



MANAGEMENT'S DISCUSSION AND ANALYSIS

FOR THE YEAR ENDED DECEMBER 31, 2019

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TO OUR SHAREHOLDERS

The following Management's Discussion and Analysis ("MD&A") relates to the financial condition and results of operations of Largo Resources Ltd. ("we", "our", "us", "Largo", or the "Company") for the year ended December 31, 2019 ("2019") and should be read in conjunction with the annual consolidated financial statements and related notes for the same period. References in the below discussion refer to the note disclosures contained in the annual consolidated financial statements for the years ended December 31, 2019 and 2018 ("2019 annual consolidated financial statements"). References in the below discussion to "Q4 2019" and "Q4 2018" refer to the three months ended December 31, 2019 and December 31, 2018 and references to "2018" refer to the year ended December 31, 2018.

The financial statements and related notes of Largo have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued as issued by the International Accounting Standards Board ("IASB") applicable to a going concern. Certain non-GAAP measures are discussed in this MD&A, which are clearly disclosed as such. Additional information, including our press releases, has been filed electronically through the System for Electronic Document Analysis and Retrieval ("SEDAR") and is available online under our profile at www.sedar.com.

This MD&A reports our activities through March 20, 2020, unless otherwise indicated. References to "date of this MD&A" mean March 20, 2020. References to the symbol "R\$" mean the Real, the official currency of Brazil. References to the symbol "US\$" mean the U.S. dollar. Except as otherwise set out herein, all amounts expressed herein are in thousands of Canadian dollars, denominated by "\$". The Company's shares, options, units and warrants are expressed in thousands. Prices are not expressed in thousands.

Mr. Paul Sarjeant B.Sc. P.Geo., is a Qualified Person as defined under National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and has reviewed the technical information in the MD&A. Mr. Sarjeant is Manager, Geology of the Company. Refer to the Operations section of this MD&A for details of the Qualified Persons involved in reviewing the updated reserves and resources at the Company's Maracás Menchen Mine.

THE COMPANY

Largo is a Canadian natural resource company organized and existing under the *Business Corporations Act* (Ontario). Largo is listed on the Toronto Stock Exchange ("TSX"), with a vanadium mine and vanadium and tungsten projects in Brazil and Canada. In Brazil, Largo owns the Maracás Menchen Mine and has secondary projects with the Currais Novos tungsten tailings project and the Campo Alegre de Lourdes iron-vanadium project. In Canada, Largo has a project at the Northern Dancer tungsten-molybdenum property, located in the Yukon Territory. The Company is dedicated to the operation and expansion of the Maracás Menchen Mine and predominantly all of the Company's activities are focused on this mine.

2019 HIGHLIGHTS

- The Company's Maracás Menchen Mine produced a record 10,577 tonnes of vanadium pentoxide ("V₂O₅") in 2019, including a new quarterly production record of 3,011 tonnes of V₂O₅ produced in Q4 2019 and a new monthly production record of 1,162 tonnes of V₂O₅ produced in December 2019.
- The Company's cash balance at December 31, 2019 was \$166,077.
- The Company recorded a net loss before tax of \$31,259 for 2019 and a net loss of \$36,212 after the recognition of an income tax expense of \$1,144 and a deferred income tax expense of \$3,809.
- On July 8, 2019, the Company completed the redemption of all of its remaining outstanding Notes, following which the Company was debt free. Refer to note 11 for full details of the Notes redemptions.
- On January 10, 2019, the Company announced that Mr. Alberto Beeck had resigned as a member of the Company's Board of Directors with immediate effect.
- On February 7, 2019, the Company announced that it had filed a final base shelf prospectus (the "Shelf Prospectus"). The Shelf Prospectus will allow the Company and certain of its security holders to qualify the distribution by way of prospectus of up to \$750,000 of common shares, debt securities, subscription receipts,

warrants and units or any combination thereof, during the 25-month period that the Shelf Prospectus remains effective.

- On February 25, 2019, the Company announced the resignation of an Arias Resource Capital Management LP (the "ARC Funds") nominee director, Mr. Sam Abraham, from the Board of Directors of the Company.
- On April 4, 2019, the Company announced the appointment of Mr. Jonathan Lee to the Board of Directors of the Company as a nominee of the ARC Funds.
- On June 11, 2019, the Company announced an updated mineral resource for the Novo Amparo Norte deposit at the Maracás Menchen Mine. The updated resource includes total measured and indicated resources of 12.23 million tonnes grading 0.88% V₂O₅ with magnetic concentrate grades of 2.41% V₂O₅ and inferred mineral resources of 11.33 million tonnes grading 0.90% V₂O₅ with magnetic concentrate grades of 2.46% V₂O₅.
- On August 15, 2019, the Company announced that it had released its inaugural environmental, social and governance report, demonstrating the Company's commitment to transparency with all stakeholders.
- On August 20, 2019, the Company announced that it had formally given notice to Glencore International AG of the nonrenewal of its off-take agreement dated May 14, 2008. In accordance with this notice, the off-take agreement will expire effective April 30, 2020.
- On September 9, 2019 the Company announced that on September 8, 2019, Mr. Paulo Misk had been promoted to President and Chief Executive Officer following the departure of Mr. Mark Smith as Chief Executive Officer and Director, and that J. Alberto Arias had been named as the non-executive Chair of the Company's Board of Directors.
- On December 4, 2019, the Company announced the renewal of its Superintendência do Desenvolvimento do Nordeste ("SUDENE") tax incentive which extends the Company's current Brazilian tax rate of 15.25% to December 2028. The Company's current SUDENE tax incentive was granted in January 2015 for a period of ten years on annual production of 9,636 tonnes of V₂O₅ and reduces its effective Brazilian tax rate from 34.00% to 15.25%. This has been extended to December 2028 under the renewed incentive and applies to production of up to 13,260 tonnes of V₂O₅ per year.

SIGNIFICANT EVENTS AND TRANSACTIONS SUBSEQUENT TO 2019

- On January 22, 2020, the Company announced the launch of VPURE and VPURE+, newly developed brands for the Company's vanadium products.
- In January 2020, 2,707 warrants with an exercise price of \$0.65 were exercised resulting in gross proceeds to the Company of \$1,713, with 129 warrants surrendered as part of a cashless exercise. 5,533 shares were issued in connection with a cashless exercise of warrants in 2019 (refer to note 14).
- In March 2020, the Company secured a US\$13,000 credit facility in Brazil. All amounts drawn under the facility are due to be repaid as a lump sum at maturity in 359 days.
- The Company is conscious of the rapid expansion of the COVID-19 pandemic and the evolving global implications. To date, there have been no significant disruptions to the Company's supply chain or on its shipment of products from the Maracás Menchen Mine. However, the Company cautions that the potential future impact of any restrictions on the Company's supply chain, operations, sales efforts and logistics is currently unknown but could be significant.

2019 SUMMARY

Financial

- The Company recorded a net loss of \$36,212 in 2019, compared with net income of \$315,956 in 2018. This movement was primarily due to a decrease in revenues of \$381,403 from \$521,415 in 2018 to \$140,012 in 2019 and an increase in exploration and evaluation costs of \$2,497. This was partially offset by a decrease in operating costs of \$11,905, a decrease in finance costs of \$21,396, an increase in interest income of \$5,658 and a decrease in the total income tax and deferred income tax expense of \$1,745. For Q4 2019, the Company

recorded a net loss of \$4,953, compared with net income of \$107,961 for Q4 2018. This movement was primarily attributable to the same factors as noted above, with a decrease in revenues of \$143,425 from \$177,543 in Q4 2018 to \$34,118 in Q4 2019.

	Three months ended		Year ended	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Revenues	\$ 34,118	\$ 177,543	\$ 140,012	\$ 521,415
Direct mine and mill costs	(20,025)	(21,332)	(84,252)	(82,037)
Operating costs	(29,980)	(37,637)	(123,841)	(135,746)
Net income (loss) before tax	(2,544)	131,091	(31,259)	322,654
Income tax expense	(1,190)	(11,694)	(1,144)	(27,467)
Deferred income tax (expense) recovery	(1,219)	(11,436)	(3,809)	20,769
Net income (loss)	(4,953)	107,961	(36,212)	315,956
Basic earnings (loss) per share	(0.01)	0.21	(0.07)	0.61
Diluted earnings (loss) per share	(0.01)	0.16	(0.07)	0.49
Cash provided before non-cash working capital items	\$ 16,507	\$ 134,357	\$ 28,630	\$ 403,157
Net cash provided by operating activities	10,445	144,165	139,282	352,074
Net cash provided by (used in) financing activities	12,206	(64,811)	(115,226)	(177,786)
Net cash (used in) investing activities	(7,472)	(6,198)	(50,386)	(18,989)
Net change in cash	11,262	78,127	(40,111)	151,463

Sales and Trading

- The Company recognized revenues of \$34,118 in Q4 2019, compared with \$177,543 in Q4 2018, with production for Q4 2019 of 3,011 tonnes of V₂O₅ being 416 tonnes higher than the 2,595 tonnes produced in Q4 2018. Vanadium sales from a contract with a customer was \$47,568 in Q4 2019, compared with \$167,639 in Q4 2018. This decrease is primarily attributable to a decrease in the V₂O₅ price, with the average price per lb of V₂O₅ of approximately US\$5.37 for Q4 2019, compared with approximately US\$24.53 for Q4 2018.
- For 2019, the Company recognized revenues of \$140,012, compared with \$521,415 in 2018, with production for 2019 of 10,577 tonnes of V₂O₅ being 747 tonnes higher than the 9,830 tonnes produced in 2018. Vanadium sales from a contract with a customer (note 22) was \$277,285 in 2019, compared with \$455,368 in 2018. This decrease is primarily attributable to a decrease in the V₂O₅ price, with the average price per lb of V₂O₅ of approximately US\$9.36 for 2019, compared with approximately US\$18.30 for 2018. Revenues are related to the Mine properties segment. Refer to note 4(c) part 9 for the Company's vanadium sales accounting policy.

	Three months ended		Year ended	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Revenues per pound sold ^{1,2}	\$ 5.41	\$ 31.96	\$ 6.25	\$ 24.33
Revenues per pound sold ^{1,2} (US\$)	US\$ 4.09	US\$ 24.19	US\$ 4.70	US\$ 18.68
Vanadium sales per pound sold ^{1,2}	\$ 7.54	\$ 30.17	\$ 12.38	\$ 21.25
Vanadium sales per pound sold ^{1,2} (US\$)	US\$ 5.70	US\$ 22.84	US\$ 9.32	US\$ 16.32
Revenue adjustment per pound ^{1,2}	\$ (2.26)	\$ 3.65	\$ (6.05)	\$ 3.53
Revenue adjustment per pound ^{1,2} (US\$)	US\$ (1.71)	US\$ 2.76	US\$ (4.55)	US\$ 2.71

1. The revenues per pound, vanadium sales per pound and revenue adjustment per pound reported are on a non-GAAP basis. Refer to the "Non-GAAP Measures" section of this MD&A.

2. Revenues per pound sold and vanadium sales per pound sold are calculated based on the quantity of V₂O₅ sold during the stated period. Revenue adjustment per pound is calculated based on the quantity of V₂O₅ sold that is subject to re-measurement. This may or may not differ to the quantity sold. Accordingly, these three measures may not, and are not intended to, sum.

