30 per pound, a molybdenum price of US\$12 per pound, a silver price of US\$16.00 per ounce, a gold price of US\$1,250 per ounce and a Canadian/U.S. dollar exchange rate of \$1.30. See "Use of Non-GAAP Financial Measures" section for further information.
- (3) After co-product and by-product margins.
- (4) Zinc unit costs are reported in U.S. dollars per payable pound of metal contained in concentrate. Zinc total cash costs after by-product margins are mine costs including adjusted cash cost of sales, smelter processing charges and cash margin for by-products. Assumes a lead price of US\$1.00 per pound, a silver price of US\$16.00 per ounce and a Canadian/U.S. dollar exchange rate of \$1.30. By-products include both by-products and co-products.
- (5) Non-GAAP Financial Measure. See "Use of Non-GAAP Financial Measures" section for further information and reconciliation.

Capital Expenditure Guidance

The table below reports our capital expenditures for 2018 and our guidance for capital expenditures in 2019.

(Teck's share in \$ millions)	2018	2019 Guidance
Sustaining		
Steelmaking coal ⁽¹⁾	\$ 232	\$ 540
Copper	157	240
Zinc	225	170
Energy	21	60
Corporate	10	5
	\$ 645	\$ 1,015
Major Enhancement		
Steelmaking coal ⁽²⁾	\$ 230	\$ 410
Copper	62	70
Zinc	107	60
Energy	69	100
	\$ 468	\$ 640
New Mine Development		
Copper ⁽³⁾	\$ 56	\$ 130
Zinc	38	30
Energy	285	30
	\$ 379	\$ 190
Total		
Steelmaking coal	\$ 462	\$ 950
Copper	275	440
Zinc	370	260
Energy	375	190
Corporate	10	5
	\$ 1,492	\$ 1,845
QB2 capital expenditures	\$ 414	\$ 1,930
Total before SMM and SC contributions	\$ 1,906	\$ 3,775
Estimated SMM and SC contributions to capital expenditures ⁽⁴⁾	–	(1,585)
Total Teck spend	\$ 1,906	\$ 2,190

Notes:

- (1) For steelmaking coal, sustaining capital includes Teck's share of water treatment charges of \$57 million in 2018. Sustaining capital guidance includes Teck's share of water treatment charges related to the Elk Valley Water Quality Plan, which are approximately \$235 million in 2019.
- (2) For steelmaking coal major enhancement capital guidance includes \$210 million relating to the facility upgrade at Neptune Bulk Terminals that will be funded by Teck.
- (3) For copper, new mine development guidance for 2019 includes early scoping studies for QB3, Zafranal, San Nicolás and Galore Creek.
- (4) Total estimated SMM and SC contributions are \$1.77 billion. The difference will be in cash at December 31, 2019. Total estimated contributions are US\$1.2 billion as disclosed and US\$142 million for their share of expenditures from January 1, 2019 to March 31, 2019.

Consistent with our direct funding of the capital expenditures, we have included our investments in both sustaining and major expansion at Neptune Bulk Terminals in our capital expenditures and guidance going forward. This is consistent with our presentation of these items in previous years when we funded significant capital projects, most recently in 2013.

Capital Expenditure Guidance — Capitalized Stripping

(Teck's share in CAD\$ millions)	2018	2019 Guidance
Capitalized Stripping		
Steelmaking coal	\$ 507	\$ 410
Copper	161	175
Zinc	39	45
	\$ 707	\$ 630

Other Information

Carbon Pricing Policies and Associated Costs

Across our operations, the most significant carbon pricing action has taken place in Canada. In 2018, our most material carbon pricing policy impacts were related to B.C.'s carbon tax. In 2018, the Province of B.C. increased the carbon tax by \$5 per tonne of CO₂-equivalent (CO₂e) from \$30 to \$35. This price is expected to increase by \$5 per tonne of CO₂e per year until reaching \$50 per tonne of CO₂e. The B.C. Government also made a commitment to address impacts on emissions-intensive, trade-exposed industries to ensure that B.C. operations maintain their competitiveness and to minimize carbon leakage.

On January 1, 2018, Alberta introduced the Carbon Competitiveness Incentive Regulation, an industry-specific carbon pricing policy requiring large emitters, and other facilities that have opted in, to reduce their emissions intensity below a prescribed level, or to purchase emissions credits in concert with or as an alternative to physical abatement, with significant penalties for failure to achieve compliance. In June 2018, the Government of Canada introduced the *Greenhouse Gas Pollution Pricing Act* that establishes a federal carbon levy for any province or territory that has not implemented a compliant carbon-pricing regime. Federal carbon levy rates will start with a minimum price of \$10 per tonne in 2018, increasing \$10 per year to \$50 per tonne by 2022. The *Greenhouse Gas Pollution Pricing Act* comes into effect in April 2019 and will only apply in provinces or territories whose policies are not deemed sufficiently similar. Both B.C.'s and Alberta's policies meet these requirements at this time, and as a result, the national carbon pricing regulations will not apply to our operations.

The cost of compliance with various climate change regulations will ultimately be determined by the regulations themselves and by the markets that evolve for carbon credits and offsets. Teck's greenhouse gas emissions attributable to our operations for 2018 are estimated to be approximately 2.9 million tonnes (CO₂e). The most material indirect emissions associated with our activities are those from the use of our steelmaking coal by our customers. Based on our 2018 sales volumes, emissions from the use of our steelmaking coal would have been approximately 76 million tonnes of CO₂.

For 2018, our seven B.C.-based operations incurred \$58.8 million in British Columbia provincial carbon tax and our Cardinal River Operations in Alberta paid \$1.2 million in carbon costs, primarily from our use of coal, diesel fuel and natural gas.

We will continue to assess the potential implications of the updated policies on our operations and projects.

Financial Instruments and Derivatives

We hold a number of financial instruments, derivatives and contracts containing embedded derivatives,

which are recorded on our consolidated balance sheet at fair value with gains and losses in each period included in other comprehensive income (loss) in the year and profit for the period on our consolidated statements of income and consolidated statements of other comprehensive income, as appropriate. The most significant of these instruments are investments in marketable equity and debt securities, commodity swap contracts, metal-related forward contracts, settlement receivables and payables, embedded debt prepayment options, and gold stream and silver stream embedded derivatives. Some of our gains and losses on metal-related financial instruments are affected by smelter price participation and are taken into account in determining royalties and other expenses. All are subject to varying rates of taxation, depending on their nature and jurisdiction. Further information about our financial instruments, derivatives and contracts containing embedded derivatives and associated risks is outlined in Note 28 to our 2018 audited annual consolidated financial statements.

Areas of Judgment and Critical Accounting Estimates

In preparing our consolidated financial statements, we make judgments in applying our accounting policies. The judgments that have the most significant effect on the amounts recognized in our financial statements are outlined below. In addition, we make assumptions about the future in deriving estimates used in preparing our consolidated financial statements. We have outlined below information about assumptions and other sources of estimation uncertainty as at December 31, 2018 that have a risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next year.

a) Areas of Judgment

Assessment of Impairment Indicators

Judgment is required in assessing whether certain factors would be considered an indicator of impairment or impairment reversal. We consider both internal and external information to determine whether there is an indicator of impairment or impairment reversal present and, accordingly, whether impairment testing is required. The information we consider in assessing whether there is an indicator of impairment or impairment reversal includes, but is not limited to, market transactions for similar assets, commodity prices, interest rates, inflation rates, our market capitalization, reserves and resources, mine plans and operating results. Refer to the impairment testing section below for further detail on our assessment of impairment indicators in 2018 and 2017.

