

PCA CASE N° 2016-39/AA641

**ARBITRATION UNDER THE RULES OF ARBITRATION OF THE
UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE
LAW**

GLENCORE FINANCE (BERMUDA) LTD

Claimant

-v-

PLURINATIONAL STATE OF BOLIVIA

Respondent

CLAIMANT'S REPLY ON QUANTUM



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GLOSSARY

Term	Definition
<i>2004 Feasibility Study</i>	Feasibility study concluded in 2004
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
<i>Antimony Smelter</i>	Vinto antimony smelter
<i>Antimony Smelter Nationalization Decree</i>	Supreme Decree No 499, 1 May 2010
<i>Assets</i>	Collectively, the Tin Smelter, the Antimony Smelter and the rights in the Colquiri Lease
<i>CAPEX</i>	Capital expenditures
<i>Claimant / Glencore Bermuda</i>	Glencore Finance (Bermuda) Ltd
<i>Colquiri</i>	Compañía Minera Colquiri SA
<i>Colquiri Lease</i>	Lease agreement for the Colquiri Mine between the Trade Ministry, Comibol, Colquiri and Comsur, 27 April 2000
<i>Colquiri Mine</i>	The Colquiri mine
<i>Colquiri Mine Nationalization Decree</i>	Supreme Decree No 1,264, 20 June 2012
<i>Colquiri Union</i>	Sindicato Mixto de Trabajadores Mineros de Colquiri
<i>Comibol</i>	State-owned Corporación Minera de Bolivia
<i>Comsur</i>	Compañía Minera del Sur SA
<i>Concentrator Plant</i>	The concentrator plant of the Colquiri Mine
<i>Cooperativa 21 de Diciembre</i>	Cooperativa Minera 21 de Diciembre Ltda
<i>Cooperativa 26 de Febrero</i>	Cooperativa Minera 26 de Febrero Ltda
<i>Econ One / Quadrant</i>	Econ One Research, Inc
<i>EMV</i>	State-owned Empresa Metalúrgica Vinto
<i>EV</i>	Enterprise Value
<i>FET</i>	Fair and equitable treatment

Term	Definition
<i>First Expert Report of Compass Lexecon</i>	First expert report of Compass Lexecon, 15 August 2017
<i>FMV</i>	Fair market value
<i>FPS</i>	Full protection and security
<i>G&A</i>	General and administrative
<i>Glencore</i>	Together, Glencore plc, Glencore International, Glencore Bermuda and its local subsidiaries
<i>Glencore International</i>	Glencore International AG
<i>Hearing</i>	The hearing on jurisdiction and the merits
<i>ILC</i>	International Law Commission
<i>INE</i>	Bolivia's National Institute for Statistics (Instituto Nacional de Estadísticas del Estado Plurinacional de Bolivia)
<i>Investments</i>	Glencore Bermuda's investments in the Colquiri Mine, Antimony Smelter and Vinto
<i>JORC Code</i>	Australasian Code for Reporting of Exploitation Results, Mineral Resources and Ore Reserves
<i>Main Ramp</i>	Principal access ramp under construction in the Colquiri Mine, to connect the surface to the -405 level
<i>March 2012 Plan</i>	Quadrant's investment plan, March 2012
<i>Ministry of Mining</i>	Ministry of Mining and Metallurgy of Bolivia
<i>MROR</i>	Mineral Resources and Ore Reserves
<i>OPEX</i>	Operating expenditures
<i>Pincock Report</i>	Independent technical review of the Tailings Project prepared in 2004 by international mining consultant Pincock Allen Holt
<i>Rejoinder on the Merits</i>	Bolivia's Reply on Preliminary Objections and Rejoinder on the Merits, 24 October 2018
<i>Reply on the Merits</i>	Claimant's Reply on the Merits and Counter-Memorial on Jurisdictional Objections, 22 June 2018
<i>Respondent / Bolivia</i>	Plurinational State of Bolivia

Term	Definition
<i>Rosario Agreement</i>	Minute of agreement entered into by Colquiri, Fedecomín La Paz, Fencomin, Cencomincol, Cooperativa 26 de Febrero, Cooperativa Minera Collpa Cota, Cooperativa Minera Socavon Inca and the Ministry of Mining, 7 June 2012
<i>RPA</i>	Roscoe Postle Associates Inc
<i>Sinchi Wayra</i>	Sinchi Wayra SA
<i>SRK</i>	SRK Consulting, Inc
<i>Statement of Claim</i>	Claimant's Statement of Claim, 15 August 2017
<i>Statement of Defense</i>	Bolivia's Preliminary Objections, Statement of Defence, and Reply on Bifurcation, 18 December 2017
<i>Tailings Plant</i>	Plant to exploit the old tailings of the Colquiri Mine
<i>Tin Smelter</i>	Vinto tin smelter
<i>Tin Smelter Nationalization Decree</i>	Supreme Decree No 29,026, 9 February 2007
<i>Tin Stock</i>	161 tonnes of tin concentrates belonging to Colquiri stored at the Antimony Smelter
<i>Treaty</i>	Agreement for the Promotion and Protection of Investments between the United Kingdom of Great Britain and Northern Ireland and Bolivia, 16 February 1990
<i>Triennial Plan</i>	Three-year plan, July 2011
<i>VALMIN Code</i>	Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets
<i>Vinto</i>	Complejo Metalúrgico Vinto SA
<i>WACC</i>	Weighted Average Cost of Capital

1. This Reply on Quantum is submitted on behalf of Glencore Finance (Bermuda) Ltd (*Claimant* or *Glencore Bermuda*), pursuant to the Tribunal's Procedural Order No 7 dated 29 July 2019. In this Reply, Claimant responds to the quantum arguments advanced by the Plurinational State of Bolivia (*Respondent* or *Bolivia*) in its prior submissions in this arbitration, including the Preliminary Objections, Statement of Defence, and Reply on Bifurcation dated 18 December 2017 (*Statement of Defense*). Pursuant to Procedural Order No 6, Claimant also addresses the [REDACTED] documents produced by Claimant on 24 June 2019, as supplemented on 26 August 2019.
2. Accompanying this Reply on Quantum are: (i) the Third Witness Statement of Mr Christopher Eskdale, Head of Zinc and Lead Industrial Assets for Glencore International; (ii) the Third Witness Statement of Mr Eduardo Lazcano, former General Manager of the Colquiri Mine for Sinchi Wayra; (iii) the Second Expert Report on damages prepared by Mr Manuel Abdala and Ms Carla Chavich of the economic consulting firm Compass Lexecon; (iv) the Second Expert Report prepared by Messrs Graham Clow and Richard Lambert, mining experts of the firm Roscoe Postle Associates Inc (*RPA*); and (v) the Second Expert Report prepared by Ms Gina Russo, real estate valuation expert in Bolivia. Also submitted with this Reply on Quantum are Claimant's new factual exhibits numbered **C-307** to **C-336**, and legal authorities numbered **CLA-253** to **CLA-257**.