- As a consequence of the negative revenue adjustment per pound¹ realized in Q4 2019 and in 2019, the Company's trade payables balance at December 31, 2019 (note 10) was \$87,782 (December 31, 2018 – trade receivables (note 5) of \$55,011). At December 31, 2019, the revenue adjustment payable¹ was \$95,683 (US\$73,602). Assuming V₂O₅ prices remain the same as at December 31, 2019 (refer to "Liquidity and Capital Resources" section of this MD&A), the Company's estimated revenue adjustment payable for V₂O₅ sold¹ to December 31, 2019 is \$96,239 (US\$74,030). At the date of this MD&A, the Company's estimated revenue adjustment payable for V₂O₅ sold¹ to February 29, 2020 is approximately \$94,388 (US\$72,606). Also refer to the "Liquidity and Capital Resources" section of this MD&A.
- During Q4 2019 and 2019, the Company purchased and sold vanadium products (note 7) as part of the Company's strategy to fulfil expected sales contracts going forward. Other gains (losses) includes the gains and losses recognized on these transactions, as well as the remeasurement gains and losses from the fair value measurement at the period end date. For Q4 2019 this was a loss of \$2,545 (Q4 2018 – \$nil) and for 2019 this was a loss of \$1,795 (2018 – \$nil).

Costs

	Three months ended		Year ended	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Cash operating costs per pound produced ¹	\$ 3.57	\$ 6.16	\$ 4.26	\$ 5.45
Cash operating costs per pound produced ¹ (US\$)	US\$ 2.70	US\$ 4.66	US\$ 3.21	US\$ 4.19
Cash operating costs excluding royalties per pound produced ¹	\$ 3.28	\$ 4.60	\$ 3.92	\$ 4.41
Cash operating costs excluding royalties per pound produced ¹ (US\$)	US\$ 2.48	US\$ 3.48	US\$ 2.95	US\$ 3.38

1. The cash operating costs per pound produced and cash operating costs excluding royalties per pound produced reported are on a non-GAAP basis. Refer to the "Non-GAAP Measures" section of this MD&A.

- Operating costs of \$29,980 in Q4 2019 (Q4 2018 – \$37,637) include direct mine and mill costs of \$20,025 (Q4 2018 – \$21,332), depreciation and amortization of \$7,979 (Q4 2018 – \$7,347) and royalties of \$1,976 (Q4 2018 – \$8,958). The total operating costs are related to the Mine properties segment. The decrease in direct mine and mill costs is primarily attributable to the recovery of operating cost related tax credits totalling R\$12,300 (\$3,979). Excluding these credits, direct mine and mill costs increased in line with the increase in production and sales, with 3,011 tonnes of V₂O₅ produced in Q4 2019 (Q4 2018 – 2,595 tonnes) and 2,860 tonnes of V₂O₅ sold in Q4 2019 (Q4 2018 – 2,520 tonnes). For 2019, operating costs of \$123,841 (2018 – \$135,746) include direct mine and mill costs of \$84,252 (2018 – \$82,037), depreciation and amortization of \$31,668 (2018 – \$31,031) and royalties of \$7,921 (2018 – \$22,678). The decrease in royalties in 2019 from 2018 is due to a decrease in the V₂O₅ price and together with the same factors noted above, is a primary reason for the decrease in operating costs in 2019 as compared with 2018.
- Cash operating costs per pound produced² for Q4 2019 were \$3.57 per lb (US\$2.70), compared with \$6.16 per lb (US\$4.66) for Q4 2018. Cash operating costs per pound produced include royalties, which vary based on the price of V₂O₅. Cash operating costs excluding royalties per pound produced² were \$3.28 per lb (US\$2.48), compared with \$4.60 (US\$3.48) for Q4 2018. The decrease seen in Q4 2019 compared with Q4 2018 is largely due to the Q4 2019 production of 3,011 tonnes of V₂O₅ being 416 tonnes higher than the 2,595 tonnes produced in Q4 2018, as well as an improvement in the global recovery level to 77.3% in Q4 2019 from 75.3% in Q4 2018 and the recovery of tax credits as noted above.
- Professional, consulting and management fees in Q4 2019 were \$3,549, a decrease of \$1,197 from \$4,746 in Q4 2018. The decrease is primarily attributable to costs incurred in Q4 2018 relating to debt restructuring and

¹ The revenue adjustment per pound, revenue adjustment payable and estimated revenue adjustment payable for V₂O₅ sold reported are on a non-GAAP basis. Refer to the "Non-GAAP Measures" section of this MD&A.

² The cash operating costs per pound produced and cash operating costs excluding royalties per pound produced reported are on a non-GAAP basis. Refer to the "Non-GAAP Measures" section of this MD&A.

repayment activities. Of the total professional, consulting and management fee expense in Q4 2019, \$1,382 related to the Mine properties segment (Q4 2018 – \$2,612) and \$2,167 related to Corporate (Q4 2018 – \$2,134), which is not an operating segment (refer to note 18). For 2019, total professional, consulting and management fees were \$13,250 (2018 – \$15,450), with \$6,013 related to the Mine properties segment (2018 – \$9,680) and \$7,237 related to Corporate (2018 – \$5,770).

- Finance costs in Q4 2019 were \$52, a decrease of \$8,254 from \$8,306 in Q4 2018. The decrease is primarily attributable to the elimination of the Company's debt facilities following the redemption of Notes that was completed on July 8, 2019 (refer to note 11). Of the total in Q4 2019, \$45 related to the Mine properties segment (Q4 2018 – \$939) and \$7 related to Corporate (Q4 2018 – \$7,367). For 2019, total finance costs were \$18,290 (2018 – \$39,686), with \$281 related to the Mine properties segment (2018 – \$23,624) and \$18,009 related to Corporate (2018 – \$16,062). The movement in finance costs from the Mine properties segment to Corporate is primarily attributable to the settlement of the various debt facilities in Brazil in the second half of 2018 following the issuance of the Notes, with the Notes subsequently redeemed in full following the final redemption on July 8, 2019 (refer to note 11).
- Share-based payments in Q4 2019 were \$707 (Q4 2018 – \$857). For 2019, share-based payments were \$4,716 (2018 – \$2,011). The increase in share-based payments is primarily attributable to the restricted share unit ("RSU") grant in 2019, the continued vesting of RSUs and the accelerated vesting in full of 783 RSUs previously granted to Mr. Mark Smith following his departure from the Company on September 5, 2019.
- Exploration and evaluation costs in Q4 2019 were \$728 (Q4 2018 – \$589). Of the total in Q4 2019, an expense recovery of \$8 related to the Exploration and evaluation properties segment (Q4 2018 – expense of \$15) and \$736 related to the Mine properties segment (Q4 2018 – \$574). For 2019, total exploration and evaluation costs were \$3,684 (2018 – \$1,187), with \$363 related to the Exploration and evaluation properties segment (2018 – \$77) and \$3,321 related to the Mine properties segment (2018 – \$1,110). The increase in exploration and evaluation costs is due to the increased level of exploration work being performed at the Company's Campo Alegre de Lourdes project and at the Maracás Menchen Mine as the Company works toward updating its resources at the strategic direction of the Company's Board of Directors.
- Interest income in Q4 2019 was \$1,066, an increase of \$449 from \$617 in Q4 2018. This is due to the Company's increased cash position prior to Q4 2019 as compared with the same prior year period and the final redemption of the Company's long-term debt facilities, which enabled the Company to benefit from greater deposit interest rates. For 2019, interest income was \$6,556, as compared with \$898 in 2018.
- In Q4 2019, the Company recognized an income tax expense of \$1,190 (Q4 2018 – \$11,694). The movement is due to a decrease in taxable profits in the Mine properties segment in Q4 2019 compared with Q4 2018, largely due to the decrease in revenues noted previously. For 2019, the Company recognized an income tax expense of \$1,144 (2018 – \$27,467). The total income tax expense is related to the Mine properties segment.
- In Q4 2019, the Company recognized a deferred income tax expense of \$1,219 (Q4 2018 – \$11,436). For 2019, the Company recognized a deferred income tax expense of \$3,809 (2018 – recovery of \$20,769). The expense in 2019 is due to the decrease of the deferred income tax asset as a result of the usage of non-capital losses in Brazil. The recovery in 2018 is due to the initial recognition of the deferred income tax asset for these non-capital losses, with the expense in Q4 2018 arising from the usage of non-capital losses in Brazil. The total deferred income tax expense/recovery is related to the Mine properties segment.
- The Company recognized a comprehensive loss of \$737 in Q4 2019 (Q4 2018 – comprehensive income of \$125,842) after recognizing a cumulative translation adjustment gain of \$4,216 (Q4 2018 – \$17,881). For 2019, the Company recognized a comprehensive loss of \$56,052 (2018 – comprehensive income of \$307,028) after recognizing a cumulative translation adjustment loss of \$19,840 (2018 – \$8,928). The 2019 cumulative translation adjustment was mainly due to the depreciation in the value of the Company's net investment in its Maracás Menchen Mine and related mine properties, plant and equipment, in turn due to a weakening of the Brazilian real against the Canadian dollar by approximately 8%.

Cash Flows

- In Q4 2019 the Company generated positive cash from operating activities, with net cash provided by operating activities of \$10,445, compared with \$144,165 in Q4 2018. This decrease was primarily due to a decrease in revenues, with revenues exceeding direct mine and mill costs and royalties by \$12,117 in Q4 2019, compared with \$147,253 in Q4 2018. This contributed to cash provided before non-cash working capital items of \$16,507, compared with \$134,357 in Q4 2018. For 2019, net cash provided by operating activities was \$139,282 (2018 – \$352,074), with cash provided before non-cash working capital items of \$28,630 (2018 – \$403,157) and a net change in working capital items of \$110,652 (2018 – negative change of \$51,083), which is primarily due to the change in trade receivables / payables (from December 31, 2018 to December 31, 2019) of \$142,793.
- Cash provided by financing activities in Q4 2019 was \$12,206, compared with cash used of \$64,811 in Q4 2018. The movement is primarily due to a decrease in the repayment of long-term debt from Q4 2018 of \$56,511, a decrease in the debt issue costs, interest, guarantee fees and other associated fees paid of \$11,349 and an increase in cash proceeds from the issuance of common shares and warrants of \$8,551.
- For 2019, cash used in financing activities was \$115,226, compared with \$177,786 in 2018. The movement is primarily due to a decrease in the repayment of long-term debt of \$193,792, a decrease in the debt issue costs, interest, guarantee fees and other associated fees paid of \$52,725, an increase in interest income of \$5,722 and an increase in cash proceeds from the issuance of common shares and warrants of \$3,846. This was partially offset by a decrease in the receipt of long-term debt of \$191,790 and a decrease in the change in restricted cash of \$4,244.
- Cash used in investing activities in Q4 2019 was \$7,472, an increase of \$1,274 from the \$6,198 seen in Q4 2018. For 2019, cash used in investing activities was \$50,386, compared with \$18,989 in 2018. The increase over the same prior year period is primarily due to the expansion project being undertaken by the Company in 2019, which was completed on budget and within the guidance as presented in the Company's MD&A for the three and nine months ended September 30, 2019.
- The net change in cash in Q4 2019 was an increase of \$11,262, compared with \$78,127 in Q4 2018. For 2019, the net change in cash was a decrease of \$40,111, compared with an increase of \$151,463 in 2018. These movements are primarily attributable to the factors highlighted above.

Operations

- Production quantities and cash operating costs per pound produced¹ are summarized in the following table:

	Production Tonnes	Production		Cost per pound			
		Pounds Equivalent ⁴	Average Quarterly V ₂ O ₅ price (US\$/lb)	US\$ ⁵	US\$ ⁵ \$ ^{1,2,3}	R\$ ⁶	
4 th Quarter 2019	3,011	6,638,111	5.37	\$2.70	\$3.57	R\$11.13	
3 rd Quarter 2019	2,952	6,508,038	7.16	\$3.02	\$3.99	R\$11.89	
2 nd Quarter 2019	2,515	5,544,619	8.59	\$3.54	\$4.75	R\$13.88	
1 st Quarter 2019	2,099	4,627,497	16.34	\$3.79	\$5.04	R\$14.23	
4 th Quarter 2018	2,595	5,720,989	24.53	\$4.66	\$6.16	R\$17.76	
3 rd Quarter 2018	2,563	5,650,441	19.66	\$4.14	\$5.41	R\$16.34	
2 nd Quarter 2018	2,458	5,418,956	15.44	\$3.85	\$4.97	R\$13.87	
1 st Quarter 2018	2,214	4,881,029	13.57	\$4.11	\$5.20	R\$13.34	

1. The cash operating costs per pound produced reported are on a non-GAAP basis. Refer to the "Non-GAAP Measures" section of this MD&A.