Property, Plant and Equipment — Determination of Available for Use Date

Judgment is required in determining the date that property, plant and equipment is available for use. An asset is available for use when it is in the location and condition necessary to operate in the manner intended by management. At that time, we commence depreciation of the asset and cease capitalization of borrowing costs. We consider a number of factors in making the determination of when an asset is available for use including, but not limited to, design capacity of the asset, production levels achieved, capital spending remaining and commissioning status. Fort Hills produced first oil in January 2018 and was considered available for use as at June 1, 2018. When concluding that these assets were available for use at June 1, 2018, we considered whether all three secondary extraction trains were running as expected, whether the production and product quality were consistent with expectations, and the status of asset commissioning. We have included the operating results for Fort Hills in our consolidated statements of income from that date forward.

Joint Arrangements

We are a party to a number of arrangements over which we do not have control. Judgment is required in determining whether joint control over these arrangements exists and, if so, which parties have joint control and whether each arrangement is a joint venture or joint operation. In assessing whether we have joint control, we analyze the activities of each arrangement and determine which activities most significantly affect the returns of the arrangement over its life. These activities are determined to be the relevant activities of the arrangement. If unanimous consent is required over the decisions about the relevant activities, the parties whose consent is required would have joint control over the arrangement. The judgments around which activities are considered the relevant activities of the arrangement are subject to analysis by each of the parties to the arrangement and may be interpreted differently. When performing this assessment, we generally consider decisions about activities such as managing the asset while it is being designed, developed and constructed, during its operating life and during the closure period. We may also consider other activities including the approval of budgets, expansion and disposition of assets, financing, significant operating and capital expenditures, appointment of key management personnel, representation on the Board of Directors and other items. When circumstances or contractual terms change, we reassess the control group and the relevant activities of the arrangement.

If we have joint control over the arrangement, an assessment of whether the arrangement is a joint venture or joint operation is required. This assessment is based on whether we have rights to the assets, and obligations for the liabilities, relating to the arrangement or whether we have rights to the net assets of the arrangement. In making this determination, we review the legal form of the arrangement, the terms of the contractual arrangement and other facts and circumstances. In a situation where the legal form and the terms of the contractual arrangement do not give us rights to the assets and obligations for the liabilities, an assessment of other facts and circumstances is required, including whether the activities of the arrangement are primarily designed for the provision of output to the parties and whether the parties are substantially the only source of cash flows contributing to the arrangement. The consideration of other facts and circumstances may result in the conclusion that a joint arrangement is a joint operation. This conclusion requires judgment and is specific to each arrangement. Other facts and circumstances have led us to conclude that Antamina and Fort Hills are joint operations for the purposes of our 2018 audited annual consolidated financial statements. The other facts and circumstances considered for both of these arrangements include the provisions of output to the parties of the joint arrangements and the funding obligations. For both Antamina and Fort Hills, we will take our share of the output from the assets directly over the life of the arrangement. We have concluded that this gives us direct rights to the assets and obligations for the liabilities of these arrangements proportionate to our ownership interests.

Streaming Transactions

When we enter into a long-term streaming arrangement linked to production at specific operations, judgment is required in assessing the appropriate accounting treatment for the transaction on the closing date and in future periods. We consider the specific terms of each arrangement to determine whether we have disposed of an interest in the reserves and resources of the respective operation or executed some other form of arrangement. This assessment considers what the counterparty is entitled to and the associated risks and rewards attributable to them over the life of the operation. These include the contractual terms related to the total production over the life of the arrangement as compared to the expected production over the life of the mine, the percentage being sold, the percentage of payable metals produced, the commodity price referred to in the ongoing payment and any guarantee relating to the upfront payment if production ceases.

For our silver and gold streaming arrangements entered into in 2015, there is no guarantee associated with the upfront payment. We have concluded that control of the rights to the silver and gold mineral interests were transferred to the buyer when the contracts came into effect at Antamina and Carmen de Andacollo, respectively. Therefore, we consider these arrangements a disposition of a mineral interest.

Any gains from the sale of mineral properties are recognized in accordance with IFRS 15, *Revenue from Contracts with Customers* (IFRS 15). For both streaming transactions, the total transaction price less costs was allocated to the identified performance obligations based on their estimated stand-alone selling prices. The performance obligations include the interest in the reserves and resources of the operation, mining, refining and delivery services. The allocation involved the use of a variety of estimates in a discounted cash flow model to estimate the stand-alone selling price of the mineral interest. The significant estimates included expected commodity prices, production costs, discount rates and mine plans. A residual value approach was used to estimate the selling prices of mining services.

Based on our judgment, control of the interest in the reserves and resources transferred to the buyer when the contract was executed. At that time, we had the right to payment, the customer was entitled to the commodities, the buyer had no recourse in requiring Teck to mine the product, and the buyer had significant risks and rewards of ownership of the reserves and resources. The allocation of proceeds under IFRS 15 resulted in a net gain allocated to the reserves and resources for the Antamina silver stream transaction. This resulted in an IFRS 15 transition pre-tax adjustment of \$755 million to retained earnings, as the amount was previously recorded as deferred consideration. There was no net gain or loss adjustment on application of IFRS 15 to the Carmen de Andacollo gold stream.

We recognize the amount of consideration related to refining, mining and delivery services as the work is performed.

Deferred Tax Assets and Liabilities

Judgment is required in assessing whether deferred tax assets and certain deferred tax liabilities are recognized on the balance sheet and what tax rate is expected to be applied in the year when the related temporary differences reverse, particularly in regard to the utilization of tax loss carryforwards. We also evaluate the recoverability of deferred tax assets based on an assessment of our ability to use the underlying future tax deductions before they expire against future taxable income. Deferred tax liabilities arising from temporary differences on investments in subsidiaries, joint ventures and associates are recognized unless the reversal of the temporary differences is not expected to occur in the foreseeable future and can be controlled. Judgment is also required on the application of income tax legislation. These judgments are subject to risk and uncertainty and could result in an adjustment to the deferred tax provision and a corresponding credit or charge to profit.

b) Sources of Estimation Uncertainty

Impairment Testing

When impairment testing is required, discounted cash flow models are used to determine the recoverable amount of respective assets. These models are prepared internally with assistance from third-party advisors when required. When market transactions for comparable assets are available, these are considered in determining the recoverable amount of assets. Significant assumptions used in preparing discounted cash flow models include commodity prices, reserves and resources, mine plans, operating costs, capital expenditures, discount rates, foreign exchange rates and inflation rates. These inputs are based on

management's best estimates of what an independent market participant would consider appropriate. Changes in these inputs may alter the results of impairment testing, the amount of the impairment charges or reversals recorded in the statement of income and the resulting carrying values of assets.

We allocate goodwill arising from business combinations to the cash-generating unit (CGU) or group of CGUs acquired that is expected to receive the benefits from the business combination. When performing annual goodwill impairment tests, we are required to determine the recoverable amount of each CGU or group of CGUs to which goodwill has been allocated. Our Quebrada Blanca CGU and steelmaking coal CGU have goodwill allocated to them. The recoverable amount of each CGU or group of CGUs is determined as the higher of its fair value less costs of disposal and its value in use.

Asset Impairments and Impairment Reversals

(\$ in millions)	2018	2017
Steelmaking coal CGU	\$ —	\$ (207)
Other	41	44
Total	\$ 41	\$ (163)

Steelmaking Coal CGU

In 2018, there were no indicators of impairment or impairment reversal relating to our steelmaking coal CGU. We performed our annual goodwill impairment testing for the steelmaking coal CGU as at October 31, 2018, which is outlined in more detail below.

As at December 31, 2017, we recorded a pre-tax impairment reversal of \$207 million (\$131 million after tax) related to one of the mines in our steelmaking coal CGU. The estimated post-tax recoverable amount of this mine was significantly higher than the carrying value. This impairment reversal arose as a result of changes in short-term and long-term market participant price expectations for steelmaking coal and expected future operating cost estimates included in our annual goodwill impairment testing.

Other

During the year ended December 31, 2018, we recorded other asset impairments of \$41 million, of which \$31 million is related to capitalized exploration expenditures that are not expected to be recovered and \$10 million (\$44 million—2017) is related to Quebrada Blanca assets that will not be recovered through use.