I. EXECUTIVE SUMMARY

3. Glencore Bermuda initiated this arbitration in order to obtain full reparation for the loss of its investments in Compañía Minera Colquiri SA (*Colquiri*) and Complejo Metalúrgico Vinto SA (*Vinto*) due to Bolivia's conduct in breach of the Treaty.
4. Glencore Bermuda's investments consisted of a 100 percent (%) indirect shareholding in Colquiri, which owned (i) the exclusive right to explore, exploit,

and market the mineral products from the Colquiri mine (the *Colquiri Mine*), the second largest tin mine in Bolivia, under a lease agreement (the *Colquiri Lease*), (ii) a non-producing antimony smelter (the *Antimony Smelter*) and (iii) 161 tonnes of tin concentrates that were stored at the Antimony Smelter on the day of its taking (the *Tin Stock*); and a 100% indirect shareholding in Vinto, which owned (iv) the largest tin smelter in Bolivia (the *Tin Smelter*; collectively, the *Investments*).

5. As Glencore Bermuda established in its prior submissions and at the hearing on jurisdiction and the merits (the *Hearing*), Bolivia's conduct deprived Glencore Bermuda of the entirety of its Investments and amounted to the unlawful expropriations of those Investments under Article 5 of the Treaty, and breaches of the full protection and security (*FPS*), observance of undertakings, and fair and equitable treatment (*FET*) standards in Article 2 of the Treaty.
6. The issue now before the Tribunal is the amount of damages that Bolivia owes to fully compensate Glencore Bermuda for the loss of its Investments. After years of negotiating the amount of compensation it owes Glencore Bermuda, Bolivia has not paid even a cent of compensation. For the following reasons, Glencore Bermuda is entitled to an award of damages of at least US\$788 million, which includes pre-award interest calculated as of the date of this Reply on Quantum, plus additional pre- and post-award interest, and the costs of this arbitration.
7. *First*, customary international law governs the standard of compensation owed by Bolivia in this case. It is well-settled that the international law standard of compensation is "full reparation" of the damages suffered by Glencore Bermuda as a result of Bolivia's violations of the Treaty. To achieve full reparation, damages must include the fair market values (*FMVs*) of Glencore Bermuda's Investments as of the appropriate valuation dates, and pre- and post-award interest on those values.

8. *Second*, in application of the full reparation principle, the FMVs of Glencore Bermuda's Investments should be calculated as of the day before Bolivia's unlawful conduct permanently deprived Glencore Bermuda of the Investments, except in the case of the Antimony Smelter, which has appreciated in value since it was taken and, as a result, should be valued as of the date of the Tribunal's award. For Colquiri, the appropriate valuation date is 29 May 2012—the day before Bolivia's wrongful conduct caused Glencore Bermuda to lose control of the Colquiri Mine to the *cooperativistas*. The correct valuation dates for Vinto and the Tin Stock are the days before Bolivia unlawfully seized those assets—8 February 2007 and 30 April 2010, respectively. Applying any other valuation dates would undervalue the Investments and thereby deprive Glencore Bermuda of full reparation for its losses and allow Bolivia to profit from its breaches of the Treaty.

9. *Third*, Glencore Bermuda's valuation expert, Compass Lexecon, calculates the FMV of each of the Investments based on well-established valuation methodologies (Bolivia's valuation expert applies the same methodologies) and substantial evidence. The evidence that Compass Lexecon relies on includes contemporaneous documents, historical data, the witness statements of Messrs Eskdale and Lazcano, and the reports of mining industry expert RPA and real estate valuation expert Ms Russo. This evidence proves, among other things, that:
 - (a) *Colquiri*: The Colquiri Mine was the second largest tin mine in Bolivia and a major source of zinc. It had been operating for decades and was located on a large mineral deposit. When Bolivia deprived Glencore Bermuda of its investment in the Colquiri Mine on 30 May 2012, Colquiri was profitable and was expanding its output capacity in order to take advantage of then rising mineral prices and to commercialize Colquiri's large mineral deposit. Colquiri was increasing its output pursuant to (i) a three-year plan dated July 2011 (the *Triennial Plan*) to expand its capacity to mine tin and zinc ore (*ie*, rocks containing a mix of minerals and non-

mineral material) and convert that ore into tin and zinc concentrate, and (ii) a feasibility study concluded in 2004 (the *2004 Feasibility Study*) to construct a new facility (the *Tailings Plant*) to reprocess tin and zinc contained in the large volume of tailings (mining byproduct) that Colquiri had created over decades of operations and convert that ore into tin and zinc concentrates. But-for Bolivia's unlawful conduct, Glencore Bermuda would have succeeded in implementing these expansion plans and would have continued its operations until at least the end of the Colquiri Lease in 2030.

- (b) **Vinto:** Vinto had been operating for over 30 years, was the only commercial tin smelter in Bolivia and one of only a handful of producers of high-grade tin in the world. When Bolivia seized the Tin Smelter on 9 February 2007, it was profitable and Vinto was in the process of optimizing the Tin Smelter's operations in order to increase the efficiency and output of the Tin Smelter's existing infrastructure. Vinto was increasing its output in order to take advantage of then increasing tin prices and to handle the planned increase in tin concentrate production at Colquiri. Like Colquiri, but-for Bolivia's unlawful conduct, Vinto would have succeeded in implementing its plans to increase the Tin Smelter's output.
- (c) **Antimony Smelter:** The Antimony Smelter was not operating when Bolivia seized it on 1 May 2010, and it had not operated since before the 2000s. Since 2010, however, the city outside of which the Smelter is located—the city of Oruro—has grown and the value of properties located near the city, including industrial properties like the Antimony Smelter, have increased in value, making the land on which the Antimony Smelter is located more valuable today than when Bolivia seized it.