2. Excludes corporate SG&A or CAPEX (Capital Expenditures).

3. The reader is cautioned that the cash operating costs per pound produced presented are intended to serve as a guide to the magnitude of the Company's monthly operating expenditures on a cash basis and excludes financing costs associated with the operations and non-cash accounting charges (including but not limited to depreciation and amortization expense, accretion, share-based payments, or foreign exchange gains or losses). The measure may therefore not be comparable to other companies or the results of similar operations and does not meet any definition of GAAP. Refer to the "Non-GAAP Measures" section of this MD&A.

4. Conversion of tonnes to pounds, 1 tonne = 2,204.62 pounds or lbs.

5. Calculated from "\$ Cost per pound" using average \$/US\$ foreign exchange rates of 1.32, 1.32, 1.34, 1.33, 1.32, 1.31, 1.29 and 1.26 for the 4th Quarter 2019, 3rd Quarter 2019, 2nd Quarter 2019, 1st Quarter 2019, 4th Quarter 2018, 3rd Quarter 2018, 2nd Quarter 2018 and 1st Quarter 2018, respectively.

6. Calculated from "\$ Cost per pound" using average \$/R\$ foreign exchange rates of 3.11, 2.98, 2.92, 2.82, 2.88, 3.02, 2.79 and 2.57 for the 4th Quarter 2019, 3rd Quarter 2019, 2nd Quarter 2019, 1st Quarter 2019, 4th Quarter 2018, 3rd Quarter 2018, 2nd Quarter 2018 and 1st Quarter 2018, respectively.

- Q4 2019 production of 3,011 tonnes of V₂O₅ was 16% higher than Q4 2018. Production in December 2019 achieved a new monthly record with 1,162 tonnes of V₂O₅ produced, which contributed to the total V₂O₅ production in 2019 of 10,577 tonnes being 747 tonnes higher than in 2018. In October, 946 tonnes of V₂O₅ was produced, with 903 tonnes produced in November. Q4 2019 production was 2% higher than in Q3 2019, primarily due to the completion of the expansion in the milling and evaporation areas, which enabled the full plant to achieve its expanded design capacity.
- The Q4 2019 global recovery was 77.3%, higher than the 75.3% achieved in Q4 2018 but lower than those achieved in Q1 2019 (80.0%), Q2 2019 (79.1%) and Q3 2019 (78.1%). The decrease seen in Q4 2019 is primarily attributable to the global recovery in October 2019 of 72.9%, which was impacted due to the commissioning and ramp-up activities in the milling area. In November and December 2019, the global recoveries were 79.4% and 78.1%, respectively.
- Subsequent to Q4 2019, production in January 2020 was 956 tonnes of V₂O₅, with 915 tonnes of V₂O₅ produced in February 2020. Production in January 2020 was impacted by shutdowns of the kiln and cooler to fix the refractory and maintenance to correct an instability in the kiln feed. February 2020 production was impacted by a kiln shutdown to fix a hot spot in the refractory. In April 2020 the Company is planning an upgrade to the kiln burner and improvements in the cooler with the aim of increasing kiln capacity by 10%. This will require the kiln and cooler to be shut down for approximately 15 days. During this period, the Company will replace approximately 15 to 20 metres of the cooler refractory. The Company estimates that production in April 2020 will be approximately 500 tonnes of V₂O₅.

SELECTED QUARTERLY INFORMATION

Summary financial information for the eight quarters ended December 31, 2019, prepared in accordance with IFRS:

Period	Revenue	Net Income (Loss)	Basic Earnings (Loss) per Share	Total Assets	Non-current Liabilities
4 th Quarter 2019	\$ 34,118	\$ (4,953)	\$ (0.01)	\$ 466,118	\$ 9,572
3 rd Quarter 2019	32,118	(8,590)	(0.02)	448,881	9,234
2 nd Quarter 2019	29,462	(20,501)	(0.04)	492,902	9,603
1 st Quarter 2019	44,314	(2,168)	(0.00)	476,574	8,893
4 th Quarter 2018	177,543	107,961	0.21	552,825	8,865
3 rd Quarter 2018	149,458	71,416	0.14	463,972	172,239
2 nd Quarter 2018	103,321	90,735	0.17	634,612	163,652
1 st Quarter 2018	91,093	45,844	0.09	406,696	188,152

The Company's asset base has fluctuated over the last eight quarters ended December 31, 2019, with the high in Q2 2018 primarily attributable to proceeds from the senior secured notes held in escrow as restricted cash prior to the settlement of debt facilities in Q3 2018 and amounts receivable.

During Q4 2019, the Company recognized revenues of \$34,118, which was offset by operating costs of \$29,980, finance costs of \$52 and a total tax expense of \$2,409.

During Q3 2019, the Company recognized revenues of \$32,118, which was offset by operating costs of \$31,506, finance costs of \$58 and a total tax recovery of \$1,260.

During Q2 2019, the Company recognized revenues of \$29,462, which was offset by operating costs of \$33,284, finance costs of \$10,897 and a total tax expense of \$222.

During Q1 2019, the Company recognized revenues of \$44,314, which was offset by operating costs of \$29,071, finance costs of \$7,283 and a total tax expense of \$3,582.

During Q4 2018, the Company recognized revenues of \$177,543, which was offset by operating costs of \$37,637, finance costs of \$8,306 and a total tax expense of \$11,694.

During Q3 2018, the Company recognized revenues of \$149,458, which was offset by operating costs of \$36,706, finance costs of \$15,031 and a total tax expense of \$20,318.

During Q2 2018, the Company recognized revenues of \$103,321 and a deferred tax recovery of \$45,593, which was offset by operating costs of \$30,220 and finance costs of \$8,423. The Company recognized a foreign exchange loss of \$9,055 primarily due to the translation of U.S. denominated cash into Canadian dollar equivalent.

During Q1 2018, the Company recognized revenues of \$91,093, which was offset by operating costs of \$31,183 and finance costs of \$7,926. The Company recognized a foreign exchange gain of \$2,253 primarily due to the translation of U.S. denominated cash into Canadian dollar equivalent.

OPERATIONS

Maracás Menchen Mine

Recent Developments

Expenditures of \$55,511 were capitalized to mine properties, plant and equipment during 2019 (2018 – \$20,480), including \$9,989 of capitalized waste stripping and push back costs (2018 – \$9,793).

Sales of V₂O₅ during Q4 2019 were 2,860 tonnes, including 480 tonnes of high purity V₂O₅ (2,520 tonnes in Q4 2018, including 360 tonnes of high purity V₂O₅). Sales of high purity V₂O₅ in 2019 were 1,640 tonnes, 14% higher than the 1,440 tonnes sold in 2018.

The production of 3,011 tonnes of V₂O₅ achieved in Q4 2019 was the result of the completion of the expansion project and the achievement of the expanded design capacity. This was highlighted by the new monthly production record in December 2019 of 1,162 tonnes of V₂O₅.

The Q4 2019 global recovery of 77.3% was impacted by the lower global recovery achieved in October 2019 (72.9%) through the commissioning and ramp-up activities in the milling area. The 2019 global recovery of 78.5% is higher than the 77.0% achieved in 2018, primarily due to the improved performance of the kiln, which increased its recovery from 86.6% in 2018 to 89.1% in 2019.

In Q4 2019, 329,792 tonnes of ore were mined with an effective grade of 1.36% of V₂O₅. The Company produced 100,879 tonnes of concentrate ore with an effective V₂O₅ grade of 3.28%, compared with 92,190 tonnes produced in Q4 2018 with a grade of 3.27%.

The following table is a summary of production statistics at the Maracás Menchen Mine.

	Q4 2019	Q4 2018	2019	2018
Total Ore Mined (tonnes)	329,792	256,436	1,156,016	822,795
Ore Grade Mined - Effective Grade ¹ (%)	1.36	1.33	1.34	1.30
Effective Grade of Ore Milled (%)	1.57	1.53	1.50	1.68
Concentrate Produced (tonnes)	100,879	92,190	382,501	343,126
Grade of Concentrate (%)	3.28	3.27	3.29	3.41
Contained V ₂ O ₅ (tonnes)	3,310	3,016	12,580	11,718
Crushing Recovery (%)	96.6	97.4	97.0	97.2
Milling Recovery (%)	96.0	97.9	96.9	96.9
Kiln Recovery (%)	89.7	84.3	89.1	86.6
Leaching Recovery (%)	96.7	96.5	96.8	97.2
Chemical Plant Recovery (%)	96.1	97.2	96.8	97.0
Global Recovery (%) ²	77.3	75.3	78.5	77.0
V ₂ O ₅ Produced (Flake + Powder) (tonnes)	3,011	2,595	10,577	9,830

1. Effective grade represents the percentage of magnetic material mined multiplied by the percentage of V₂O₅ in the magnetic concentrate.

2. Global recovery is the product of crushing recovery, milling recovery, kiln recovery, leaching recovery and chemical plant recovery.

The Company uses production drilling prior to blasting to better define the ore and waste material being mined. This dilution control procedure has enabled the Company to avoid mining waste rock inside the ore block, resulting in less ore being mined, but with a higher grade than expected. The V₂O₅ content of the mined ore and the mine sequencing is consistent with that anticipated in the Technical Report (refer to the “Reserves and Resources” section). The Company’s crushing and milling costs have benefited from the implementation of this procedure as a result of the lower throughput of material in these sections of the plant.

2020 Guidance

The Company’s progress against its sales strategy for 2020 is in line with the Company’s expectations. The Company is confident that building its own commercial capacity will add significant long-term value to the Company.

The Company’s 2020 guidance presented in the following table is prepared on a “business as usual” basis. The guidance and forecasts in this MD&A are highly dependent on there being no disruptions or interruptions to the Company’s supply chain and logistics, which are critical to the Company’s operations and sales. Notwithstanding the Company’s production, cost and sales guidance for 2020, the Company is conscious of the rapid expansion of the COVID-19 pandemic and the evolving measures being imposed by governments globally to reduce its spread and the impact that this may have on the Company’s guidance. To date, the restrictions imposed by the government in Brazil have not impacted the Company’s operations but the potential future impact of these restrictions and other restrictions globally on the Company’s operations, sales efforts and logistics is unknown but could be significant.

The Company is continuing to monitor the rapidly developing impacts of the COVID-19 pandemic and will take all possible actions to help minimize the impact on the Company and its people. However, these actions may significantly change the guidance and forecasts presented. Refer to the Company’s Annual Information Form for the year ended December 31, 2019 for the full discussion of the Company’s Risks and Uncertainties, including those relating to the COVID-19 pandemic.

		2020 Guidance
Annual V ₂ O ₅ production	tonnes	11,750 – 12,250
Annual V ₂ O ₅ sales	tonnes	9,500 – 10,000
Cash operating costs excluding royalties ¹	US\$/lb	3.05 – 3.25
Total cash costs ^{2,3}	US\$/lb	3.45 – 3.65
Sustaining capital expenditures (excluding capitalized stripping costs)	\$	11,500 – 14,500
	US\$	9,000 – 11,000
Ferrovanadium conversion plant capital expenditures	\$	6,500 – 9,500
	US\$	5,000 – 7,000

1. The cash operating costs reported are on a non-GAAP basis. Refer to the “Non-GAAP Measures” section of this MD&A. However, for 2020 onwards, this measure will be reported on a per pounds sold basis rather than per pounds produced. The estimated average annual R\$/US\$ and \$/US\$ exchange rates used are approximately 4.50 and 1.30, respectively.

2. The total cash costs reported are on a non-GAAP basis. Refer to the details below this table. The estimated average annual R\$/US\$ and \$/US\$ exchange rates used are approximately 4.50 and 1.30, respectively.