Annual Goodwill Impairment Testing

In 2018, we performed our annual goodwill impairment testing at October 31 and did not identify any goodwill impairment losses.

Given the nature of expected future cash flows used to determine the recoverable amount, a material change could occur over time, as the cash flows are significantly affected by the key assumptions described as follows.

Sensitivity Analysis

Our annual goodwill impairment test carried out at October 31, 2018 resulted in the recoverable amount of our steelmaking coal CGU exceeding its carrying value by approximately \$6.7 billion. The recoverable amount of our steelmaking coal CGU is most sensitive to the long-term Canadian dollar steelmaking coal price assumption. In isolation, a 15% decrease in the long-term Canadian dollar steelmaking coal price would result in the recoverable amount of the steelmaking coal CGU being equal to the carrying value.

Our annual goodwill impairment test for the Quebrada Blanca CGU carried out at October 31, 2018 resulted in a recoverable amount that exceeded the carrying value and no goodwill impairment losses were identified. Subsequent to our annual goodwill impairment test, Teck announced the QB2 partnering transaction with SMM and SC. We compared the implied fair value that can be derived from the announced market transaction to the carrying value for our Quebrada Blanca CGU and concluded that the fair value exceeded our carrying value, including goodwill. In deriving a fair value for QBSA relative to the interest subscribed for by SMM and SC, we adjusted the transaction value to reflect the additional value attributed to a controlling interest.

Key Assumptions

The following are the key assumptions used in our impairment testing calculations during the years ended December 31, 2018 and 2017:

	2018	2017
Steelmaking coal prices	Current price used in initial year, decreased to a long-term price in 2023 of US\$150 per tonne	Current price used in initial year, decreased to a long-term price in 2022 of US\$140 per tonne
Copper prices	Current price used in initial year, increased to a long-term price in 2023 of US\$3.00 per pound	Current price used in initial year, decreased to a long-term price in 2022 of US\$3.00 per pound
Discount rate	6.0%	5.9%
Long-term foreign exchange rate	1 U.S. to 1.25 Canadian dollars	1 U.S. to 1.25 Canadian dollars
Inflation rate	2%	2%

Commodity Prices

Commodity price assumptions are based on a number of factors, including forward curves in the near term, and are benchmarked with external sources of information, including information published by our peers and market transactions, where possible, to ensure they are within the range of values used by market participants.

Discount Rates

Discount rates are based on a mining weighted average cost of capital for all mining operations. For the year ended December 31, 2018, we used a discount rate of 6.0% real, 8.1% nominal post-tax (2017 — 5.9% real, 8.0% nominal post-tax) for mining operations and goodwill.

Foreign Exchange Rates

Foreign exchange rates are benchmarked with external sources of information based on a range used by market participants. Long-term foreign exchange assumptions are from year 2023 onwards for analysis performed in the year ended December 31, 2018, and are from year 2022 onwards for analysis performed in the year ended December 31, 2017.

Inflation Rates

Inflation rates are based on average historical inflation for the location of each operation and long-term government targets.

Reserves and Resources

Future mineral production is included in projected cash flows based on mineral reserve and resource estimates, and on exploration and evaluation work undertaken by appropriately qualified persons.

Operating Costs and Capital Expenditures

Operating costs and capital expenditures are based on life of mine plans and internal management forecasts. Cost estimates incorporate management experience and expertise, current operating costs, the nature and location of each operation, and the risks associated with each operation. Future capital expenditures are based on management's best estimate of expected future capital requirements, which are generally for the extraction and processing of existing reserves and resources. All committed and anticipated capital expenditures based on future cost estimates have been included in the projected cash flows. Operating cost and capital expenditure assumptions are continuously subjected to ongoing optimization and review by management.

Recoverable Amount Basis

In the absence of a relevant market transaction, we estimate the recoverable amount of our CGUs on a fair value less costs of disposal (FVLCD) basis using a discounted cash flow methodology and taking into account assumptions likely to be made by market participants unless it is expected that the value-in-use methodology would result in a higher recoverable amount. For the asset impairment, impairment reversal and goodwill impairment analyses performed in 2018 and 2017, we have applied the FVLCD basis.

Estimated Recoverable Reserves and Resources

Mineral and oil reserve and resource estimates are based on various assumptions relating to operating matters as set forth in National Instrument 43-101, Standards of Disclosure for Mineral Projects and National Instrument 51-101, Standards of Disclosure for Oil and Gas Activities. Assumptions used include production costs, mining and processing recoveries, cut-off grades, marketing and sales, long-term commodity prices and, in some cases, exchange rates, inflation rates and capital costs. Cost estimates are based on pre-feasibility or feasibility study estimates or operating history. Estimates are prepared by, or under the supervision of, appropriately qualified persons, or qualified reserves evaluators, but will be affected by forecasted commodity prices, inflation rates, exchange rates, capital and production costs, and recoveries, among other factors. Estimated recoverable reserves and resources are used to determine the depreciation of property, plant and equipment at operating mine sites, in accounting for capitalized production stripping costs, in performing impairment testing, and in forecasting the timing of the payment of decommissioning and restoration costs. Therefore, changes in the assumptions used could affect the carrying value of assets, depreciation and impairment charges recorded in the statement of income, and the carrying value of the decommissioning and restoration provision.

Decommissioning and Restoration Provisions

The decommissioning and restoration provision (DRP) is based on future cost estimates using information available at the balance sheet date. The DRP represents the present value of estimated costs of future decommissioning and other site restoration activities. The DRP is adjusted at each reporting period for changes to factors such as the expected amount of cash flows required to discharge the liability, the timing of such cash flows and the credit-adjusted discount rate. The DRP requires other significant estimates and

assumptions, including the requirements of the relevant legal and regulatory framework and the timing, extent and costs of required decommissioning and restoration activities. To the extent the actual costs differ from these estimates, adjustments will be recorded and the income statement may be affected.

Provision for Income Taxes

We calculate current and deferred tax provisions for each of the jurisdictions in which we operate. Actual amounts of income tax expense are not final until tax returns are filed and accepted by the relevant authorities. This occurs subsequent to the issuance of our financial statements, and the final determination of actual amounts may not be completed for a number of years. Therefore, profit in subsequent periods will be affected by the amount that estimates differ from the final tax return.

Deferred Tax Assets and Liabilities

Assumptions about the generation of future taxable profits and repatriation of retained earnings depend on management's estimates of future production and sales volumes, commodity prices, reserves and resources, operating costs, decommissioning and restoration costs, capital expenditures, dividends and other capital management transactions. These estimates could result in an adjustment to the deferred tax provision and a corresponding credit or charge to profit.

Adoption of New Accounting Standards and Accounting Developments

Adoption of New Accounting Standards

We adopted IFRS 15 and IFRS 9, Financial Instruments (IFRS 9), which became effective January 1, 2018. Effective October 1, 2018, we also adopted the hedging requirements section of IFRS 9. We have adopted these new IFRS pronouncements in accordance with the transitional provisions outlined in the respective standards.

IFRS 9 was adopted prospectively from January 1, 2018 and did not affect our previously reported figures for 2017. There were no measurement changes to our financial assets or financial liabilities as a result of adopting IFRS 9. In addition, the adoption of the hedging requirements section of IFRS 9 on October 1, 2018 did not affect our existing designated hedging relationships.

We adopted IFRS 15 on January 1, 2018 in accordance with the transitional provisions of the standard, applying a full retrospective approach in restating our prior period financial information. Based on our analysis, the timing and amount of our revenue from product sales did not change significantly under IFRS 15. For steelmaking coal sales where we have a shipment that is partially loaded on a vessel at a reporting date, we concluded that the performance obligation in these contracts is for the full shipment. Therefore, we cannot recognize revenue until the full shipment is loaded. This does not significantly affect the revenue recognized in a period. This is a timing difference only and does not change the amount of revenue recognized for the full shipment.