- (d) ***Tin Stock***: On 1 May 2010, when Bolivia seized the Tin Stock, it consisted of 161 tonnes of commercial grade tin concentrate that, but-for Bolivia’s conduct, Glencore Bermuda would have sold at market prices.
10. Bolivia and its valuation expert, Quadrant, try but fail to discredit Compass Lexecon’s calculations of the Investments’ FMVs and the highly probative evidence on which those calculations are based. Quadrant relies on unreasonably high discount rates (22.1% for Colquiri and 28.5% for Vinto) that are in no way commensurate with rates typically applied by investment treaty tribunals, and it cherry-picks data and documents and cites unsupported statements of individuals who did not work at the Investments at the times of the takings. In contrast, Compass Lexecon relies on the testimony of witnesses who managed the Investments for Glencore Bermuda and contemporaneous data and documents such as the Triennial Plan and the 2004 Feasibility Study—the types of documents on which mining companies, investors and arbitral tribunals rely to assess future profits. Moreover, the evidentiary record shows that (i) prior to its wrongful conduct, Bolivia expected the output of Colquiri and Vinto to increase; (ii) Glencore Bermuda’s plans to achieve this increased output were not complex; and (iii) post-expropriation, the State has increased the output of both assets, much as Glencore Bermuda intended.
11. *Fourth*, Glencore Bermuda is entitled to pre and post-award interest at a rate that is at least as high as the interest rate that the Treaty requires under Article 5 for lawful expropriations—*ie*, interest at a “normal commercial” rate *applicable in Bolivia*, compounded annually. Consistent with prior awards under the Treaty, Compass Lexecon proposes interest rates published by the Central Bank of Bolivia as the rates required by the Treaty. The risk-free and US LIBOR rates proposed by Bolivia in this arbitration were rejected in the prior arbitrations under the Treaty and should be rejected again here because they do not even meet the minimum amount of interest required by the Treaty for lawful expropriations and,

in violation of the international law principle of full reparation, would not fully compensate Glencore Bermuda for its losses.

12. *Finally*, Bolivia’s two affirmative defenses to Claimant’s damages should be rejected. Bolivia cannot prove that Glencore Bermuda contributed to its losses in relation to Colquiri or Vinto. The facts are incontrovertible—the entirety of Glencore Bermuda’s damages in relation to those Investments were caused by Bolivia’s failure to protect the Colquiri Mine and subsequent taking of Glencore Bermuda’s rights under the Colquiri Lease, and Bolivia’s expropriation of the Vinto Tin Smelter. Likewise, there is no basis for Bolivia’s assertion that the damages it owes Glencore Bermuda for the expropriation of Vinto should be reduced because [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

* * *

13. The remainder of this Reply on Quantum is structured as follows: **Section II** sets out the law applicable to Glencore Bermuda’s damages claim; **Section III** describes the calculation of Glencore Bermuda’s damages, and the valuation dates and well-established valuation methodologies that Claimant’s expert, Compass Lexecon, applied to calculate those damages; **Section IV** explains why Glencore Bermuda is entitled to its claim of interest on the damages it suffered; **Section V** describes Claimant’s uncontested claim for a damages award net of any and all taxes; **Section VI** rebuts Bolivia’s meritless assertions that Glencore Bermuda’s damages claim should be reduced due to alleged contributory fault and [REDACTED]

[REDACTED]

██████████; and **Section VII** sets out Glencore Bermuda’s Request for Relief.

II. GLENCORE BERMUDA IS ENTITLED TO FULL REPARATION FOR THE LOSSES IT SUFFERED DUE TO BOLIVIA’S BREACHES OF THE TREATY

A. CUSTOMARY INTERNATIONAL LAW APPLIES AND REQUIRES FULL REPARATION FOR GLENCORE BERMUDA’S LOSSES

14. As Glencore Bermuda explained in its Statement of Claim, where a State breaches the Treaty—as Bolivia has done here—customary international law governs the standard of compensation owed by the State to the investor.¹ It is firmly established that the international law standard of compensation is “full reparation” of the losses suffered by the investor as a result of the State’s breaches.² This standard was described in the judgment of the Permanent Court of International Justice in the seminal *Chorzów Factory* case, and codified in the International Law Commission’s Articles on State Responsibility.³

15. “Full reparation” means that “reparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed.”⁴ When, as here, the State’s wrongful conduct has deprived claimant of the entirety of its investment, full reparation must include the FMV of the claimant’s entire investment⁵ and any

¹ Statement of Claim, paras 229-230.

² *Ibid*, paras 231-236.

³ International Law Commission, “Draft articles on Responsibility of States for Internationally Wrongful Acts with commentary” [2001-II(2)] Yearbook of the International Law Commission, 2001, **CLA-30**, Art 31, Commentary 1; *Case Concerning the Factory at Chorzów (Germany/Poland)* (Merits) [1928] PCIJ Series A, No 17, 1928, **CLA-2**, p 46.

⁴ *Case Concerning the Factory at Chorzów (Germany/Poland)* (Merits) [1928] PCIJ Series A, No 17, 1928, **CLA-2**, p 46.

⁵ Statement of Claim, paras 237-241; Statement of Defense, paras 693-694; *see also* J Crawford, *The International Law Commission’s Articles on State Responsibility* (1st edn 2002), **CLA-171bis**, p 14 (stating that “[c]ompensation reflecting the capital value of property taken or destroyed as the result of an internationally wrongful act is generally assessed on the basis of the ‘fair market value’ of the property lost.”); World Bank Group, “Guidelines on the Treatment of

other compensation needed to reinstate the investor to the financial situation it would be in had the unlawful act not been committed.⁶ To make the investor “whole,” arbitrators have the discretion to apply any and all available means, including: (i) pushing back the date of valuation from the date of seizure to the date of the award, to ensure that the investor rather than the State benefits from any increase in the FMV of the expropriated asset(s); (ii) awarding compound interest on damages; and (iii) awarding interest at a rate reflecting the investor’s opportunity cost (*ie*, its cost of equity or rate of return).⁷

Foreign Direct Investment” (1992) Vol 7(2) ICSID Review–Foreign Investment Law Journal 297, **CLA-17**, p 10, Articles IV(3)-(4); CN Brower and JD Brueschke, *The Iran-United States Claims Tribunal* (1st edn 1998), **CLA-22**, p 3 (stating that “market price is the most reliable indicator of the actual value of an asset at a determined date”); *Compañía del Desarrollo de Santa Elena SA v Republic of Costa Rica* (ICSID Case No ARB/96/1) Final Award, 17 February 2000, **CLA-25**, paras 69-70; *Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, paras 8.2.9-8.2.11; *Sempra Energy International v Argentine Republic* (ICSID Case No ARB/02/16) Award, 28 September 2007, **CLA-71**, para 404; *ADC Affiliate Limited and ADC & ADMC Management Limited v Republic of Hungary* (ICSID Case No ARB/03/16) Award of the Tribunal, 2 October 2006, **CLA-64**, para 499.