3. These measures exclude royalties. Every US\$1/lb in the V₂O₅ price realized by the Company in revenues adds approximately US\$0.05/lb in royalties.

For 2020, the Company has revised the non-GAAP cost measures it will use to measure its performance. This decision was taken in light of the anticipated difference between production and sales volumes in 2020. Following the end of the Company’s off-take agreement on April 30, 2020, the Company will incur its own sales and distribution costs, which will be included as a component of operating costs going forward. Costs associated with the off-take agreement were included in the commissions that were included in the measurement of revenues. The new non-GAAP measures the Company will use for 2020 onwards are as detailed below.

Total cash costs

Total cash costs are a non-GAAP performance measure that includes direct mine and mill costs, sales and distribution costs and the Company’s professional, consulting and management fees and other general and administrative expenses. Total cash costs exclude royalties, depreciation and amortization, share-based

payments, foreign exchange gains or losses, reclamation costs, exploration and evaluation costs and capital expenditures. These costs are then divided by the pounds of V₂O₅ sold by the Company to arrive at total cash costs.

This measure differs from cash operating costs per pound produced in that it includes all sales and distribution costs, professional, consulting and management fees and other general and administrative expenses, rather than just those from the Mine properties segment, and is calculated on pounds sold rather than pounds produced. The Company believes this will be a more accurate reflection of its unit costs given the anticipated difference between pounds produced and pounds sold after the end of the Company's off-take agreement on April 30, 2020.

This total cash costs measure does not have any standardized meaning prescribed by IFRS and differs from measures determined in accordance with IFRS. This measure is intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. This measure is not necessarily indicative of net earnings or cash flow from operating activities as determined under IFRS.

Reserves and Resources

On October 16, 2017, the Company disclosed mineral reserve and mineral resource estimates with an effective date of May 2, 2017 in a report titled Maracás Menchen Project, Bahia, Brazil An Updated Mine Plan, Mineral Reserve and Preliminary Economic Assessment of the Inferred Resources (the "Technical Report"), prepared by GE21 Consultoria Mineral Ltda ("GE21").

The Mineral Resources for the Campbell deposit are estimated from diamond drill core information stored in a secured central database and were evaluated using a geostatistical block modelling approach. A three-dimensional block model was generated to enable grade estimation. The selected block size was based on the geometry of the domain interpretation and the data configuration. The block size of 5 m E by 5 m N by 5 m RL was selected. The "percent" block modelling technique was used to represent the volume of the interpreted wireframe models. Sufficient variables were included in the block model construction to enable grade estimation and reporting.

Resource estimation for the Campbell deposit was undertaken using ordinary kriging ("OK") as the principal estimation methodology for V₂O₅. The OK estimates were completed using Gemcom mining software. In 2016, Largo updated mineral resource estimate for the Campbell deposit as a result of depletion of mined resources. This Measured and Indicated resource was used to update the reserve and used for the new mine plan presented in the Technical Report prepared by GE21.

The new block model incorporates percent magnetics (percent of magnetic minerals in the mineralized rock) and magnetite concentrate grade for V₂O₅ and SiO₂. No new drilling was available for the estimate; however, it was adjusted for mining completed to date. The updated Mineral Resources for the Campbell deposit are presented below:

Campbell Mineral Resources – Maracás Menchen Mine					
Effective date: May 2, 2017					
Category	Tonnes (million)	V ₂ O ₅ head grade (%)	V ₂ O ₅ contained (kt)	V ₂ O ₅ in concentrate (%)	Magnetics (%)
Measured (M)	18.08	1.19	215.0	3.19	30.55
Indicated (I)	1.70	1.28	21.7	3.12	34.64
Total M&I	19.78	1.20	236.7	3.19	30.90
Inferred	1.65	1.20	19.8	3.10	33.08

Resources within a pit shell using US\$34.20/t all in operating cost and reported at a 0.45% V₂O₅ cut-off, reviewed and confirmed by Fabio Valério Xavier (GE21).

Mineral Reserves have been estimated for the Campbell deposit with an effective date of May 2, 2017. The mine plan developed in the Technical Report is based on Measured and Indicated resources only as delineated in the table above. Reserves are reported using a sales price of US\$6.34 per lb of V₂O₅. The ultimate pit design and mine plan was done to optimize kiln feed. The open pit Mineral Reserve estimate is based on a mine plan and open pit designs developed using modifying parameters including metal prices, metal recovery based on performance of the processing plant, operating and sustaining capital cost estimates based on the production schedule and equipment requirements. Other factors including; dilution, mining recovery, shipping terms, geotechnical

characteristics of the rock mass, and the likelihood of obtaining land title, required permits environmental, social and legal licenses may affect the final Mineral Resources and Reserves.

The Mineral Reserves presented below were estimated by Porfirio Cabaleiro Rodriguez of GE21, who is a qualified person under NI 43-101 and a Member of the Australian Institute of Geoscientists.

Campbell Mineral Reserves – Maracás Menchen Mine					
Block dimensions 5x5x5 (m) – Mine Recovery 100% and Dilution 5%					
Effective date: May 2, 2017					
Reserve Category	Tonnage (kt)	V ₂ O ₅ head grade (%)	Magnetics (%)	V ₂ O ₅ in concentrate (%)	Contained V ₂ O ₅ (kt)
Proven	17,570	1.14	29.66	3.21	167.3
Probable	1,440	1.26	33.89	3.20	15.6
Total in pit Reserve	19,010	1.15	29.98	3.21	182.9

Notes to mineral reserve and mineral resource estimates:

1. A probable mineral reserve is the economically mineable part of an indicated mineral resource, and in some circumstances, measured mineral resource.
2. A proven mineral reserve is, in most common circumstances, the economically mineable part of a measured mineral resource.
3. Mineral reserves are included in measured and indicated resources.
4. The reference point at which mineral reserves are defined is the point where the ore is delivered from the open pit to the crushing plant.
5. The mineral resource and mineral reserve estimates are reported in accordance with the National Instrument 43-101 – Standards of Disclosure for Mineral Projects (NI 43-101) and the CIM Definition Standards on Mineral Resources and Reserves (CIM Definition Standards) as a minimum standard.

The Company also completed a revised block model and updated mineral resource estimate for the Near Mine Targets incorporating the drilling from the 2011 program including 72 holes totalling 13,401 m. The Near Mine Targets which extend north from Gulçari A for eight kilometres include from south to north: Gulçari A Norte, Gulçari B, São José, Novo Amparo and Novo Amparo Norte. All are hosted in the Rio Jacaré Intrusion.

The Mineral Resources presented in the following table are considered current (subject to the update for Novo Amparo Norte in the following “Recent Developments” section) and do not include any drill results from the 2018 or 2019 drill programs.

Satellite Deposits Mineral Resources				
Effective date: May 2, 2017				
Deposits	Category	Tonnes (kt)	V ₂ O ₅ (%)	Contained V ₂ O ₅ (t)
Gulçari A Norte**	Inferred	9,730	0.84	81,388
Gulçari B**	Inferred	2,910	0.70	20,312
Novo Amparo**	Inferred	1,560	0.72	11,255
Novo Amparo Norte**	Inferred	9,720	0.87	84,453
São José**	Inferred	3,900	0.89	34,706
Satellite Deposits (Total)**	Inferred	27,820	0.83	232,114

** Resources within a pit shell using US\$34.20/t all in operating cost and reported at a 0.45% V₂O₅ cut-off, reviewed and confirmed by Porfirio Cabaleiro Rodriguez (GE21).

Notes to mineral reserve and mineral resource estimates:

1. Mineral resources within a pit shell using US\$34.20/t all in operating cost and reported at a 0.45% V₂O₅ cut-off, reviewed and confirmed by Fabio Valério Xavier (GE21).
2. Mineral resources are classified as measured, indicated and inferred based on relative levels of confidence in their estimation and on technical and economic parameters consistent with the methods most suitable to their potential commercial exploitation.
3. The mineral resource and mineral reserve estimates are reported in accordance with the National Instrument 43-101 – Standards of Disclosure for Mineral Projects (NI 43-101) and the CIM Definition Standards on Mineral Resources and Reserves (CIM Definition Standards) as a minimum standard.
4. The PEA is preliminary in nature and includes only inferred mineral resources that are considered too speculative geologically to have any economic consideration applied to them that would enable them to be categorized as a mineral reserve. There is no certainty that the PEA will be realized. These results have no impact on the results of any pre-feasibility or feasibility with respect to the Maracás Menchen Mine.

GE21 recommended the Near Mine Targets be developed sequentially as follows: Novo Amparo Norte, Gulçari A Norte & Gulçari B, São José, Campbell in pit resources and Novo Amparo.

The Technical Report prepared by GE21 was designed to allow the Company to more fully optimize operations in order to maximize the Maracás Menchen Mine’s NPV and is based on the production of V₂O₅ from the Maracás Menchen Mine’s mineral resources as well as from its established mineral reserves. The report does not provide any credit for by-products, however Largo will continue to evaluate the technical and economic viability of all

potential by-products. The Technical Report respects the definition of PEA as described in the CSA Staff Notice 43-307 – Mining Technical Report – Preliminary Economic Assessments, issued by the Canadian Securities Administrators on August 16, 2012.

Qualified Persons

Porfirio Cabaleiro Rodriguez, Mining Engineer, BSc (Mine Eng), MAIG employed by GE21, Leonardo Apparicio da Silva, Mining Engineer, BSc (Min Eng), MSc (Met Eng), MAIG associated to GE21, and Fabio Valerio Xavier, Geologist, BSc, Geol, MAIG associated to GE21, are the Qualified Persons as defined in NI 43-101 responsible for the Technical Report and are all independent of the Company.

Quality Assurance Quality Control

The scientific and technical information in this reserves and resources section of the MD&A has been reviewed and approved by Porfirio Cabaleiro Rodriguez, Mining Engineer, BSc (Mine Eng), MAIG, GE21 director; Leonardo Apparicio da Silva, Mining Engineer, BSc (Min Eng), MSc (Met Eng), MAIG; and Fabio Valerio Xavier, Geologist, BSc, Geol, MAIG, both employed by GE21, all of whom are Qualified Persons as defined in NI 43-101.

Recent Developments

The Company completed a two-phase exploration program in 2018. Phase I was a 2,000 metre in-pit drill program designed to further define the reserve block model for production over the next two to three years in the Campbell Pit. This program began in the middle of April 2018 and was completed on May 30, 2018. The in-pit program completed 31 holes totalling 2,323 metres. The data was modelled and used for mine planning and development purposes. Consultants from GE21 assisted in the modelling.

Phase II included a 4,950 metre drilling program focused on upgrading and expanding the Near Mine Targets and along strike high priority targets. Drilling began on June 4, 2018 with two rigs focused at Novo Amparo Norte and the Company completed 24 holes totalling 4,223 metres prior to December 31, 2018. This included 13 infill and 11 step out holes. On December 19, 2018, the Company announced that this program had expanded the mineralization to the north and south at Novo Amparo Norte. Infill drilling was designed to upgrade the resource category at Novo Amparo Norte. Additionally, seven holes were drilled on targets south of the Campbell pit. The drill program was completed on October 23, 2018.

The Company extended the Phase II definition drilling program at Novo Amparo Norte in the first quarter of 2019. Diamond drilling was initiated at Novo Amparo Norte on January 15, 2019. In total, 47 diamond drill holes (5,404 metres) were completed. The work focused on increasing confidence in the resource categories and extending mineralisation at depth and along strike. This program was completed mid-February 2019. On June 11, 2019, the Company reported a new resource estimate for Novo Amparo Norte based on 12,911 metres (88 drill holes) of drilling with an effective date of May 31, 2019.