As part of our assessment of IFRS 15, we analyzed the treatment of freight services provided to customers subsequent to the transfer of control of the product sold. Under IFRS 15, in our view, these services represent performance obligations that should be recognized separately. For the performance obligation related to these freight services, we have concluded that we are the principal to the shipping of product in our refined metal sales and concentrate sales contracts and will continue to reflect the revenue in these arrangements on a gross basis. For certain of our steelmaking coal sales contracts, we have concluded that we are the agent to the ocean freight shipping of product due to the terms of the arrangement, and our

revenue will be reported on a net basis for these arrangements. There will be no effect on our gross profit, as the freight costs will be netted against revenue for these arrangements and not presented within cost of sales.

We have assessed the effects of IFRS 15 on our silver and gold streaming arrangements. At the date these transactions were completed, we accounted for the arrangements as the sale of a portion of our mineral interests at Antamina and Carmen de Andacollo, respectively. We did not recognize disposal gains on the transactions as a result of the requirements of the IFRS standards in effect at the dates of closing. Under the recognition and measurement principles of IFRS 15, any gain on these streaming transactions would have been recognized in full as control over the right to the silver or gold mineral interest transferred to the purchaser. Accordingly, we have recognized the deferred consideration recorded on our balance sheet through equity on transition to IFRS 15 as at January 1, 2017, resulting in an increase in equity of \$565 million, reduction in deferred consideration on the balance sheet of \$755 million and an increase in our deferred tax liabilities of \$190 million. We also reversed the amortization of the deferred consideration that was recorded as a reduction of cost of sales for the year ended December 31, 2017.

The tables in Note 32(a) to our audited consolidated financial statements for the year ended December 31, 2018 outline the adjustments to our financial statements resulting from the adoption of IFRS 15, described above, for all comparative periods presented, and includes a summary of changes to our significant accounting policies that resulted from the adoption of IFRS 15 and IFRS 9.

The adoption of these new IFRS pronouncements has resulted in adjustments to previously reported figures for 2017. Refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018 for further detail on the adjustments to previously reported figures and our assessment of the effect of adoption of these new IFRS pronouncements, including changes to our significant accounting policies that resulted from the adoption.

Accounting Developments

New IFRS pronouncements that have been issued but are not yet effective are listed below. We plan to apply the new standard or interpretation in the annual period for which it is required.

Leases

The International Accounting Standards Board (IASB) issued IFRS 16, Leases (IFRS 16), which eliminates the classification of leases as either operating or finance leases for a lessee. IFRS 16 is effective from January 1, 2019. Under IFRS 16, all leases will be recorded on the balance sheet for the lessee. The only exemptions to this will be for leases that are 12 months or less in duration or for leases of low-value assets. The requirement to record all leases on the balance sheet under IFRS 16 will increase “right-of-use” assets and lease liabilities on an entity’s financial statements. IFRS 16 will also change the nature of expenses relating to leases, as the straight-line lease expense previously recognized for operating leases will be replaced with depreciation expense for right-of-use assets and finance expense for lease liabilities. IFRS 16 includes an overall disclosure objective and requires a company to disclose (a) information about right-of-use assets and expenses and cash flows related to leases, (b) a maturity analysis of lease liabilities, and (c) any additional company-specific information that is relevant to satisfying the disclosure objective.

As at December 31, 2018, our review and assessment of IFRS 16 and the effect on our financial statements is nearing completion. Our work around identification of leases is substantially complete and we are currently finalizing our calculation and review of the lease balances under the requirements of IFRS 16. We are also

reviewing our processes and internal controls to ensure leases are properly identified and accounted for going forward. We will apply IFRS 16 as at January 1, 2019 using a cumulative catch-up approach where we will record leases prospectively from that date forward and will not restate comparative information. We will record right-of-use assets based on the lease liabilities determined as at January 1, 2019 and as a result, will not have a retained earnings adjustment on transition.

Conceptual Framework

In March 2018, the IASB issued a comprehensive set of concepts for financial reporting, the revised Conceptual Framework for Financial Reporting (revised Conceptual Framework), replacing the previous version of the Conceptual Framework issued in 2010. The purpose of the revised Conceptual Framework is to assist preparers of financial reports to develop consistent accounting policies for transactions or other events when no IFRS applies or IFRS allows a choice of accounting policies and to assist all parties to understand and interpret IFRS.

The revised Conceptual Framework sets out the objective of general purpose financial reporting; the qualitative characteristics of useful financial information; a description of the reporting entity and its boundary; definitions of an asset, a liability, equity, income and expenses and guidance on when to derecognize them; measurement bases and guidance on when to use them; concepts and guidance on presentation and disclosure; and concepts relating to capital and capital maintenance. The revised Conceptual Framework provides concepts and guidance that underpin the decisions the IASB makes when developing standards but is not in itself an IFRS standard and does not override any IFRS standard or any requirement of an IFRS standard. The revised Conceptual Framework is applicable to annual periods beginning on or after January 1, 2020 for preparers who develop an accounting policy based on the Conceptual Framework. We are currently assessing the effect of the revised Conceptual Framework on our financial statements.

Outstanding Share Data

As at February 12, 2019, there were approximately 559.7 million Class B subordinate voting shares and 7.8 million Class A common shares outstanding. In addition, there were approximately 19.6 million employee stock options outstanding, with exercise prices ranging between \$4.15 and \$58.80 per share. More information on these instruments, and the terms of their conversion, is set out in Note 23 to our 2018 audited financial statements.

Contractual and Other Obligations

(\$ in millions)	Less than 1 Year	2–3 Years	4–5 Years	More than 5 Years	Total
Principal and interest payments on debt	\$ 317	\$ 815	\$ 1,157	\$ 7,990	\$ 10,279
Operating leases ⁽¹⁾	113	105	57	164	439
Capital leases	50	84	63	556	753
Minimum purchase obligations ⁽²⁾					
Concentrate, equipment, supply and other purchases	683	168	35	36	922
Shipping and distribution	436	490	322	760	2,008
Energy contracts	260	530	546	3,666	5,002
NAB PILT and VIF payments ⁽⁷⁾	37	83	83	77	280
Pension funding ⁽³⁾	22	–	–	–	22
Other non-pension post-retirement benefits ⁽⁴⁾	15	32	34	311	392
Decommissioning and restoration provision ⁽⁵⁾	91	133	100	1,290	1,614
Other long-term liabilities ⁽⁶⁾	64	79	21	30	194
	\$ 2,088	\$ 2,519	\$ 2,418	\$ 14,880	\$ 21,905

Notes:

- (1) We lease road and port facilities from the Alaska Industrial Development and Export Authority, through which it ships metal concentrates produced at the Red Dog mine. Minimum lease payments are US\$18 million for the next 4 years and US\$6 million for the following 18 years and are subject to deferral and abatement for *force majeure* events.
- (2) The majority of our minimum purchase obligations are subject to continuing operations and *force majeure* provisions.
- (3) As at December 31, 2018, the company had a net pension asset of \$164 million, based on actuarial estimates prepared on a going concern basis. The amount of minimum funding for 2019 in respect of defined benefit pension plans is \$22 million. The timing and amount of additional funding after 2019 is dependent upon future returns on plan assets, discount rates and other actuarial assumptions.
- (4) We had a discounted, actuarially determined liability of \$392 million in respect of other non-pension post-retirement benefits as at December 31, 2018. Amounts shown are estimated expenditures in the indicated years.
- (5) We accrue environmental and reclamation obligations over the life of our mining operations, and amounts shown are estimated expenditures in the indicated years at fair value, assuming credit-adjusted risk-free discount rates between 6.49% and 7.99% and an inflation factor of 2.00%.
- (6) Other long-term liabilities include amounts for post-closure, environmental costs and other items.
- (7) On April 25, 2017, Teck Alaska entered into a 10-year agreement with the Northwest Arctic Borough (NAB) for payments in lieu of taxes (PILT). Payments under the agreement are based on a percentage of land, buildings and equipment at cost less accumulated depreciation. The effective date of this agreement was January 1, 2016 and this agreement expires on December 31, 2025. On April 25, 2017, Teck Alaska entered into a 10-year agreement with the Northwest Arctic Borough (NAB) for payments to a village improvement fund (VIF). Payments under the agreement are based on a percentage of earnings before income taxes, with 2017–2025 having minimum payments of \$4 million and maximum payments of \$8 million. The effective date of this agreement was January 1, 2016 and this agreement expires on December 31, 2025.