⁶ See *Gold Reserve Inc v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/09/1) Award, 22 September 2014, **CLA-123**, para 681; *Azurix Corp v Argentine Republic* (ICSID Case No ARB/01/12) Award, 14 July 2006, **CLA-63**, paras 423-424, 438; *Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, para 8.2.7; *Ioan Micula and others v Romania* (ICSID Case No ARB/05/20) Award, 11 December 2013, **CLA-119**, para 917.

⁷ Statement of Claim, para 236; see, eg, *ConocoPhillips Petrozuata BV and others v Bolivarian Republic of Venezuela* (ICSID Case No ARB/07/30) Decision on Jurisdiction and the Merits, 3 September 2013, **CLA-117**, paras 342-343 (holding that the principle of full reparation required using the date of award as the date of valuation); *ADC Affiliate Limited and ADC & ADMC Management Limited v Republic of Hungary* (ICSID Case No ARB/03/16) Award of the Tribunal, 2 October 2006, **CLA-64**, paras 496-497 (holding that the principle of full reparation required using the date of award as the date of valuation); *Siemens AG v Argentine Republic* (ICSID Case No ARB/02/8) Award, 6 February 2007, **CLA-67**, para 352 (“Under customary international law, Siemens is entitled not just to the value of its enterprise as of May 18, 2001, the date of expropriation, but also to any greater value that enterprise has gained up to the date of this Award, plus any consequential damages.”); *Quiborax SA and Non Metallic Minerals SA v Plurinational State of Bolivia* (ICSID Case No ARB/06/2) Award, 16 September 2015, **CLA-127**, para 523 (“The applicable standard of compensation under customary international law is full reparation. Compound interest, which has become the standard to remunerate the use of money in modern finance, comes closer to achieving this purpose than simple interest. Indeed, being deprived of the use of the money to which it was entitled, a creditor may have to borrow funds or may forego investments, for which it would pay or earn compound interest.”); *Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, para 8.2.5, 9.2.3-9.2.8 (awarding compound interest at a rate that the

16. In this case, Glencore Bermuda does not seek damages other than the FMVs of its Investments, pre- and post-award interest in accordance with the Treaty standard, and the costs of this arbitration. However, to make Glencore Bermuda “whole,” the Tribunal should exercise its discretion to calculate the FMVs of the Investments as of dates other than the dates on which Bolivia’s unlawful conduct permanently deprived Glencore Bermuda of the Investments if—as is the case with the Antimony Smelter—a valuation as of another date would result in a higher FMV for the Investment. The correct valuation dates for the Investments are addressed in Section III.A.1.a, below. The Tribunal should also allow for annually compounded pre- and post-award interest, as further detailed in Section IV.B below.
17. Bolivia does not dispute that international law requires full reparation. It instead objects to the application of customary international law in this case. Bolivia argues that, even if the Tribunal concludes that the State unlawfully expropriated Glencore Bermuda’s Investments (as it did), the Tribunal should apply the standard of compensation for lawful expropriations stated in Article 5 of the Treaty (except as to the determination of the applicable interest rate).⁸ Article 5 provides for “just and effective compensation [...] amount[ing] to the market value of the investment expropriated immediately before the expropriation or before the impending expropriation became public knowledge, whichever is the earlier.”⁹
18. By invoking the Treaty’s standard of compensation for lawful expropriations, Bolivia seeks to limit its liability for Glencore Bermuda’s damages to the FMVs of the Investments as of the dates “immediately before” Bolivia formally issued decrees expropriating each of them, and thereby bar the Tribunal from awarding

tribunal considered to be a “reasonable proxy for the return Claimants could otherwise have earned on the amounts invested and lost in the [relevant] concession”).

⁸ Statement of Defense, paras 692, 719-720.

⁹ Treaty, C-1, Art 5(1).

any additional damages that would result from the application of other valuation dates.¹⁰ Bolivia's reliance on Article 5 of the Treaty is inappropriate and should be rejected as explained in the following paragraphs.

19. *First*, Bolivia's position is contrary to the plain text of the Treaty. As the first sentence of Article 5(1) makes clear, Article 5 specifies the steps necessary to render an expropriation lawful, which include the payment of "just and effective compensation" reflecting the FMV of the expropriated investment.¹¹ The second sentence defines what constitutes "just and effective compensation" for these purposes.¹² Nowhere does Article 5 address the compensation that is owed by a Contracting Party that breaches Article 5 or any other provision of the Treaty.¹³
20. *Second*, Bolivia's position is contrary to the arbitral jurisprudence. It was rejected, for example, by the tribunal in *Quiborax v Bolivia*, which held that "Article VI(2) of the [Chile-Bolivia] BIT sets out the standard of compensation for lawful expropriations [...]. [That standard] does not apply to unlawful expropriations, which are governed by the full reparation principle [...]. Article VI(2) does not purport to establish a *lex specialis* for unlawful expropriations."¹⁴ Numerous other tribunals and commentators have reached the same conclusion that the treaty standard of compensation for lawful expropriation does not govern compensation for breaches of the treaty.¹⁵

¹⁰ Statement of Defense, Section 7.3.2.

¹¹ Treaty, **C-1**, Art 5(1).

¹² *Ibid.*

¹³ *Ibid.* See also Statement of Claim, para 229.

¹⁴ *Quiborax SA and Non Metallic Minerals SA v Plurinational State of Bolivia* (ICSID Case No ARB/06/2) Award, 16 September 2015, **CLA-127**, para 326.