Novo Amparo Norte Mineral Resources						
Effective date: May 31, 2019						
Category	Tonnes (million)	V ₂ O ₅ head grade (%)	Magnetics (%)	Magnetic concentrate V ₂ O ₅ (%)	V ₂ O ₅ contained in magnetic concentrate (t)	
Measured (M)	6.25	0.91	33.1	2.32	48,046	
Indicated (I)	5.98	0.85	28.1	2.50	41,996	
Total M&I	12.23	0.88	30.7	2.41	90,042	
Inferred	11.33	0.90	31.2	2.46	86,960	

1. Mineral Resources have been classified using the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
2. Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to the Measured and Indicated Mineral Resource. It is reasonably expected that a portion of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
3. Magnetic content is determined by Davis Tube Test methodology. V₂O₅ content of the magnetic concentrate was determined by XRF79C methodology at the SGS facility in Belo Horizonte, Brazil.
4. Assuming only mineralized zones grading 0.45% V₂O₅ or greater
5. Numbers may not add up exactly due to rounding.

In Q2 2019 exploration work shifted to the Novo Amparo deposit where 4,646 metres (24 drill holes) of drilling were completed. Drilling was also completed at the São José deposit where 2,813 metres (18 drill holes) of drilling were completed. Further drilling was carried out on the Gulçari A Norte and Gulçari B (now considered as one target). Drilling on all targets focussed on extending and upgrading known mineralization as defined in the 2017 Technical Report. The Company also completed 1,177 metres of drilling (three holes) neat the Campbell Pit to explore for target horizons down dip and along strike of the current reserve area.

In Q4 2019 work focussed primarily on the Gulçari A South target where 2,313 metres (16 drill holes) were completed.

Based on all diamond drilling across the Near Mine Targets, a new geological interpretation of the Rio Jacaré intrusion was formulated that has helped the Company to better understand the intrusive complex to improve drilling targeting and interpretation of mineralized zones. Diamond drilling was completed in early December 2019 and all analytical data has now been received. Work is in process collating the data and preparing new geological models for updated resource models at the various targets.

Outlook

The Company has developed an Exploration Master Plan (“EMP”) for 2019 to 2021 to advance known deposits, increase resources and reserves, further evaluate the potential for along strike continuation of the vanadium rich magnetite mineralization and to maintain the Company’s mineral concessions to the north and south of the Campbell deposit. The EMP includes ground magnetic surveys, mapping, sampling, drilling and modelling of deposits on the mineral concessions. Where required, landowners are being contacted for permission to access their lands to perform exploration work. In addition, necessary permits for vegetation suppression are in process and upon receipt, the Company will continue with its planned exploration program. The Company is forecasting approximately 13,500 metres of drilling at the Near Mine Targets in 2020.

Campo Alegre de Lourdes

Recent Developments

The Company completed a 1,200 metre drilling program in December 2018 and has finalized the geological and structural mapping needed to satisfy the Company’s contractual requirements and to develop the Company’s knowledge of mineralization.

In Q3 2019, a limited drill program was completed at the Morro Branca target at the Campo Alegre de Lourdes project. From July 5 to August 5, 2019 the Company completed six diamond drill holes (1,016 metres) to test down dip extension of mineralisation and to collect material for additional metallurgical testing at the Morro Branca target. Internal studies to determine potential recovery of both V_2O_5 and TiO_2 from the vanadiferous titanomagnetite (“VTM”) mineralisation are being complimented with additional work currently underway at SGS Lakefield’s facility in Canada. This metallurgical testing continues and is being supplemented through the Company’s internal work. The agreement with Companhia Baiana de Pesquisa Mineral (“CBPM”) expired on January 11, 2020. Prior to expiration the Company met with CBPM representatives and agreed to extend the Research Agreement for an additional two years to allow the Company to continue to evaluate the geological and economic potential of the project and the renewed agreement now extends the working relationship to January 11, 2022.

During Q4 2019, the Company had an expense recovery of \$10 (Q4 2018 – expense of \$13) and during 2019, the Company incurred \$353 in expenditures (2018 – \$59) at the Campo Alegre de Lourdes project.

Outlook

Additional metallurgical work is planned in 2020. The Company will continue to evaluate all technical information and will formulate an appropriate work program based on continued metallurgical testing.

Northern Dancer

Recent Developments

Management is not conducting any further work at this time on the Northern Dancer property, as the majority of the Company’s efforts are focused on the Maracás Menchen Mine.

During Q4 2019, the Company incurred \$2 in expenditures (Q4 2018 – \$2) and during 2019, the Company incurred \$10 in expenditures (2018 – \$18) at the Northern Dancer project.

Outlook

Management is not planning any significant expenditures for the foreseeable future.

Currais Novos Tungsten Tailings Project

Recent Developments

Management is not conducting any work at this time on the Currais Novos Tungsten Tailings Project, as the majority of the Company's efforts are focused on the Maracás Menchen Mine.

Outlook

Management is not planning any significant expenditures for the foreseeable future.

FINANCIAL INSTRUMENTS

Financial assets and financial liabilities at December 31, 2019 and 2018 were as follows:

	December 31, 2019	December 31, 2018
Cash	\$ 166,077	\$ 206,188
Restricted cash	99	21
Amounts receivable	247	55,126
Accounts payable and accrued liabilities	101,360	33,461
Current portion of long-term debt	-	117,354

The Company's risk exposures and the impact on the Company's financial instruments are summarized in note 21. There have been no changes in the risks, objectives, policies and procedures from the previous year.

LIQUIDITY AND CAPITAL RESOURCES

The Company's continuance as a going concern is dependent on its ability to maintain profitable levels of operations.

At December 31, 2018, the price per lb of V₂O₅ was between US\$15.00 and US\$16.00. This decreased to a range of between US\$4.80 and US\$5.85 at December 31, 2019, with an average of approximately US\$5.37 for Q4 2019, compared with approximately US\$24.53 for Q4 2018. The price decrease since Q4 2018 is the primary factor behind the decrease in revenues and cash provided before non-cash working capital items seen in Q4 2019 and 2019, compared with Q4 2018 and 2018.

The Company's cash and revenue adjustment payable³ balances are:

	December 31, 2019	December 31, 2018
Cash	\$ 166,077	\$ 206,188
Revenue adjustment payable ³	\$ 95,683	\$ -

Given the overall decline in the market price of V₂O₅ since December 31, 2018, the Company recorded lower revenues in 2019 as a result of significant negative re-measurements of trade receivables / payables. The average price per lb of V₂O₅ was approximately US\$5.71 for January 2020 and approximately US\$6.94 for February 2020. At the date of the MD&A, the market price of V₂O₅ was in a range of US\$5.00 to US\$6.00 per lb.

The Company is continuing to monitor the rapidly developing impacts of the COVID-19 pandemic and will take all possible actions to help minimize the impact on the Company and its people. Given these uncertainties, the Company is actively working to secure credit facilities to provide it with additional cash resources should the impacts be significant.

The Company has forecast its expected cash balance and the estimated revenue adjustment payable³ at April 30, 2020 (the end date of the May 14, 2008 off-take agreement with Glencore International AG – refer to the "2019

³ The revenue adjustment payable and estimated revenue adjustment payable for V₂O₅ sold are on a non-GAAP basis. Refer to the "Non-GAAP Measures" section of this MD&A.

Highlights” section of this MD&A) under three different vanadium price scenarios. Each scenario assumes that the vanadium price shown in the table below applies from January 1, 2020 to April 30, 2020 and assumes constant foreign exchange rates and total cash costs (this is a non-GAAP measure, refer to page 9 of this MD&A) consistent with the guidance on page 9 of this MD&A. The forecast balances, which constitute forward-looking information, are shown in the following table.

	US\$5.00/lb	US\$6.00/lb	US\$7.00/lb
Forecast cash at April 30, 2020	\$ 165,295	\$ 165,464	\$ 165,949
Estimated revenue adjustment payable ⁴ at April 30, 2020	93,281	84,474	75,826
Net at April 30, 2020	\$ 72,014	\$ 80,990	\$ 90,123

Assuming an increase or decrease in the V₂O₅ price of US\$1.00/lb after April 1, 2020, the Company expects the revenue adjustment payable⁴ to impact future periods (positively or negatively) by approximately US\$7,400 (\$10,730 using a foreign exchange rate of 1.45).

The adequacy of the Company’s capital structure is assessed on an ongoing basis and adjusted as necessary after taking into consideration the Company’s strategy, vanadium prices, economic conditions and associated risks. To maintain or adjust its capital structure, the Company may adjust capital expenditures, issue new common shares or take on new debt. At December 31, 2019, the Company’s debt balance was \$nil as a result of the final redemption of Notes as described in note 11. Subsequent to the period, the Company received gross proceeds of \$1,713 from the exercise of 2,707 warrants with an exercise price of \$0.65.

Senior secured notes

On May 22, 2018, the Company completed a private placement of US\$150,000 (\$191,790) aggregate principal amount of senior secured notes due in 2021 (the “Notes”). The Notes were callable in years 2 and 3 and had an interest rate of 9.25% per annum, paid on a semi-annual basis in arrears on December 1 and June 1 each year, beginning on December 1, 2018. The terms of the Notes allowed the Company to redeem all or part of the Notes at varying redemption prices and established certain restrictive covenants. In addition, the Notes required the Company to make an offer to purchase the maximum amount of the Notes that may be purchased with 75% of the excess cash flow for each six-month period ending June 30 and December 31.

Following the satisfaction of the escrow release conditions, the net proceeds from the offering of US\$143,277 (\$183,194), being the principal amount less a 2% original issue discount, fees and certain expenses of the offering were used, together with cash on hand at the time of repayment, to repay in full the Company’s BNDES Facility, 2016 Facility, 2017 Facility, Swap Facility and export credit facilities, plus accrued and unpaid interest and any fees and expenses in connection therewith. The total amount paid in settlement of these facilities, including principal, interest and fees, was \$247,976.

The total costs incurred in relation to the issuance of the Notes was \$10,476.

On September 20, 2018, the Company redeemed US\$15,000 in aggregate principal amount, representing 10% of the US\$150,000 aggregate principal amount of Notes currently outstanding. The redemption price was 105% per principal amount of the Notes redeemed, plus accrued and unpaid interest up to, but not including, September 20, 2018.

Under the terms of the Notes, the Company had until November 18, 2018 (180 days from the closing date of the offering) to provide and duly register in Brazil the Pledge over all the shares the Company holds in its operating subsidiary, Vanádio de Maracás S.A. (“Vanádio”). This Pledge was registered and the Company provided the required evidence of same to the trustee under the indenture governing the Notes on November 8, 2018.

On December 10 and 12, 2018, the Company purchased and cancelled US\$16,173 and US\$26,015 in aggregate principal amounts of Notes outstanding. The redemption prices were 104.750% and 105.125% per principal amount of the Notes redeemed, respectively, plus accrued and unpaid interest up to these dates.

On January 28, 2019 and February 19, 2019, the Company completed the purchase and cancellation of US\$59,221 and US\$4,490 in aggregate principal amounts of Notes outstanding. The Notes were purchased at a price equal to

⁴ The revenue adjustment per pound, revenue adjustment payable, estimated revenue adjustment payable for V₂O₅ sold and cash operating costs per pound produced reported are on a non-GAAP basis. Refer to the “Non-GAAP Measures” section of this MD&A.

105.625% per principal amount of the Notes redeemed plus accrued and unpaid interest up to January 28, 2019 and February 15, 2019, respectively.

On May 3, 2019, the Company made an excess cash flow offer to purchase all of its outstanding Notes at that time of US\$29,101 at a purchase price of 103% of the principal amount thereof plus accrued and unpaid interest to, but not including, the purchase date. The offer was required to be made in accordance with the terms of the Notes and following this offer, US\$6,736 of the Notes were repurchased and cancelled.

On June 10, 2019, the Company announced that it had elected to redeem the remaining outstanding Notes. The Notes were redeemed on July 8, 2019 at a price equal to 104.625% of the principal amount of the Notes plus accrued and unpaid interest to, but not including, the redemption date. The total amount paid was US\$23,606 (\$30,905), including the principal amount of Notes outstanding of US\$22,365 (\$29,280).