Disclosure Controls and Internal Control Over Financial Reporting

Disclosure Controls and Procedures

Disclosure controls and procedures are designed to provide reasonable assurance that information required to be disclosed in reports filed or submitted by us under U.S. and Canadian securities legislation is recorded, processed, summarized and reported within the time periods specified in those rules, and include controls and procedures designed to ensure that information required to be disclosed in reports filed or submitted by us under U.S. and Canadian securities legislation is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate, to permit timely decisions regarding required disclosure. Management, including the Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of the design and operation of our disclosure controls and procedures, as defined in the rules of the U.S. Securities and Exchange Commission and the Canadian Securities Administrators, as at December 31, 2018. Based on this evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as at December 31, 2018.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Any system of internal control over financial reporting, no matter how well-designed, has inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. Management has used the Committee of Sponsoring Organizations of the Treadway Commission (COSO) 2013 framework to evaluate the effectiveness of our internal control over financial reporting. Based on this assessment, management has concluded that as at December 31, 2018, our internal control over financial reporting was effective.

The effectiveness of our internal controls over financial reporting has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, who have expressed their opinion in their report included with our annual consolidated financial statements.

Use of Non-GAAP Financial Measures

Our financial results are prepared in accordance with International Financial Reporting Standards (IFRS). This document refers to a number of Non-GAAP Financial Measures, which are not measures recognized under IFRS in Canada and do not have a standardized meaning prescribed by IFRS or Generally Accepted Accounting Principles (GAAP) in the United States.

The Non-GAAP Measures described below do not have standardized meanings under IFRS, may differ from those used by other issuers, and may not be comparable to such measures as reported by others. These measures have been derived from our financial statements and applied on a consistent basis as appropriate. We disclose these measures because we believe they assist readers in understanding the results of our operations and financial position and are meant to provide further information about our financial results to investors. These measures should not be considered in isolation or used in substitute for other measures of performance prepared in accordance with IFRS.

Adjusted profit: For adjusted profit, we adjust profit attributable to shareholders as reported to remove the after-tax effect of certain types of transactions that in our judgment are not indicative of our normal operating activities or do not necessarily occur on a regular basis.

Adjusted basic earnings per share: Adjusted basic earnings per share is adjusted profit divided by average number of shares outstanding in the period.

Adjusted diluted earnings per share: Adjusted diluted earnings per share is adjusted profit divided by average number of fully diluted shares in a period.

EBITDA: EBITDA is profit attributable to shareholders before net finance expense, provision for income taxes, and depreciation and amortization.

Adjusted EBITDA: Adjusted EBITDA is EBITDA before the pre-tax effect of the adjustments that we make to adjusted profit attributable to shareholders as described above.

The above adjustments to profit attributable to shareholders and EBITDA highlight items and allow us and readers to analyze the rest of our results more clearly. We believe that disclosing these measures assists readers in understanding the ongoing cash generating potential of our business in order to provide liquidity to

fund working capital needs, service outstanding debt, fund future capital expenditures and investment opportunities, and pay dividends.

Gross profit before depreciation and amortization: Gross profit before depreciation and amortization is gross profit with the depreciation and amortization expense added back. We believe this measure assists us and readers to assess our ability to generate cash flow from our business units or operations.

Unit costs: Unit costs for our steelmaking coal operations are total cost of goods sold, divided by tonnes sold in the period, excluding depreciation and amortization charges. We include this information as it is frequently requested by investors and investment analysts who use it to assess our cost structure and margins and compare it to similar information provided by many companies in the industry.

Adjusted site cost of sales: Adjusted site cost of sales for our steelmaking coal operations is defined as the cost of the product as it leaves the mine excluding depreciation and amortization charges, outbound transportation costs and any one-time collective agreement charges and inventory write-down provisions.

Total cash unit costs: Total cash unit costs for our copper and zinc operations include adjusted cash costs of sales, as described above, plus the smelter and refining charges added back in determining adjusted revenue. This presentation allows a comparison of total cash unit costs, including smelter charges, to the underlying price of copper or zinc in order to assess the margin for the mine on a per unit basis.

Net cash unit costs: Net cash unit costs of principal product, after deducting co-product and by-product margins, are also a common industry measure. By deducting the co- and by-product margin per unit of the principal product, the margin for the mine on a per unit basis may be presented in a single metric for comparison to other operations. Readers should be aware that this metric, by excluding certain items and reclassifying cost and revenue items, distorts our actual production costs as determined under IFRS.

Adjusted cash costs of sales: Adjusted cash cost of sales for our copper and zinc operations is defined as the cost of the product delivered to the port of shipment, excluding depreciation and amortization charges, any one-time collective agreement charges or inventory write-down provisions, and by-product cost of sales. It is common practice in the industry to exclude depreciation and amortization, as these costs are non-cash, and discounted cash flow valuation models used in the industry substitute expectations of future capital spending for these amounts.

Adjusted operating costs: Adjusted operating costs for our energy business unit are defined as the costs of product as it leaves the mine, excluding depreciation and amortization charges, cost of diluent for blending to transport our bitumen by pipeline, cost of non-proprietary product purchased, and transportation costs of our product, and non-proprietary product and any one-time collective agreement charges or inventory write-down provisions.

Cash margins for by-products: Cash margins for by-products is revenue from by-products and co-products, less any associated cost of sales of the by-product and co-product. In addition, for our copper operations, by-product cost of sales also includes cost recoveries associated with our streaming transactions.

Adjusted revenue: Adjusted revenue for our copper and zinc operations excludes the revenue from co-products and by-products, but adds back the processing and refining charges to arrive at the value of the

underlying payable pounds of copper and zinc. Readers may compare this on a per unit basis with the price of copper and zinc on the LME.

Adjusted revenue for our energy business unit excludes the cost of diluent for blending and non-proprietary product revenues, but adds back Crown royalties to arrive at the value of the underlying bitumen.

Blended bitumen revenue: Blended bitumen revenue is revenue as reported for our energy business unit, but excludes non-proprietary product revenue, and adds back Crown royalties that are deducted from revenue.

Blended bitumen price realized: Blended bitumen price realized is blended bitumen revenue divided by blended bitumen barrels sold in the period.

Operating netback: Operating netbacks per barrel in our energy business unit are calculated as blended bitumen sales revenue net of diluent expenses (also referred to as bitumen price realized), less Crown royalties, transportation and operating expenses divided by barrels of bitumen sold. We include this information as investors and investment analysts use it to measure our profitability on a per barrel basis and compare it to similar information provided by other companies in the oil sands industry.

The debt-related measures outlined below are disclosed as we believe they provide readers with information that allows them to assess our credit capacity and the ability to meet our short and long-term financial obligations.

Net debt: Net debt is total debt, less cash and cash equivalents.

Debt to debt-plus-equity ratio: Debt to debt-plus-equity ratio takes total debt as reported and divides that by the sum of total debt plus total equity, expressed as a percentage.

Net debt to net debt-plus-equity ratio: Net debt to net debt-plus-equity ratio is net debt divided by the sum of net debt plus total equity, expressed as a percentage.

Debt to EBITDA ratio: Debt to EBITDA ratio takes total debt as reported and divides that by EBITDA for the 12 months ended at the reporting period, expressed as the number of times EBITDA needs to be earned to repay all of the outstanding debt.