¹⁵ *Burlington Resources, Inc v Republic of Ecuador* (ICSID Case No ARB/08/5) Decision on Reconsideration and Award, 7 February 2017, **CLA-134**, para 160; see also *Crystallex International Corporation v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/11/2) Award, 4 April 2016, **CLA-130**, para 846; *ADC Affiliate Limited and ADC & ADMC Management Limited v Republic of Hungary* (ICSID Case No ARB/03/16) Award of the Tribunal, 2 October 2006, **CLA-64**, paras 481, 483; *Amoco International Finance Corporation v Government of the Islamic Republic of Iran and others*, Partial Award (1987-Volume 15) Iran-US

21. *Third*, Bolivia mischaracterizes the legal authorities on which it relies. Bolivia cites six arbitral awards and one commentary that purportedly support its position that the compensation standard in Article 5 applies in cases of unlawful expropriation.¹⁶ Bolivia’s reliance on these authorities is misplaced. The award in *CME v Czech Republic* supports Claimant’s, not Bolivia’s, position. It determined that treaty violations require the application of the full reparation standard, which may require more than the minimal standard of compensation set by the applicable treaty in cases of lawful expropriation.¹⁷ The tribunals in *Wena Hotels v Egypt*, *Flughafen v Venezuela*, *Tecmed v Mexico* and *Abengoa v Mexico* did not decide the question of whether international law or treaty terms govern the quantification of damages arising from illegal expropriations.¹⁸ The award in

Claims Tribunal Report, 14 July 1987, **CLA-10**, paras 189, 191-93; *Nykomb Synergetics Technology Holding AB v Republic of Latvia* (SCC) Arbitral Award, 16 December 2003, **CLA-46**, Section 5.1; *Gemplus SA and others v United Mexican States, and Talsud SA v United Mexican States* (ICSID Case Nos ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, **CLA-98**, paras 12.1-12.3, 12.53; *Monsieur Joseph Houben v Republic of Burundi* (ICSID Case No ARB/13/7) Award, 12 January 2016, **CLA-256**, paras 218-219; *Bernhard von Pezold and others v Republic of Zimbabwe* (ICSID Case No ARB/10/15) Award, 28 July 2015, **CLA-126**, paras 758-763; *Caratube International Oil Company LLP and Mr. Devincci Salah Hourani v. Republic of Kazakhstan*, ICSID Case No. ARB/13/3, Award, 27 September 2017, **RLA-98**, paras 1065-1069; *Amoco International Finance Corporation v Government of the Islamic Republic of Iran and others*, Partial Award (1987-Volume 15) Iran-US Claims Tribunal Report, 14 July 1987, **CLA-10**, para 189; M Sornarajah, *The International Law on Foreign Investment* (3rd edn 2010), **CLA-93**, pp 3-4.

¹⁶ Statement of Defense, paras 719-720.

¹⁷ *CME Czech Republic BV v Czech Republic* (UNCITRAL) Partial Award, 13 September 2001, **CLA-32**, para 615 (stating that “[t]he Respondent, as a consequence of the breach of the Treaty, [was] under an obligation to make full reparation for the injury caused by [the] wrongful acts and omissions” and clarifying, after quoting the expropriation provision of the applicable treaty which required “just compensation,” that “[a] fortiori unlawful measures of deprivation must be remedied by just compensation.”). See also *ibid*, paras 616-618 (“In respect to the Claimant’s remaining [*ie*, non-expropriation] claims, this principle [the full reparation principle] derives also from the generally accepted rules of international law,” as expressed in the *Chorzów Factory* case and the International Law Commission’s Articles on State Responsibility, and as “accepted and applied by numerous arbitral awards.”).

¹⁸ *Wena Hotels Ltd. v. Arab Republic of Egypt*, ICSID Case No. ARB/98/4, Award, 8 December 2000, **RLA-68**, paras 118-130 (neither deciding whether the expropriation at issue was lawful or unlawful, nor whether the customary standard of full reparation should apply, because the parties agreed that compensation in that case would be determined by reference to the standard articulated in the expropriation provision of the applicable treaty); *Flughafen Zürich A.G. and Gestión e Ingeniería IDC S.A. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/10/19, Award, 18 November 2014, **RLA-107**, paras 739-747 (finding that in practice, the customary international law principle of full reparation and the two applicable treaties all required the payment of

British Caribbean Bank v Belize and Audley Sheppard’s commentary reflect a minority position that does not reflect the position adopted in recent arbitral jurisprudence.¹⁹

22. *Finally*, Bolivia does not assert that the compensation standard provided in Article 5 of the Treaty is applicable for the purposes of determining the quantum of damages owed as a result of Bolivia’s breaches of the Treaty’s FPS obligations, umbrella clause, and/or FET standard. It is therefore undisputed that international law’s full reparation standard applies to determine the quantum of damages that Bolivia owes to Glencore Bermuda as a result of its breaches of those Treaty provisions.
23. In sum, whether the legal basis for Bolivia’s liability is unlawful expropriation under Article 5 or the failure to afford Claimant’s Investments the protections of Article 2 of the Treaty, the Tribunal should apply international law and its well-established full reparation standard to calculate the damages owed to Glencore Bermuda. Under the full reparation principle, the relief that Glencore Bermuda seeks in this arbitration—*ie*, the FMVs of the Investments (calculated as of the dates specified in Section III.A.1.b and III.A.2, below) plus compound interest at a normal commercial rate in Bolivia and the costs of this arbitration—represents the floor for damages, the minimum compensation to which Glencore Bermuda is entitled to ensure the full reparation of its injury.

compensation equivalent to the fair market value of the relevant investments); *Abengoa, S.A. and COFIDES, S.A. v. United Mexican States*, ICSID Case No. ARB(AF)/09/2, Award, 18 April 2013, **RLA-66**, paras 623, 681, 694 (source of the standard of compensation applied by the tribunal was not in dispute); *Técnicas Medioambientales Tecmed SA v United Mexican States* (ICSID Case No ARB(AF)/00/2) Award, 29 May 2003, **CLA-43**, paras 149, 187-192 (same).

¹⁹ See *British Caribbean Bank Ltd. v. Belize*, PCA Case No. 2010-18, Award, 19 December 2014, **RLA-105**, para 260; A. Sheppard, “The distinction between lawful and unlawful expropriation” in *Investment Arbitration and the Energy Charter Treaty*, JurisNet LLC, 2006, **RLA-64**, pp 28-29.