Following this redemption on July 8, 2019, the balance of the Notes outstanding was \$nil and therefore, the Company is debt free.

At December 31, 2019, the balance of the Notes was US\$nil (\$nil) (December 31, 2018 – US\$92,812 (\$126,503)).

Maracás Menchen Mine

The contract with the Company's off-take partner commenced in May 2014 and production of vanadium commenced during August 2014, with the first sale of vanadium pentoxide flake concluded during September 2014. Since this time, the Company has continued to further ramp up the production and sales of V₂O₅, as described in the "Maracás Menchen Mine" section above. In connection with the ramp-up, the Company has also evaluated its future financial requirements, including inter alia its sustaining capital and working capital needs for the next 12 months.

At December 31, 2019, the Company had an accumulated deficit of \$64,073 since inception (December 31, 2018 – \$29,481) and had a net working capital surplus of \$102,013 (December 31, 2018 – \$135,258) (defined as current assets less current liabilities). The total amount due within 12 months on the Company's long-term debt is \$nil (December 31, 2018 – \$126,503).

The following table details the Company's expected remaining contractual cash flow requirements at December 31, 2019 for its liabilities and commitments with agreed repayment periods. The amounts presented are based on the undiscounted cash flows and therefore, may not equate to the carrying amounts on the consolidated statement of financial position.

	Less than 6 months	6 months to 1 year	1 to 3 years	Over 3 years
Accounts payable and accrued liabilities	\$ 101,360	\$ -	\$ -	\$ -
Operating and purchase commitments	10,751	1,701	444	177
	\$ 112,111	\$ 1,701	\$ 444	\$ 177

The Company's principal sources of liquidity are its cash flow from operating activities and cash of \$166,077 (December 31, 2018 – \$206,188). In response to the vanadium price decreases throughout 2019, the Company has adopted certain measures to manage its liquidity risk including repaying its Notes during the year ended December 31, 2019. Despite these measures, and in conjunction with the current vanadium price environment, a risk exists that the Company will not have sufficient liquidity to meet its obligations as they come due. At December 31, 2019, the Company's trade receivables was in a liability position of \$87,782 and was classified as trade payables within accounts payable and accrued liabilities (refer to notes 10 and 21(a)) (December 31, 2018 – trade receivables of \$55,011 (refer to note 5)).

OUTSTANDING SHARE DATA

(Exercise prices presented in this section are in dollars and not thousands).

At December 31, 2019, there were 554,534 common shares of the Company outstanding. At the date of this MD&A, there were 562,976 common shares of the Company outstanding.

At December 31, 2019, under the share compensation plan of the Company, 808 RSUs were outstanding and 3,147 stock options were outstanding with exercise prices ranging from \$0.46 to \$3.04 and expiry dates ranging between June 17, 2020 and January 14, 2024. If exercised, the Company would receive proceeds of \$3,012. The weighted average exercise price of the stock options outstanding is \$0.96.

As of the date of this MD&A, 752 RSUs and 2,947 stock options were outstanding with exercise prices ranging from \$0.46 to \$3.04 and expiry dates ranging between June 17, 2020 and January 14, 2024.

At December 31, 2019, 108,102 common share purchase warrants were outstanding with exercise prices ranging from \$0.29 to \$1.15 and expiring between January 6, 2020 and December 13, 2022. If these warrants were exercised, the Company would receive proceeds of \$45,825. The weighted average exercise price of the warrants is \$0.42.

As of the date of this MD&A, 104,593 common share purchase warrants were outstanding with exercise prices ranging from \$0.29 to \$1.15 and expiring between December 31, 2020 and December 13, 2022.

TRANSACTIONS WITH RELATED PARTIES

The 2019 annual consolidated financial statements include the financial statements of the Company and its subsidiaries. There have been no changes in the Company's ownership interests in its subsidiaries since December 31, 2018, with the addition of two new subsidiaries as shown in note 4(a). The Company had transactions with related parties during 2019. Refer to note 17.

Additional information regarding the compensation of officers and directors of the Company is disclosed in the Company's management information circular, which is available under the profile of the Company on SEDAR at www.sedar.com.

COMMITMENTS AND CONTINGENCIES

At December 31, 2019, the Company was party to certain management and consulting contracts. Minimum commitments under the agreements are approximately \$3,130 and are all payable within one year. These contracts also require that additional payments of up to approximately \$4,695 be made upon the occurrence of certain events such as change of control. As the triggering event has not occurred, the contingent payments have not been reflected in these consolidated financial statements.

In 2008, Largo agreed to sell 100% of its vanadium production to Glencore International AG under an off-take agreement which, following the election by the Company, will expire at the end of April 2020.

The Company's mining and exploration activities are subject to various federal, provincial and international laws and regulations governing the protection of the environment. These laws and regulations are continually changing and generally becoming more restrictive. The Company has made payments to comply with such laws and regulations.

The Company indemnifies its directors and officers against any and all claims or losses reasonably incurred in the performance of their service to the Company to the extent permitted by law. The Company has acquired and maintains liability insurance for its directors and officers.

The Company is committed to a minimum amount of rental payments under three leases of office space which expire on December 31, 2023, April 30, 2022 and October 31, 2020, respectively. Minimum rental commitments remaining under the leases are approximately \$858, including \$257 due within one year. In addition, minimum rental commitments remaining under other short-term leases are approximately \$110, all due within one year.

At the Company's Maracás Menchen Mine, the Company has entered into purchase order contracts with remaining amounts due related to goods not received or services not rendered as of December 31, 2019 of \$8,975.

The Company, through its subsidiaries, is party to legal proceedings in the ordinary course of its operations related to legally binding agreements with various third parties under supply contracts and consulting agreements. At December 31, 2019 two such proceedings were ongoing, each in Brazil. The first relates to a supply agreement for the Maracás Menchen Mine which was filed with the courts in October 2014. The amount claimed totals R\$9,900 (\$3,203), with a counterclaim filed by Vanádio for R\$10,700 (\$3,461). A provision of R\$1,324 (\$428)

has been recognized at December 31, 2019 for the probable loss (December 31, 2018 – R\$1,455 (\$511)). The second proceeding relates to a consulting agreement dispute for which R\$3,900 (\$1,262) (December 31, 2018 – R\$3,900 (\$1,371)) has been claimed against two of the Company's subsidiaries. No provision has been recognized for this proceeding. The Company and its subsidiaries are also party to legal proceedings regarding labour matters. A provision was recorded at December 31, 2018 for such proceedings in an amount of R\$2,566 (\$902). At December 31, 2019, the provision recognized was R\$3,468 (\$1,122). The outcome of these proceedings remains dependent on the final judgment, which the Company does not expect to be delivered within the next 12 months. Management does not expect the outcome of any of the remaining proceedings to have a materially adverse effect on the results of the Company's financial position or results of operations. Should any losses result from the resolution of these claims and disputes, they will be charged to operations in the period that they are determined.

DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROLS OVER FINANCIAL REPORTING

Disclosure Controls and Procedures

The Company's disclosure controls and procedures ("DC&P") are designed to provide reasonable assurance that all relevant information is communicated to management to allow timely decisions regarding required disclosure. An evaluation of the effectiveness of the Company's DC&P, as defined under the rules of the Canadian Securities Administration, was conducted as at December 31, 2019 under the supervision of the Chief Executive Officer ("CEO") and the Chief Financial Officer ("CFO") and with the participation of management. Based on the results of that evaluation, the CEO and CFO concluded that the Company's DC&P were effective as at December 31, 2019 providing reasonable assurance that the information required to be disclosed in the Company's annual filings, interim filings or other reports filed or submitted by it under securities legislation is recorded, processed, summarized and reported in accordance with securities legislation.

Internal Control over Financial Reporting

Internal control over financial reporting ("ICFR") is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. ICFR should include those policies and procedures that establish the following:

- maintenance of records in reasonable detail, that accurately and fairly reflect the transactions and dispositions of assets;
- reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with applicable IFRS;
- receipts and expenditures are only being made in accordance with authorizations of management or the Board of Directors; and
- reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial instruments.

The Company's management, under supervision of the CEO and CFO, assessed the effectiveness of the Company's ICFR based on the criteria established in Internal Control – Integrated Framework (2013) issued by The Committee of Sponsoring Organizations of the Treadway Commission and concluded that as at December 31, 2019, the Company's ICFR was effective.

During the year ended December 31, 2019, the Company did not make any significant changes to its ICFR that would have materially affected, or reasonably likely to materially affect, its ICFR.

Limitations of Disclosure Controls and Procedures and Internal Control over Financial Reporting

The Company's management, including the CEO and CFO, believe that due to inherent limitations, any DC&P or ICFR, no matter how well designed and operated, can provide only reasonable, not absolute, assurance of achieving the desired control objectives. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that any design will not succeed in achieving its stated goals under all potential future conditions. Accordingly, because of the inherent limitations

in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. Additionally, management is required to use judgment in evaluating DC&P and ICFR.

SIGNIFICANT ACCOUNTING JUDGMENTS, ESTIMATES AND ASSUMPTIONS

The preparation of the 2019 annual consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and reported amounts of expenses during the reporting period. Actual outcomes could differ from these estimates. These 2019 annual consolidated financial statements include estimates, which, by their nature, are uncertain. The impacts of such estimates are pervasive throughout the 2019 annual consolidated financial statements and may require accounting adjustments based on future occurrences. Revisions to accounting estimates are recognized in the period in which the estimate is revised, and the revision affects both current and future periods.

Significant areas requiring the use of estimates and assumptions relate to the determination of mineral reserve estimates and the impact on stripping costs, useful lives of mine properties, plant and equipment, impairment analysis of non-financial assets and estimates of the timing of outlays for asset retirement obligations. Other significant areas include the valuation of mine properties, plant and equipment and development properties, estimates of provisions for environmental rehabilitation, current and deferred taxes and contingencies. Refer to note 4(d) for a detailed description of these areas of significant judgment, estimates and assumptions. Actual results could differ from those estimates.

CHANGES IN ACCOUNTING POLICIES

The basis of presentation, and accounting policies and methods of their application in the 2019 annual consolidated financial statements are consistent with those used in the Company's annual consolidated financial statements for the year ended December 31, 2018, except as disclosed in notes 3 and 4(c), which describe the Company's adoption of IFRS 16, Leases, as well as the Company's revised accounting policy for leases. In addition, the Company's new accounting policy for vanadium products is described in note 4(c).

NON-GAAP⁵ MEASURES

The Company uses certain non-GAAP financial performance measures in its MD&A, which are described in the following section.

Revenues Per Pound

The Company's MD&A refers to revenues per pound sold, including vanadium sales per pound sold and revenue adjustment per pound sold. These are non-GAAP performance measures and are used to provide investors with information about key measures used by management to monitor performance of the Maracás Menchen Mine.

These measures, along with cash operating costs per pound produced, are considered to be one of the key indicators of the Company's ability to generate operating earnings and cash flow from its Maracás Menchen Mine. These revenues per pound measures do not have any standardized meaning prescribed by IFRS and differ from measures determined in accordance with IFRS. These measures are intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. These measures are not necessarily indicative of net earnings or cash flow from operating activities as determined under IFRS.

The following tables provide a reconciliation of these measures per pound sold for the Maracás Menchen Mine to revenues as per the 2019 annual consolidated financial statements.

⁵ GAAP – Generally Accepted Accounting Principles.