Net debt to EBITDA ratio: Net debt to EBITDA ratio is the same calculation as the debt to EBITDA ratio, but using net debt as the numerator.

Reconciliation of Basic Earnings per share to Adjusted Basic Earnings per share

(Per share amounts)	2018	2017 ⁽¹⁾
Earnings per share	\$ 5.41	\$ 4.26
Add (deduct):		
Debt purchase losses	0.03	0.28
Debt prepayment option loss (gain)	0.05	(0.07)
Asset sales	(1.40)	(0.01)
Foreign exchange loss (gain)	(0.01)	(0.01)
Environmental provisions	0.02	0.10
Asset impairments (reversals)	0.05	(0.17)
Other	(0.02)	(0.02)
Adjusted earnings per share	\$ 4.13	\$ 4.36

Note:

(1) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Reconciliation of Diluted Earnings per share to Adjusted Diluted Earnings per share

(Per share amounts)	2018	2017 ⁽¹⁾
Diluted earnings per share	\$ 5.34	\$ 4.19
Add (deduct):		
Debt purchase losses	0.03	0.28
Debt prepayment option loss (gain)	0.05	(0.06)
Asset sales	(1.39)	(0.01)
Foreign exchange loss (gain)	(0.01)	(0.01)
Environmental provisions	0.02	0.10
Asset impairments (reversals)	0.05	(0.17)
Other	(0.02)	(0.02)
Adjusted diluted earnings per share	\$ 4.07	\$ 4.30

Note:

(1) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Reconciliation of Net Debt to EBITDA Ratio

(\$ in millions)	2018	2017 ⁽¹⁾
Profit attributable to shareholders	\$ 3,107	\$ 2,460
Finance expense net of finance income	219	212
Provision for income taxes	1,365	1,425
Depreciation and amortization	1,483	1,492
EBITDA	\$ 6,174	\$ 5,589
Total debt at period end	\$ 5,519	\$ 6,369
Less: cash and cash equivalents at period end	(1,734)	(952)
Net debt	\$ 3,785	\$ 5,417
Debt to EBITDA ratio	0.9	1.1
Net Debt to EBITDA ratio	0.6	1.0

Note:

(1) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Reconciliation of EBITDA and Adjusted EBITDA

(\$ in millions)	2018	2017 ⁽¹⁾
Profit attributable to shareholders	\$ 3,107	\$ 2,460
Finance expense net of finance income	219	212
Provision for income taxes	1,365	1,425
Depreciation and amortization	1,483	1,492
EBITDA	\$ 6,174	\$ 5,589
Add (deduct):		
Debt repurchase losses	26	216
Debt prepayment option (gains) losses	42	(51)
Asset sales	(885)	(7)
Foreign exchange (gains) losses	(16)	(5)
Environmental provisions	18	81
Asset impairments (reversals)	41	(163)
Other	(10)	–
Adjusted EBITDA	\$ 5,390	\$ 5,660

Note:

(1) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Reconciliation of Gross Profit (Loss) Before Depreciation and Amortization

(\$ in millions)	2018	2017 ⁽²⁾	2016
Gross profit	\$ 4,621	\$ 4,567	\$ 2,396
Depreciation and amortization	1,483	1,492	1,385
Gross profit before depreciation and amortization	\$ 6,104	\$ 6,059	\$ 3,781
Reported as:			
Steelmaking coal	\$ 3,770	\$ 3,732	\$ 2,007
Copper			
Highland Valley Copper	343	213	268
Antamina	794	670	409
Quebrada Blanca	26	50	24
Carmen de Andacollo	193	222	86
Other	(1)	(1)	1
	\$ 1,355	\$ 1,154	\$ 788
Zinc			
Trail Operations	91	209	241
Red Dog	990	971	749
Pend Oreille	(5)	19	–
Other	9	(26)	(6)
	\$ 1,085	\$ 1,173	\$ 984
Energy⁽¹⁾	\$ (106)	\$ –	\$ 2
Gross profit before depreciation and amortization	\$ 6,104	\$ 6,059	\$ 3,781

Notes:

(1) Energy results for the year ended December 31, 2018 are included from June 1, 2018.

(2) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Steelmaking Coal Unit Cost Reconciliation

(CAD\$ in millions, except where noted)	2018	2017 ⁽²⁾
Cost of sales as reported	\$ 3,309	\$ 3,000
Less:		
Transportation	(975)	(892)
Depreciation and amortization	(730)	(718)
Adjusted cash cost of sales	\$ 1,604	\$ 1,390
Tonnes sold (millions)	26.0	26.5
Per unit amounts — CAD\$/tonne		
Adjusted cash cost of sales	\$ 62	\$ 52
Transportation	37	34
Cash unit costs — CAD\$/tonne	\$ 99	\$ 86
US\$ amounts⁽¹⁾		
Average exchange rate (CAD\$ per US\$1.00)	\$ 1.30	\$ 1.30
Per unit amounts — US\$/tonne		
Adjusted cash cost of sales	\$ 47	\$ 40
Transportation	29	26
Cash unit costs — US\$/tonne	\$ 76	\$ 66

Notes:

(1) Average period exchange rates are used to convert to US\$/tonne equivalent.

(2) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Copper Unit Cost Reconciliation

(CAD\$ in millions, except where noted)	2018	2017 ⁽²⁾
Revenue as reported	\$ 2,714	\$ 2,400
By-product revenue (A)	(472)	(378)
Smelter processing charges (B)	157	180
Adjusted revenue	\$ 2,399	\$ 2,202
Cost of sales as reported	\$ 1,837	\$ 1,814
Less:		
Depreciation and amortization	(478)	(568)
Inventory (write-downs) provision reversal	(44)	12
Collective agreement charges	(5)	(15)
By-product cost of sales (C)	(61)	(54)
Adjusted cash cost of sales (D)	\$1,249	\$ 1,189
Payable pounds sold (millions) (E)	622.9	604.4
Per unit amounts — CAD\$/pound		
Adjusted cash cost of sales (D/E)	\$ 2.01	\$ 1.97
Smelter processing charges (B/E)	0.25	0.30
Total cash unit costs — CAD\$/pound	\$ 2.26	\$ 2.27
Cash margin for by-products — ((A-C)/E)	(0.66)	(0.54)
Net cash unit cost — CAD\$/pound	\$ 1.60	\$ 1.73
US\$ amounts⁽¹⁾		
Average exchange rate (CAD\$ per US\$1.00)	\$ 1.30	\$ 1.30
Per unit amounts — US\$/pound		
Adjusted cash cost of sales	\$ 1.55	\$ 1.52
Smelter processing charges	0.19	0.23
Total cash unit costs — US\$/pound	\$ 1.74	\$ 1.75
Cash margin for by-products	(0.51)	(0.42)
Net cash unit costs — US\$/pound	\$ 1.23	\$ 1.33

Notes:

(1) Average period exchange rates are used to convert to US\$/pound equivalent.