B. GLENCORE BERMUDA HAS MET THE BURDEN AND STANDARD OF PROOF, AND ESTABLISHED THAT BOLIVIA CAUSED THE DAMAGES SUFFERED

1. Each Party bears the burden of proving the facts on which it relies

24. Glencore Bermuda accepts that it bears the burden of proving the damage that it has suffered as a result of Bolivia's wrongful conduct. By the same token, Bolivia bears the burden of proving all facts underlying its defenses to Glencore Bermuda's claim for compensation.²⁰ As a commentary on which Bolivia itself relies²¹ states, "the burden of proof will rest with the respondent if the latter asserts facts (or, in procedural terms, raises a defense) implying full or partial rejection of the claim for compensation."²² Bolivia has simply ignored that it has this burden. This is not surprising. As demonstrated in Sections III-VI below, while Glencore Bermuda has provided ample proof of its damages, both in its earlier pleadings and in this Reply on Quantum, Bolivia has utterly failed to meet its burden of proving its defenses to Glencore Bermuda's damages.

2. The applicable standard of proof is the balance of probabilities

25. The standard of proof is not seriously disputed in this case. The Parties agree that the standard of proof does not entail "establishing with 100% certainty the *exact amount* of damages claimed."²³ As tribunals have emphasized, "the fact that damages cannot be fixed with certainty is no reason not to award damages when a

²⁰ *Técnicas Medioambientales Tecmed SA v United Mexican States* (ICSID Case No ARB(AF)/00/2) Award, 29 May 2003, **CLA-43**, para 190; S. Ripinsky and K. Williams, *Damages in International Investment Law*, British Institute of International and Comparative Law, 2008, **RLA-89**, p 7.

²¹ Statement of Defense, para 619.

²² S. Ripinsky and K. Williams, *Damages in International Investment Law*, British Institute of International and Comparative Law, 2008, **RLA-89**, p 7; *see also Bear Creek Mining Corporation v Republic of Peru* (ICSID Case No ARB/14/2) Award, 30 November 2017, **CLA-229**, paras 410-411; *Abengoa, S.A. and COFIDES, S.A. v. United Mexican States*, ICSID Case No. ARB(AF)/09/2, Award, 18 April 2013, **RLA-66**, paras 670-671; *Anatolie Stati, Gabriel Stati, Ascom Group S.A. and Terra Raf Trans Trading Ltd v. The Republic of Kazakhstan*, SCC Case No. V116/2010, Award, 19 December 2013, **RLA-96**, para 1332.

²³ Statement of Defense, para 622 (emphasis in original).

loss has been incurred. In such cases, approximations are inevitable; the settling of damages is not an exact science.”²⁴

26. Instead, the standard of proof is a “balance of probabilities.”²⁵ In the damages context, this standard has been defined to mean that the evidence of damages “is enough for the judge to be able to admit with *sufficient probability* the existence and extent of the damage.”²⁶ Proving the amount of damages “is not therefore an exercise in certainty, as such, but [...] an exercise in ‘sufficient certainty’.”²⁷ As a result, a respondent State cannot “invoke the burden of proof as to the amount of compensation for such loss to the extent that it would compound the respondent’s wrongs and unfairly defeat the claimant’s claim for compensation.”²⁸

²⁴ *Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, para 8.3.16; *see also Gold Reserve Inc v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/09/1) Award, 22 September 2014, **CLA-123**, paras 685-686; *Crystallex International Corporation v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/11/2) Award, 4 April 2016, **CLA-130**, paras 865-876; *South American Silver Limited (Bermuda) v The Plurinational State of Bolivia* (PCA Case No 2013-15) Award, Dissenting Opinion, and Separate Opinion, 22 November 2018, **CLA-252**, paras 824-825; *BG Group Plc. v. The Republic of Argentina*, UNCITRAL, Final Award, 24 April 2007, **RLA-100**, para 428.

²⁵ *Ioannis Kardassopoulos and Ron Fuchs v Republic of Georgia* (ICSID Case Nos ARB/05/18 and ARB/07/15) Award, 3 March 2010, **CLA-96**, para 229; *Impregilo SpA v Argentine Republic* (ICSID Case No ARB/07/17) Award, 21 June 2011, **CLA-105**, para 371. In the case of future profits, *see Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, para 8.3.10.

²⁶ *Sapphire International Petroleum Ltd v National Iranian Oil Company*, Arbitral Award, 15 March 1963, **CLA-5**, p 27 (emphasis added); *see also Southern Pacific Properties (Middle East) Limited v Arab Republic of Egypt* (ICSID Case No ARB/84/3) Award on the Merits, 20 May 1992, **CLA-18**, para 215 (“It is well settled that the fact that damages cannot be settled with certainty is no reason not to award damages when a loss has been incurred.”).

²⁷ *Gemplus SA and others v United Mexican States, and Talsud SA v United Mexican States* (ICSID Case Nos ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, **CLA-98**, para 13-91; *see also Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, para 8.3.4; International Law Commission, “Draft articles on Responsibility of States for Internationally Wrongful Acts with commentary” [2001-II(2)] Yearbook of the International Law Commission, 2001, **CLA-30**, Art 36, Commentary 27; UNIDROIT Principles of International Commercial Contracts (2010), **RLA-91**, Art 7.4.3.

²⁸ *Gemplus SA and others v United Mexican States, and Talsud SA v United Mexican States* (ICSID Case Nos ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, **CLA-98**, paras 13-92.

27. Yet, Bolivia argues that the “standard of proof rules out compensation for future projects that have no record of profits.”²⁹ As an example of such a project, Bolivia refers to Colquiri’s planned Tailings Plant.³⁰ However, Bolivia’s position that such projects cannot give rise to damages for lost profits is wrong. The only requirement is that “*future profitability* can be established (*the fact of profitability* as opposed to the *amount*) with some level of certainty.”³¹ As demonstrated in Section III.A.1 of this Reply on Quantum, Glencore Bermuda has provided more than ample evidence of the future profits of the Tailings Plant and Colquiri as a whole—profits that Glencore Bermuda lost as a result of Bolivia’s breaches of the Treaty.

3. Glencore Bermuda has proven that Bolivia’s Treaty breaches were the proximate cause of Claimant’s losses

28. Bolivia does not deny that its Treaty breaches were the proximate cause of Glencore Bermuda’s losses with respect to three of the four Investments—the Vinto Tin Smelter, the Antimony Smelter and the Tin Stock. With regard to Colquiri, however, Bolivia asserts that its unlawful conduct was not the “dominant” cause of Glencore Bermuda’s losses, because Glencore Bermuda purportedly “mismanaged” social conflicts at the Mine and thereby “forced” Bolivia to expropriate Colquiri.³² Bolivia’s allegations are indefensible.