	Three months ended	
	December 31, 2019	December 31, 2018
Revenues ¹	\$ 34,118	\$ 177,543
V ₂ O ₅ sold (000s lb)	6,305	5,556
Revenues per pound sold (\$/lb)	\$ 5.41	\$ 31.96
Revenues per pound sold (US\$/lb) ⁴	\$ 4.09	\$ 24.19
Vanadium sales from a contract with a customer ²	\$ 47,568	\$ 167,639
V ₂ O ₅ sold (000s lb)	6,305	5,556
Vanadium sales per pound sold (\$/lb)	\$ 7.54	\$ 30.17
Vanadium sales per pound sold (US\$/lb) ⁴	\$ 5.70	\$ 22.84
Re-measurement of trade receivables / payables ³	\$ (13,450)	\$ 9,904
V ₂ O ₅ sold subject to re-measurement (000s lb)	5,952	2,712
Revenue adjustment per pound (\$/lb)	\$ (2.26)	\$ 3.65
Revenue adjustment per pound (US\$/lb) ⁴	\$ (1.71)	\$ 2.76

1. Calculated as the amount per note 22 less the amount disclosed for the nine-month period in note 20 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$140,012 – \$105,894 = \$34,118.

Calculated as the amount per note 22 less the amount disclosed for the nine-month period in note 20 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2018: \$521,415 – \$343,872 = \$177,543.

2. Calculated as the amount per note 22 less the amount disclosed for the nine-month period in note 20 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$277,285 – \$229,717 = \$47,568.

Calculated as the amount per note 22 less the amount disclosed for the nine-month period in note 20 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$455,368 – \$287,729 = \$167,639.

3. Calculated as the amount per note 22 less the amount disclosed for the nine-month period in note 20 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$(137,273) – \$(123,823) = \$(13,450).

Calculated as the amount per note 22 less the amount disclosed for the nine-month period in note 20 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$66,047 – \$56,143 = \$9,904.

4. Calculated from "\$/lb" using average \$/US\$ foreign exchange rates of 1.32 and 1.32 for Q4 2019 and Q4 2018, respectively.

	Year ended	
	December 31, 2019	December 31, 2018
Revenues ¹	\$ 140,012	\$ 521,415
V ₂ O ₅ sold (000s lb)	22,399	21,427
Revenues per pound sold (\$/lb)	\$ 6.25	\$ 24.33
Revenues per pound sold (US\$/lb) ²	\$ 4.70	\$ 18.68
Vanadium sales from a contract with a customer ¹	\$ 277,285	\$ 455,368
V ₂ O ₅ sold (000s lb)	22,399	21,427
Vanadium sales per pound sold (\$/lb)	\$ 12.38	\$ 21.25
Vanadium sales per pound sold (US\$/lb) ²	\$ 9.32	\$ 16.32
Re-measurement of trade receivables / payables ¹	\$ (137,273)	\$ 66,047
V ₂ O ₅ sold subject to re-measurement (000s lb)	22,686	18,717
Revenue adjustment per pound (\$/lb)	\$ (6.05)	\$ 3.53
Revenue adjustment per pound (US\$/lb) ²	\$ (4.55)	\$ 2.71

1. As per note 22.

2. Calculated from "\$/lb" using average \$/US\$ foreign exchange rates of 1.33 and 1.30 for the years ended December 31, 2019 and 2018, respectively.

Cash Operating Costs Per Pound Produced

The Company's MD&A refers to cash operating costs per pound produced, a non-GAAP performance measure, in order to provide investors with information about a key measure used by management to monitor performance. This information is used to assess how well the Maracás Menchen Mine is performing compared to plan and prior periods, and also to assess its overall effectiveness and efficiency.

Cash operating costs includes mine site operating costs such as mining costs, plant and maintenance costs, sustainability costs, mine and plant administration costs, royalties and sales, general and administrative costs (all for the mine properties segment), but excludes depreciation and amortization, share-based payments, foreign exchange gains or losses, commissions, reclamation, capital expenditures and exploration and evaluation costs. These costs are then divided by the pounds of production from the Maracás Menchen Mine to arrive at the cash operating costs per pound produced. This measure differs to the new total cash costs non-GAAP measure the Company will use to measure its performance starting in 2020 – refer to the details on page 9 of this MD&A.

These measures, along with revenues, is considered to be one of the key indicators of the Company's ability to generate operating earnings and cash flow from its Maracás Menchen Mine. These cash operating costs measures do not have any standardized meaning prescribed by IFRS and differ from measures determined in accordance with IFRS. These measures are intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. These measures are not necessarily indicative of net earnings or cash flow from operating activities as determined under IFRS.

In addition, the Company's MD&A refers to cash operating costs excluding royalties. This is a non-GAAP performance measure and is calculated as cash operating costs less royalties, as disclosed in the following tables.

The following tables provide a reconciliation of cash operating costs per pound produced for the Maracás Menchen Mine to operating costs, excluding depreciation expense as per the 2019 annual consolidated financial statements.

	Three months ended	
	December 31, 2019	December 31, 2018
Operating costs ¹	\$ 29,980	\$ 37,637
Professional, consulting and management fees ²	1,382	2,612
Other general and administrative expenses ³	340	2,348
Less: depreciation and amortization expense ⁴	(7,979)	(7,347)
Cash operating costs	\$ 23,723	\$ 35,250
Less: royalties ⁵	(1,976)	(8,958)
Cash operating costs excluding royalties	\$ 21,747	\$ 26,292
V ₂ O ₅ produced (000s lb)	6,638	5,721
Cash operating costs per pound produced (\$/lb)	\$ 3.57	\$ 6.16
Cash operating costs per pound produced (US\$/lb) ⁶	US\$ 2.70	US\$ 4.66
Cash operating costs excluding royalties per pound produced (\$/lb)	\$ 3.28	\$ 4.60
Cash operating costs excluding royalties per pound produced (US\$/lb) ⁶	US\$ 2.48	US\$ 3.48

1. Calculated as the amount for the Company's Mine properties segment in note 18, less the amount disclosed for the Mine properties segment for the nine-month period in note 17 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$123,841 – \$93,861 = \$29,980.

2. Calculated as the amount for the Company's Mine properties segment in note 18, less the amount disclosed for the Mine properties segment for the nine-month period in note 17 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$6,013 – \$4,631 = \$1,382.

3. Calculated as the amount for the Company's Mine properties segment in note 18, less the amount disclosed for the Mine properties segment for the nine-month period in note 17 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$1,145 – \$805 = \$340.

4. Calculated as the amount per note 23, less the amount disclosed for the nine-month period in note 21 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$31,668 – \$23,689 = \$7,979.

5. Calculated as the amount per note 23, less the amount disclosed for the nine-month period in note 21 of the Company's unaudited condensed interim consolidated financial statements for the three and nine months ended September 30, 2019: \$7,921 – \$5,945 = \$1,976.

6. Calculated from "\$/lb" using average \$/US\$ foreign exchange rates of 1.32 and 1.32 for Q4 2019 and Q4 2018, respectively.

	Year ended	
	December 31, 2019	December 31, 2018
Operating costs ¹	\$ 123,841	\$ 135,746
Professional, consulting and management fees ²	6,013	9,680
Other general and administrative expenses ²	1,145	3,759
Less: depreciation and amortization expense ¹	(31,668)	(31,031)
Cash operating costs	\$ 99,331	\$ 118,154
Less: royalties ¹	(7,921)	(22,678)
Cash operating costs excluding royalties	\$ 91,410	\$ 95,476
V ₂ O ₅ produced (000s lb)	23,318	21,671
Cash operating costs per pound produced (\$/lb)	\$ 4.26	\$ 5.45
Cash operating costs per pound produced (US\$/lb) ³	US\$ 3.21	US\$ 4.19
Cash operating costs excluding royalties per pound produced (\$/lb)	\$ 3.92	\$ 4.41
Cash operating costs excluding royalties per pound produced (US\$/lb) ³	US\$ 2.95	US\$ 3.38

1. As per note 23.

2. As per the Mine properties segment in note 18.

3. Calculated from "\$/lb" using average \$/US\$ foreign exchange rates of 1.33 and 1.30 for the years ended December 31, 2019 and 2018, respectively.

Revenue Adjustment Payable

The Company's MD&A refers to revenue adjustment payable, a non-GAAP performance measure used to provide investors with information about a key measure used by management as part of its monitoring of the financial liquidity of the Company.

This measure is considered to be one of the key components monitored relating to the Company's projected financial liquidity and capital resources. This revenue adjustment payable does not have any standardized meaning prescribed by IFRS and differs from measures determined in accordance with IFRS. This measure is intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance, financial liquidity or capital resources prepared in accordance with IFRS. This measure is not necessarily indicative of cash flow from operating activities or disclosed commitments as determined and presented under IFRS.

The following table provides a reconciliation of this measure to trade receivables / payables as per the 2019 annual consolidated financial statements. At December 31, 2018, the Company had a trade receivable of \$55,011, with a revenue adjustment payable of \$nil.

	December 31, 2019
Trade payables ¹	\$ 87,782
Add: amounts to be received included in trade payables	7,901
Revenue adjustment payable	\$ 95,683
Add: estimated future re-measurement for V ₂ O ₅ sold ²	556
Estimated revenue adjustment payable for V ₂ O ₅ sold at December 31, 2019	\$ 96,239
Revenue adjustment payable	\$ 95,683
Add: estimated future re-measurement for V ₂ O ₅ sold ³	(1,295)
Estimated revenue adjustment payable for V ₂ O ₅ sold at the date of this MD&A	\$ 94,388

1. As per note 10.

2. Estimated based on the quantity of V₂O₅ sold in the year ended December 31, 2019 that is subject to re-measurement. The estimate assumes there is no change in the price per pound of V₂O₅ for the remainder of the duration of the Company's off-take agreement from that stated as being the price at December 31, 2019 in the "Liquidity and Capital Resources" section of this MD&A and it assumes no receipt or payment of cash in relation to any amount in this table.

3. Estimated based on the quantity of V₂O₅ sold in the year ended December 31, 2019 and in the two months ended February 29, 2020 that is subject to re-measurement. The estimate assumes there is no change in the price per pound of V₂O₅ for the remainder of the duration of the Company's off-take agreement from that stated as being the price at the date of this MD&A in the "Liquidity and Capital Resources" section of this MD&A and it assumes no receipt or payment of cash in relation to any amount in this table.

RISKS AND UNCERTAINTIES

The Company is subject to various business, financial and operational risks that could materially adversely affect the Company's future business, operations and financial condition. These risks could cause such future business, operations and financial condition to differ materially from the forward-looking statements and information contained in this MD&A and as described in the Cautionary Statement Regarding Forward-Looking Information found in this MD&A.

The Company's business activities expose it to significant risks due to the nature of mining, development and exploration activities. The ability to manage these risks is a key component of the Company's business strategy. Management is forward looking in its assessment of risks. Identification of key risks occurs in the course of business activities, pursuing approved strategies and as part of the execution of risk oversight responsibilities at the management and Board of Directors' level.

For a full discussion of the Company's Risks and Uncertainties, please refer to the Annual Information Form for the year ended December 31, 2019, which is filed to the Company's profile on SEDAR at www.sedar.com.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

The information presented in this MD&A contains "forward-looking information" and "forward-looking statements" within the meaning of applicable Canadian and United States securities laws concerning the Company's projects, capital, anticipated financial performance, business prospects and strategies and other general matters. These statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those included in the forward-looking information. The use of words such as "intend", "anticipate", "continue", "estimate", "expect", "may", "will", "project", "should", "believe" and similar expressions are intended to identify forward-looking information. Any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions or future events or performance are not statements of historical fact and may constitute forward-looking information. Statements relating to mineral resources are also forward-looking information, as they involve the implied assessment, based on certain estimates and assumptions that the mineral resources described can be profitably produced in the future. There is no certainty that it will be commercially viable to produce any portion of the mineral resources.