(2) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Zinc Unit Cost Reconciliation (mining operations⁽¹⁾)

(CAD\$ in millions, except where noted)	2018	2017 ⁽³⁾
Revenue as reported	\$ 3,094	\$ 3,496
Less:		
Trail Operations revenues as reported	(1,942)	(2,266)
Other revenues as reported	(8)	(8)
Add back: Inter-segment revenues as reported	650	635
	\$ 1,794	\$1,857
By-product revenues (A)	(316)	(400)
Smelter processing charges (B)	255	339
Adjusted revenue	\$ 1,733	\$ 1,796
Cost of sales as reported	\$ 2,225	\$ 2,529
Less:		
Trail Operations cost of sales as reported	(1,926)	(2,135)
Other costs of sales as reported	1	(34)
Add back: Inter-segment purchases as reported	650	635
	950	995
Less:		
Depreciation and amortization	(141)	(128)
Royalty costs	(328)	(412)
By-product cost of sales (C)	(70)	(77)
Adjusted cash cost of sales (D)	\$ 411	\$ 378
Payable pounds sold (millions) (E)	1,035.5	1,060.9
Per unit amounts — CAD\$/pound		
Adjusted cash cost of sales (D/E)	\$ 0.40	\$ 0.35
Smelter processing charges (B/E)	0.25	0.32
Total cash unit costs — CAD\$/pound	\$ 0.65	\$ 0.67
Cash margin for by-products ((A-C)/E)	(0.24)	(0.30)
Net cash unit cost CAD\$/pound	\$ 0.41	\$ 0.37
US\$ amounts⁽²⁾		
Average exchange rate (CAD\$ per US\$1.00)	\$ 1.30	\$ 1.30
Per unit amounts — US\$/pound		
Adjusted cash cost of sales	\$ 0.30	\$ 0.27
Smelter processing charges	0.19	0.25
Total cash unit costs — US\$/pound	\$ 0.49	\$ 0.52
Cash margin for by-products	(0.18)	(0.24)
Net cash unit cost US\$/pound	\$ 0.31	\$ 0.28

Notes:

(1) Red Dog and Pend Oreille.

(2) Average period exchange rates are used to convert to US\$/pound equivalent.

(3) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Energy Business Unit — Operating Netback, Bitumen and Blended Bitumen Price Realized Reconciliations⁽¹⁾

(CAD\$ in millions, except where noted)	2018
Revenue as reported	\$ 407
Less:	
Cost of diluent for blending	(181)
Non-proprietary product revenue	(18)
Add back: Crown royalties (D)	14
Adjusted revenue (A)	\$ 222
Cost of sales as reported	\$ 572
Less:	
Depreciation and amortization	(59)
Inventory write-downs	(34)
Cash cost of sales	\$ 479
Less:	
Cost of diluent for blending	(181)
Cost of non-proprietary product purchased	(12)
Transportation for non-proprietary product purchased	(3)
Transportation costs for FRB (C)	(60)
Adjusted operating costs (E)	\$ 223
Blended bitumen barrels sold (thousands)	8,746
Less diluent barrels included in blended bitumen (thousands)	(1,965)
Bitumen barrels sold (thousands) (B)	6,781
Per barrel amounts — CAD\$	
Bitumen price realized (A/B)⁽²⁾	\$ 32.81
Crown royalties (D/B)	(2.04)
Transportation costs for FRB (C/B)	(8.83)
Adjusted operating costs (E/B)	(32.89)
Operating netback — CAD\$ per barrel	\$ (10.95)

Notes:

(1) Results for the year ended December 31, 2018 are effective from June 1, 2018.

(2) Bitumen price realized represents the realized petroleum revenue (blended bitumen sales revenue) net of diluent expense, expressed on a per barrel basis. Blended bitumen sales revenue represents revenue from our share of the heavy crude oil blend known as Fort Hills Reduced Carbon Life Cycle Dilbit Blend (FRB), sold at the Hardisty and U.S. Gulf Coast market hubs. FRB is comprised of bitumen produced from Fort Hills blended with purchased diluent. The cost of blending is affected by the amount of diluent required and the cost of purchasing, transporting and blending the diluent. A portion of diluent expense is effectively recovered in the sales price of the blended product. Diluent expense is also affected by Canadian and U.S. benchmark pricing and changes in the value of the Canadian dollar relative to the U.S. dollar.

Blended Bitumen Price Realized Reconciliation⁽²⁾

(CAD\$ in millions, except where noted)	2018
Revenue as reported	\$ 407
Less: non-proprietary product revenue	(18)
Add back: Crown royalties	14
Blended bitumen revenue (A)	\$ 403
Blended bitumen barrels sold (thousands) (B)	8,746
Blended bitumen price realized — (CAD\$/barrel) (A/B) = D ⁽¹⁾	\$ 46.14
Average exchange rate (CAD\$ per US\$1.00) (C)	1.31
Blended bitumen price realized — (US\$/barrel) (D/C) ⁽¹⁾	\$ 35.12

Notes:

(1) Calculated per unit amounts may differ due to rounding.

(2) Results for the year ended December 31, 2018 are effective from June 1, 2018.

Quarterly Reconciliation

(\$ in millions)	2018				2017 ⁽¹⁾			
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Profit attributable to shareholders	\$ 433	\$ 1,281	\$ 634	\$ 759	\$ 740	\$ 584	\$ 580	\$ 556
Finance expense, net of finance income	58	74	48	39	39	39	58	76
Provision for income taxes	261	329	368	407	407	347	334	337
Depreciation and amortization	400	380	353	350	377	400	369	346
EBITDA	\$ 1,152	\$ 2,064	\$ 1,403	\$ 1,555	\$ 1,563	\$ 1,370	\$ 1,341	\$ 1,315

Note:

(1) Certain 2017 comparative figures have been restated for new IFRS pronouncements. 2016 figures have not been restated. Please refer to Note 32 to our audited annual consolidated financial statements for the year ended December 31, 2018.

Cautionary Statement on Forward-Looking Statements

This document contains certain forward-looking information and forward-looking statements as defined in applicable securities laws (collectively referred to as “forward-looking statements”). All statements other than statements of historical fact are forward-looking statements. Forward-looking statements involve known and unknown risks, uncertainties and other factors, which may cause the actual results, performance or achievements of Teck to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. These forward-looking statements include, but are not limited to, estimates, forecasts and statements as to management’s expectations with respect to, among other things, anticipated future production at our business units, products and individual operations (including our long-term production guidance), cost and spending guidance for our business units and individual operations, production and sales forecasts for our products and operations, our expectation that we will meet our production guidance, sales volume and selling prices for our products (including settlement of coal contracts with customers), forecast capital expenditures and capital spending, mine lives and the expected life of our various operations, including our expectation that we will be able to extend the mine lives of Fording River, Elkview and Greenhills, our expectation we will be able to increase production at our Elkview Operations beyond 2019, expected prices and demand for our products, expected receipt of regulatory approvals and timing thereof, expected receipt of pre-feasibility studies, feasibility studies and other studies and the timing thereof, plans and expectations for our development projects, including forecast operating costs and costs of product sold, expected production, including our expectation that we will be able to increase production at our other coal operations to compensate for the closure of Coal Mountain, expected progress, planned activities, costs and outcomes of our various projects and investments, including, but not limited to, those described in the discussions of our operations, the effect of currency exchange rates and commodity price changes, our strategies and objectives, discussions of our areas of focus for 2019, discussions of new or proposed technology or innovations, our expectations for the general market for our commodities, future trends for the company, expectations regarding the potential for the proposed MacKenzie Redcap development at Cardinal River to supply additional coal production or extend production at Cardinal River and the costs and accounting adjustments associated therewith, the costs, steps and potential impact of managing water quality at our coal operations, including but not limited to statements relating to our expectations regarding timing and costs of active water treatment, capital spending guidance, the potential for saturated rock fills to reduce capital and operating costs associated with active water treatment, the regulatory process relating to active water treatment and estimates of our long-term costs of water management; our expectation that we will be able to continue to capture latent production capacity by hauling raw coal from Elkview to Coal Mountain for processing, expectation that Neptune Bulk Terminals will increase our terminal loading capacity and our expectation that it will be completed in the first half of 2020, expectation that steelmaking coal production from 2020 to 2022 will be higher than 2019, our expectations regarding the increase in the royalty paid by Poscan in respect of our Greenhills property; anticipated benefits and timing of our ball mill project at Highland Valley Copper, the statement that there is potential to extend cathode production at Carmen de Andacollo past 2019, expectations regarding the Quebrada Blanca Phase 2 project, including expectations regarding capacity, mine life, reserve and resources, projected expenditures, timing of contributions and project financing, expected spending and activities on our Project Satellite properties, the anticipated benefits of the Red Dog mill upgrade project and the associated timing and cost, the timing of closing of the sale of a 30% interest in QBSA and expectation that the transaction will close, benefits of the new acid plant at our Trail Operations and the timing thereof, our expectation that unit operating costs at Fort Hills will continue to improve, our expectation regarding the potential to debottleneck and expand production capacity at Fort Hills, our expectation relating to curtailment measures affecting Fort