29. To establish proximate cause, Glencore Bermuda need only show that its loss of Colquiri was the objectively foreseeable outcome of Bolivia’s expropriation of the Colquiri Lease.³³ In cases like this one, where Bolivia admits that it seized

²⁹ Statement of Defense, para 618.

³⁰ *Ibid*, paras 624-625.

³¹ *Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, para 8.3.3 (emphasis in the original); *see also Crystallex International Corporation v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/11/2) Award, 4 April 2016, **CLA-130**, para 868.

³² Statement of Defense, para 682.

³³ *Burlington Resources, Inc v Republic of Ecuador* (ICSID Case No ARB/08/5) Decision on Reconsideration and Award, 7 February 2017, **CLA-134**, para 333; *Joseph Charles Joseph*

Colquiri,³⁴ there is no question that that taking was the proximate cause of the claimant's loss, because the *complete* loss of Claimant's investment is the objectively foreseeable result of the *complete* taking of the investment by the State.³⁵

30. The arbitral awards on which Bolivia relies are inapposite. None of the cases that Bolivia cites involved the expropriation of an investment of any value. To the contrary, in the cases cited by Bolivia, the claimants maintained control over their investments, which continued to have economic value after the relevant States breached the applicable treaties through regulatory action or had lost their economic value before the state's measures. In those cases, the tribunals concluded that the States' regulatory actions were just one of several causes of the investors' losses—the other causes being macroeconomic forces, loss of market share or underperformance on the part of claimant.³⁶ In this case, Bolivia's taking

Charles Lemire v Ukraine (ICSID Case No ARB/06/18) Award, 28 March 2011, **CLA-104**, para 169.

³⁴ See Statement of Defense, paras 222, 444, 495, 682; Rejoinder, para 252; Opening Statement of Respondent, Day 1, Transcript (English) 80:16-18 (Spanish translation at Opening Statement of Respondent, Day 1, Transcript (Spanish) 105:19 – 106:2) (note that Bolivia incorrectly referred to 22 June 2012 (rather than 20 June 2012) in its Opening Statement); Closing Statement of Respondent, Day 4, Transcript (English) 876:24 – 877:7 (Spanish translation at Closing Statement of Respondent, Day 4, Transcript (Spanish) 1132:7-16).

³⁵ *Ioannis Kardassopoulos and Ron Fuchs v Republic of Georgia* (ICSID Case Nos ARB/05/18 and ARB/07/15) Award, 3 March 2010, **CLA-96**, paras 465-469 (finding that the adoption of a governmental decree, which directly and deliberately caused the loss of the investment's rights as well as the loss of the claimants' entire investment in the host State, left no room for questions of remoteness or foreseeability of damage). *Monsieur Joseph Houben v Republic of Burundi* (ICSID Case No ARB/13/7) Award, 12 January 2016, **CLA-256**, para 217 ("The Tribunal has found that the acts and omissions of Burundi in relation to the acts of usurpation constituted both a violation of the full protection and security standard and a direct expropriation. The causal link between these acts and omissions and the loss by Mr Houben of his investment is inherent to the expropriation determination and has been established above.") (unofficial translation from French original).

³⁶ *Biwater Gauff (Tanzania) Ltd v United Republic of Tanzania* (ICSID Case No ARB/05/22) Award, 24 July 2008, **CLA-78**, paras 789, 797-798 (the tribunal concluded that Tanzania had expropriated the claimant's investment but that claimant had not suffered any economic losses as a result of Tanzania's measures given that any economic loss was the consequence of claimant's deficient financial structuring and mismanagement of its investment, all of which had caused that the FMV of the investment was nil even before Tanzania's measures); *Case concerning Elettronica Sicula S.p.A. (ELSI) (United States of America v. Italy)*, ICJ, Judgment, 20 July 1989, **RLA-72**, paras 77-79, 100-101, 119 (the tribunal concluded that the claimant had not suffered any

of Colquiri in its entirety was the sole cause of Glencore Bermuda's losses in relation to Colquiri.

31. Furthermore, Bolivia's allegation that Glencore Bermuda caused its own losses in part by "forcing" Bolivia to take Colquiri has no merit and should be rejected.³⁷ These allegations rest on factual assertions that Bolivia made (and Glencore Bermuda disproved) in relation to its defenses to the Tribunal's jurisdiction and the merits of Glencore Bermuda's claims in relation to Colquiri.³⁸ If the Tribunal has concluded that it has jurisdiction over Claimant's claims for Colquiri and that Bolivia is liable on the merits of those claims, then the Tribunal has previously dismissed these factual allegations, and Bolivia cannot reargue them in its defense

economic loss as a result of Italy's measures because its financial difficulties laid in its own mismanagement, which had resulted in an under-capitalized and consistently loss-making company); *Blusun S.A., Jean-Pierre Lecorcier and Michael Stein v. Italian Republic*, ICSID Case No. ARB/14/3, Award, 27 December 2016, **RLA-102**, paras 387, 394 (the tribunal concluded that Italy's measures had not caused any losses to the claimant, as claimant itself acknowledged that the proximate cause for its losses had been not obtaining substantial and timely project financing before the regulatory actions); *BG Group Plc. v. The Republic of Argentina*, UNCITRAL, Final Award, 24 April 2007, **RLA-100**, paras 269-270, 449-453 (the tribunal concluded that Argentina had not expropriated the claimant's investments; instead, the tribunal found that other treaty breaches by Argentina had diminished the profitability of the claimant's investments rather than destroying their value, where part of the suffered losses were fluctuations proper of Argentina's renowned financial crisis); *S.D. Myers, Inc. v. Government of Canada*, NAFTA-UNCITRAL, Partial Award, 13 November 2000, **RLA-101**, paras 287, 288, 316 (the tribunal concluded that Canada's measures had not deprived the claimant of its property; instead, the tribunal found that Canada's treaty breaches other than expropriation had caused economic harm to claimant's investment and that compensation was due only with respect to the specific loss caused by each specific treaty breach).

³⁷ Statement of Defense, para 682.