Forward-looking information includes statements with respect to: the Company's goals regarding development of its projects and further exploration and development of its properties; the Company's proposed plans for advancing its projects, and potential future exploration and development projects; expectations regarding the continuity of mineral deposits; future prices of V_2O_5 ; future production at our Maracás Menchen Mine; the results in the Technical Report including resource estimates; expectations regarding any environmental issues that may affect planned or future exploration and development programs and the potential impact of complying with existing and proposed environmental laws and regulations; receipt and timing of third party approvals; government regulation of mineral exploration and development operations in Brazil; expectations regarding any social or local community issues in Brazil that may affect planned or future exploration and development programs; and statements in respect of V_2O_5 demand and supply. These statements and information are only predictions based on current information and knowledge, some of which may be attributed to third party industry sources. Actual future events or results may differ materially. Undue reliance should not be placed on such forward-looking information, as there can be no assurance that the plans, intentions or expectations upon which they are based will occur. By its nature, forward-looking information involves numerous assumptions, known and unknown risks and uncertainties, both general and specific, that contribute to the possibility that the predictions, forecasts, projections and other forward-looking information will not be realized.

The following are some of the assumptions upon which forward-looking information is based: that general business and economic conditions will not change in a material adverse manner; demand for, and stable or improving price of V_2O_5 ; receipt of regulatory and governmental approvals, permits and renewals in a timely manner; that the Company will not experience any material accident, labour dispute or failure of plant or equipment or other material disruption in the Company's operations at the Maracás Menchen Mine; the availability of financing for operations and development; the Company's ability to procure equipment and operating supplies in sufficient quantities and on a timely basis; that planned expansion at the Maracás Menchen

Mine will be completed in budget and in a reasonable timeframe and that the results of such expansion will be sufficient to expand the existing resources consistent with management's expectations; that the estimates of the resources and reserves at the Maracás Menchen Mine are within reasonable bounds of accuracy (including with respect to size, grade and recovery); that the Company's current expansion of development programs and objectives can be achieved; the Company's ability to attract and retain skilled personnel and directors; and the accuracy of the Company's mineral resource estimates (including size, grade and recoverability) and the geological, operational and price assumptions on which these are based.

Actual results could differ materially from those anticipated in this forward-looking information as a result of the risks and uncertainties including, without limitation: volatility in prices of, and demand for, V_2O_5 ; risks inherent in mineral exploration and development; uncertainties associated with estimating mineral resources; uncertainties related to title to the Company's mineral projects; revocation of government approvals; tightening of the credit markets, global economic uncertainty and counterparty risk; failure of plant, equipment or processes to operate as anticipated; unexpected events and delays during construction and development; competition for, among other things, capital and skilled personnel; geological, technical and drilling problems; fluctuations in foreign exchange or interest rates and stock market volatility; rising costs of labour and equipment; risks associated with political and/or economic instability in Brazil; inherent uncertainties involved in the legal dispute resolution process, including in foreign jurisdictions; changes in income tax and other laws of foreign jurisdictions; and other factors discussed under "Risk Factors" in the Company's Annual Information Form for the year ended December 31, 2019 which is filed to the Company's profile on SEDAR at www.sedar.com, and any additional risks as included in "Risks and Uncertainties" above. Assumptions relating to the potential mineralization of the Maracás Menchen Mine are discussed in the Technical Report which is available under the Company's profile on SEDAR.

Additional risks and uncertainties not currently known to the Company, or that the Company currently deems to be immaterial, may also materially and adversely affect the Company's business and prospects. Should one or more of these risks and uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those described in forward-looking information. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. There can be no assurance that forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. The reader is cautioned not to place undue reliance on forward-looking information.

The forward-looking information is presented in this MD&A for the purpose of assisting investors in understanding the Company's plans, objectives and expectations in making an investment decision and may not be appropriate for other purposes. This forward-looking information is expressly qualified in its entirety by this cautionary statement. Forward-looking information contained in this MD&A or documents incorporated herein by reference are made as of the date hereof or the document incorporated herein by reference, as applicable, and are accordingly subject to change after such date. The Company disclaims any obligation to update any such forward-looking information to reflect events or circumstances after the date of such information, or to reflect the occurrence of anticipated or unanticipated events, except as required by law.

The information presented contains "forward-looking statements", within the meaning of the United States Private Securities Litigation Reform Act of 1995, and "forward-looking information" under similar Canadian legislation, concerning the business, operations and financial performance and condition of the Company. Forward-looking statements and forward-looking information include, but are not limited to, statements with respect to the estimation of mineral reserves and mineral resources; the realization of mineral reserve estimates; the timing and amount of estimated future production; costs of production; metal prices and demand for materials; capital expenditures; success of exploration and development activities; permitting time lines and permitting, mining or processing issues; government regulation of mining operations; environmental risks; and title disputes or claims. Generally, forward-looking statements and forward-looking information can be identified by the use of forward-looking terminology such as "plans", "expects" or "does not expect", "is expected", "budget", "guidance", "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will be taken", "occur" or "be achieved". Certain terms appearing in the following table are defined previously in this MD&A. This table contains the material forward-looking statements made by the

Company in this MD&A, the assumptions made by the Company in making those statements and the risk factors associated with those assumptions.

Forward-looking Statements	Assumptions	Risk Factors
<p>The 2019 annual consolidated financial statements were prepared on a going concern basis. The going concern basis assumes that the Company will continue in operation for the foreseeable future and will be able to realize its assets and discharge its liabilities and commitments in the normal course of business.</p>	<p>The Company has assumed that it will be able to continue in operation for the foreseeable future and will be able to discharge its liabilities and commitments in the normal course of business, as it anticipates that it will address working capital and other shortfalls through positive cash flow from operations.</p>	<p>The Company's continuance as a going concern is dependent on its ability to maintain profitable levels of operations.</p> <p>Given the volatility in the market price of V₂O₅ since December 31, 2019, the Company anticipates that it could continue to realize significant re-measurements of trade receivables / payables in future periods until such time as prices stabilize or the off-take agreement ends.</p> <p>The adequacy of the Company's capital structure is assessed on an ongoing basis and adjusted as necessary after taking into consideration the Company's strategy, vanadium prices, economic conditions and associated risks. To maintain or adjust its capital structure, the Company may adjust capital expenditures, issue new common shares or take on new debt. At December 31, 2019, the Company's debt balance was \$nil as a result of the final redemption of Notes as described in note 11. Subsequent to the period, the Company received gross proceeds of \$1,713 from the exercise of 2,707 warrants with an exercise price of \$0.65.</p>
<p>Production volumes are expected to achieve the expanded nameplate capacity of 1,000 tonnes per month during 2020.</p> <p>2020 Production Guidance: 11,750 – 12,250 tonnes</p>	<p>The Company assumes that consistent production levels will continue at a level of or in excess of 1,000 tonnes per month.</p>	<p>The Company prepares future production estimates with respect to existing operations.</p> <p>Actual production and costs may vary from the estimates for a variety of reasons such as estimates of grade, tonnage, dilution and metallurgical and other characteristics of the ore varying from the actual ore mined, revisions to mine plans, risks and hazards associated with mining, adverse weather conditions, unexpected labour shortages or strikes, equipment or design failures and other interruptions in production.</p> <p>Production costs may also be affected by increased mining costs, variations in predicted grades of the deposits, increases in level of ore impurities, labour costs, raw material costs, inflation and fluctuations in currency exchange rates. Failure to achieve production targets or cost estimates could have a material adverse impact on the Company's sales, profitability, cash flow and overall financial performance.</p> <p>In the event that the Company obtains debt financing, repayment terms associated with such financing will likely be based, among other things, on production schedule estimates. Any failure to meet such timelines or to produce amounts forecast may</p>

Forward-looking Statements	Assumptions	Risk Factors
<p>2020 Costs Guidance: Cash operating costs US\$3.05 – 3.25</p> <p>Total cash costs¹ US\$3.45 – 3.65</p>	<p>The Company assumes that its current estimation of future operating costs is accurate, as it is largely based on the current cost profile of operations at the Maracás Menchen Mine.</p>	<p>constitute defaults under such debt financing, which could result in the Company having to repay loans.</p> <p>Capital and operating cost estimates made by management with respect to future projects, or current operations in the early stages of production are estimates which are in turn based, among other things, on interpretation of geological data, feasibility studies, anticipated climactic conditions and other information.</p> <p>Any or all of the above could affect the accuracy of the estimates including unanticipated changes in grade and tonnage to be mined and processed; incorrect data on which engineering assumptions are made; unanticipated transportation costs; accuracy of equipment and construction cost estimates; difficulty or failure to meet scheduled construction completion dates, facility or equipment commissioning dates, or metal production dates; poor or unsatisfactory construction quality resulting in failure to meet completion, commissioning or production dates; increased expenditures required as a failure to meet completion, commissioning or production dates; capital overrun related to the completion of any construction phase including capital overrun associated with demobilization of construction workers and contractors; labour negotiations; unanticipated costs relating to the commencement of operations, ramp up and production sustainment; changes in government regulation (including regulations regarding prices, cost of consumables, royalties, duties, taxes, permitting and restrictions on production quotas or exportation of the Company's products; and change in commodity input costs and quantities).</p>
<p>Sustaining capital expenditures of approximately \$11,500 to \$14,500 are expected to be required in 2020 to sustain current operational capacity (excluding capitalized waste stripping costs). In addition, the Company anticipates that capital expenditures in 2020 for its ferrovandium conversion plant will be in the range of approximately \$6,500 to \$9,500.</p>	<p>Management assumes that its current estimation of capital expenditures is accurate, as based on operational estimates produced and current experience with operations.</p>	<p>Capital and operating costs estimates made by management with respect to future projects, or current operations in production, or not yet in the production phase are estimates which are in turn based, among other things, on interpretation of geological data, feasibility studies, anticipated climactic conditions and other information.</p> <p>Any or all of these can affect the accuracy of the estimates including unanticipated changes in grade and tonnage to be mined and processed; incorrect data on which engineering assumptions are made; unanticipated transportation costs; accuracy of equipment and construction cost estimates; difficulty or failure to meet scheduled construction completion dates, facility or equipment commissioning dates, or metal production dates; poor or unsatisfactory</p>

¹ The total cash costs reported are on a non-GAAP basis. Refer to the details on page 9 of this MD&A.

Forward-looking Statements	Assumptions	Risk Factors
		<p>construction quality resulting in failure to meet completion, commissioning or production dates; increased expenditures required as a failure to meet completion, commissioning or production dates; capital overrun related to the completion of any construction phase including capital overrun associated with demobilization of construction workers and contractors; labour negotiations; unanticipated costs relating to the commencement of operations, ramp up and production sustainment; changes in government regulation (including regulations regarding prices, cost of consumables, royalties, duties, taxes, permitting and restrictions on production quotas or exportation of the Company's products; and change in commodity input costs and quantities).</p>

Forward-looking statements and forward looking information are based on the opinions and estimates of management as of the date such statements are made, and they are subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking statements or forward looking information, including, but not limited to, unexpected events during operations; variations in ore grade; risks inherent in the mining industry; delay or failure to receive board approvals; timing and availability of external financing on acceptable terms; risks relating to international operations; actual results of exploration activities; conclusions of economic valuations; changes in project parameters as plans continue to be refined; and fluctuating metal prices and currency exchange rates.

Although management of the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking statements or forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements and forward-looking information. The Company does not undertake to update any forward-looking statements or forward-looking information that are incorporated by reference herein, except in accordance with applicable securities laws.

Investors are advised that National Instrument 43-101 of the Canadian Securities Administrators ("NI 43-101") requires that each category of mineral reserves and mineral resources be reported separately. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

Cautionary Note to U.S. Investors Concerning Estimates of Measured, Indicated or Inferred Resources

This MD&A uses the terms "measured", "indicated" and "inferred" mineral resources. United States investors are advised that while such terms are recognized and required by Canadian regulations, the United States Securities and Exchange Commission does not recognize them. Inferred mineral resources have a great amount of uncertainty as to their existence, and as to their economic and legal feasibility. It cannot be assumed that all or any part of an inferred mineral resource will ever be upgraded to a higher category. Under Canadian rules, estimates of inferred mineral resources may not form the basis of feasibility or other economic studies. United States investors are cautioned not to assume that all or any part of measured or indicated mineral resources will ever be converted into mineral reserves. United States investors are also cautioned not to assume that all or any part of an inferred mineral resource exists or is economically or legally mineable.