Hills, our expectations regarding the adequacy of our logistic arrangements for delivering our products to our customers, timing expectations regarding the Frontier project review and permitting process, the availability of our credit facilities, sources of liquidity and capital resources, statements regarding the impact and sensitivity of our annual profit attributable to shareholders and EBITDA to changes in exchange rates and commodity prices, our expectation that we will fund our commitments from cash on hand and our credit facilities, expectations regarding our dividend policy, including that an annual base dividend will be declared and paid, impact of carbon pricing policies and associated costs including our expectation that Canadian federal carbon tax policies will not apply to our operations, projections and sensitivities under the heading “Commodity Prices and 2018 Production”, all guidance appearing in this document appearing in this documentation including but not limited to the production, sales, unit cost and capital expenditure guidance under the heading “Guidance”, including our estimate of reduction in current taxes, forecast and demand and market outlook for commodities and our products. These forward-looking statements involve numerous assumptions, risks and uncertainties and actual results may vary materially.

These statements are based on a number of assumptions, including, but not limited to, assumptions regarding general business, regulatory and economic conditions, the supply and demand for, deliveries of, and the level and volatility of prices of zinc, copper, steelmaking coal and bitumen and other primary metals and minerals as well as oil, and related products, the timing of the receipt of regulatory and governmental approvals for our development projects and other operations, our costs of production, and production and productivity levels, as well as those of our competitors, power prices, continuing availability of water and power resources for our operations, market competition, the accuracy of our reserve and resource estimates (including with respect to size, grade and recoverability) and the geological, operational and price assumptions on which these are based, conditions in financial markets, the future financial performance of the company, our ability to attract and retain skilled staff, our ability to procure equipment and operating supplies, positive results from the studies on our expansion projects, our steelmaking coal and other product inventories, our ability to secure adequate transportation, including rail, port and pipeline services, for our products and the costs associated therewith, our ability to obtain permits for our operations and expansions, and our ongoing relations with our employees, business partners and joint venturers. Assumptions regarding the Elk Valley Water Quality Plan include assumptions that additional treatment will be effective at scale, and that the technology and facilities operate as expected, as well as additional assumptions discussed under the heading “Steelmaking Coal — Elk Valley Water Management”. Expectations regarding Quebrada Blanca Phase 2 are based on current project assumptions and the final feasibility study. Assumptions regarding Fort Hills are based on assumptions regarding the performance of the plant and other facilities at Fort Hills, and the operation of the project. Expectations regarding the impact of foreign exchange and commodity prices are based on 2019 mid-range production estimates, current commodity prices and a Canadian/U.S. dollar exchange rate of \$1.32. Statements regarding the availability of our credit facilities are based on assumptions that we will be able to satisfy the conditions for borrowing at the time of a borrowing request and that the credit facilities are not otherwise terminated or accelerated due to an event of default. Assumptions relating to our expectations for the closing of the QB2 transaction, include that all regulatory approvals will be obtained in a timely manner. The foregoing list of assumptions is not exhaustive. Events or circumstances could cause actual results to vary materially.

Factors that may cause actual results to vary materially include, but are not limited to, changes in commodity and power prices, changes in market demand for our products, changes in interest and currency exchange rates, acts of foreign or domestic governments, the outcome of legal proceedings, inaccurate geological and metallurgical assumptions (including with respect to the size, grade and recoverability of mineral reserves

and resources), unanticipated operational difficulties (including failure of plant, equipment or processes to operate in accordance with specifications or expectations, cost escalation, unavailability of materials and equipment, government action or delays in the receipt of government approvals, changes in tax or royalty rates, industrial disturbances or other job action, adverse weather conditions and unanticipated events related to health, safety and environmental matters), union labour disputes, political risk, social unrest, failure of customers or counterparties to perform their contractual obligations (including but not limited to port, rail, pipeline and other logistics providers), changes in our credit ratings, unanticipated increases in costs to construct our development projects, difficulty in obtaining permits, inability to address concerns regarding permits or environmental impact assessments, and changes or further deterioration in general economic conditions. The amount and timing of actual capital expenditures is dependent upon, among other matters, being able to secure permits, equipment, supplies, materials and labour on a timely basis and at expected costs to enable the related capital project to be completed as currently anticipated. Our Fort Hills project is not controlled by us and production schedules may be adjusted by our partners. Certain of our other operations and projects are operated through joint arrangements where we may not have control over all decisions, which may cause outcomes to differ from current expectations. Further factors associated with our Elk Valley Water Quality Plan are discussed under the heading “Management’s Discussion and Analysis — Steelmaking Coal — Elk Valley Water Management”. Declaration and payment of dividends is in the discretion of the Board, and our dividend policy will be reviewed regularly and may change. Closing of the QB2 transaction depends on certain regulatory approvals; if all required approvals are not received in a timely manner, the timing and ability to close will be jeopardized.

Statements concerning future production costs or volumes, mine lives of our operations and the sensitivity of the company’s profit to changes in commodity prices and exchange rates, are based on numerous assumptions of management regarding operating matters and on assumptions that demand for products develops as anticipated, that customers and other counterparties perform their contractual obligations, that operating and capital plans will not be disrupted by issues such as mechanical failure, unavailability of parts and supplies, labour disturbances, interruption in transportation or utilities, and adverse weather conditions, and that there are no material unanticipated variations in the cost of energy or supplies. Statements regarding anticipated steelmaking coal sales volumes and average steelmaking coal prices depend on timely arrival of vessels and performance of our steelmaking coal-loading facilities, as well as the level of spot pricing sales.

We assume no obligation to update forward-looking statements except as required under securities laws. Further information concerning risks, assumptions and uncertainties associated with these forward-looking statements and our business can be found in our Annual Information Form for the year ended December 31, 2018, filed under our profile on SEDAR (www.sedar.com) and on EDGAR (www.sec.gov) under cover of Form 40-F, as well as subsequent filings that can also be found under our profile.

Scientific and technical information regarding our material mining projects in this annual report was approved by Mr. Rodrigo Alves Marinho, P.Geo., an employee of Teck. Mr. Marinho is a qualified person, as defined under National Instrument (NI) 43-101.

Contingent Resource Disclosure

The contingent bitumen resources at Frontier have been prepared by Sproule Associates Limited, a qualified resources evaluator, in accordance with the guidelines set out in the Canadian Oil and Gas Evaluation Handbook. The Sproule estimates of contingent resources have not been adjusted for risk based on the

chance of development (85% chance of development risk). There is uncertainty that any of these resources will be commercially viable to produce any portion of the resources. Contingent bitumen resources are defined for this purpose as those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations using established technology or technology under development, but which are not currently considered to be commercially recoverable due to one or more contingencies. The entire contingent bitumen resources for Frontier oil sands mine are sub-classified into the development pending project maturity sub-class as extensive pre-development work has been completed. Contingencies may include factors such as economic, legal, environmental, political and regulatory matters or a lack of markets. Contingent resources do not constitute, and should not be confused with, reserves. There is no certainty that the Frontier project will produce any portion of the volumes currently classified as contingent resources. The primary contingencies that currently prevent the classification of the contingent resources disclosed above for the Frontier project as reserves include project economics due to the uncertainty in oil price and uncertainty in exchange rate; uncertainties around receiving regulatory approval to develop the project; potential issues regarding social licence for oil sands mining generally and climate change policy costs. In addition, there would be a need for approval of a decision to proceed to construction of the project by Teck. The Frontier project is based on a development study. The recovery technology at Frontier is expected to be a paraffinic froth treatment process. The total cost required to achieve first commercial production has been estimated by the resources evaluator at \$16.2 billion.