³⁸ *Ibid*, paras 312-313, 471-477, 685; Reply on the Merits, paras 165-170, 295-297, 442-454; Rejoinder on the Merits, paras 287-320, 410-420; Rejoinder on Jurisdiction, paras 111-112; Opening Statement of Claimant, Day 1, Transcript (English) 34:1-8, 39:24 – 40:10, 43:15 – 45:10, 55:18 – 60:6 (Spanish translation at Opening Statement of Claimant, Day 1, Transcript (Spanish) 44:21 – 45:8, 53:11 – 54:1, 58:14 – 61:3, 73:20 – 74:10); Opening Statement of Respondent, Day 1, Transcript (English) 97:11-14, 113:5-15 (Spanish translation at Opening Statement of Respondent, Day 1, Transcript (Spanish) 127:15-18, 148:16 – 149:5); Closing Statement of Claimant, Day 4, Transcript (English) 818:8 – 820:15, 828:21 – 829:8, 834:16 – 836:6 (Spanish translation at Closing Statement of Claimant, Day 4, Transcript (Spanish) 1055:22 – 1059:5, 1069:22 – 1070:15, 1077:19 – 1079:22); Closing Statement of Respondent, Day 4, Transcript (English) 841:17-25, 874:9 – 875:6 (Spanish translation at Closing Statement of Respondent, Day 4, Transcript (Spanish) 1086:9-19, 1128:14 – 1129:18).

of quantum.³⁹ Moreover, even if Bolivia could reargue these factual allegations (it cannot), as Glencore Bermuda explains in Section VI.A of this Reply, the evidentiary record in this arbitration has proven that Bolivia’s allegations are false—Glencore Bermuda did not mismanage Colquiri.

32. Finally, it is well-established that even if it were true that Bolivia’s taking of the Mine was intended to maintain public safety (which it was not), Bolivia still must compensate Glencore Bermuda for the value of Colquiri.⁴⁰

* * *

33. Having established the legal framework for its damages claims, Claimant now turns to the quantum of those claims.

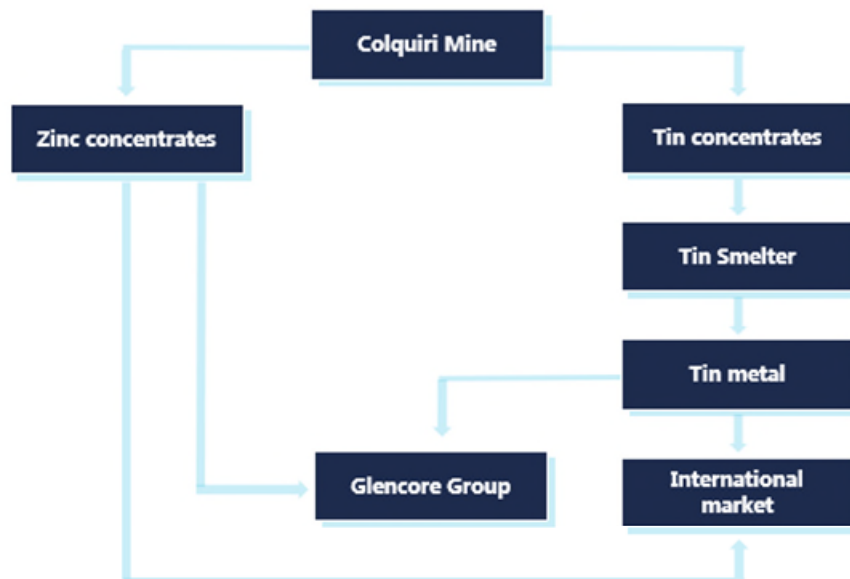
III. GLENCORE BERMUDA IS ENTITLED TO THE FAIR MARKET VALUES OF THE INVESTMENTS

34. Before they were taken from Glencore Bermuda, the Investments operated as complementary businesses. The second largest tin mine in one of the largest tin

³⁹ *CME Czech Republic BV v Czech Republic* (UNCITRAL) Final Award, 14 March 2003, **CLA-42**, paras 414-424; *Occidental Petroleum Corporation and Occidental Exploration and Production Company v Republic of Ecuador* (ICSID Case No ARB/06/11) Award, 5 October 2012, **CLA-254**, paras 291-296; *RREEF Infrastructure (GP) Limited and RREEF Pan-European Infrastructure Two Lux Sàrl v Kingdom of Spain* (ICSID Case No ARB/13/30) Decision on Responsibility and on the Principles of Quantum, 30 November 2018, **CLA-257**, paras 208-209; *CMS Gas Transmission Company v Republic of Argentina* (ICSID Case No ARB/01/8) Award, 12 May 2005, **CLA-57**, para 126.

⁴⁰ As explained in the Reply on the Merits, the tribunal in *Bear Creek v Peru* examined a claim submitted under a treaty that expressly provided for a police power exception “to protect human life” or “ensure compliance with laws,” and it concluded that this exception “does not offer any waiver from the obligation in [the treaty] to compensate for the expropriation.” *Bear Creek Mining Corporation v Republic of Peru* (ICSID Case No ARB/14/2) Award, 30 November 2017, **CLA-229**, para 477 (emphasis added). See Reply on the Merits, paras 347, 349. Similarly, the tribunal in *South American Silver v Bolivia*, held that when, as here, Bolivia’s conduct following an expropriation of an investment is indicative of an obligation on the part of the State to compensate the investor—*ie*, engaging in negotiations to agree the compensation due to Glencore Bermuda—that conduct confirms that Bolivia “understood at all times that it had effected an expropriation and that it owed compensation for it,” regardless of whether the expropriations were a valid exercise of Bolivia’s police powers. *South American Silver Limited (Bermuda) v The Plurinational State of Bolivia* (PCA Case No 2013-15) Award, Dissenting Opinion, and Separate Opinion, 22 November 2018, **CLA-252**, paras 624, 626. See also Opening Statement of Claimant, Day 1, Transcript (English) 34:23 – 35:17 (Spanish translation at Opening Statement of Claimant, Day 1, Transcript (Spanish) 46:6 – 47:10).

producing countries in the world, the Colquiri Mine extracted large volumes of tin and zinc ore and transformed the ore into tin concentrates⁴¹ that it sold directly to Vinto and zinc concentrates that it sold to other entities within the Glencore group (for trading on international markets) and third parties.⁴² Vinto, which operated the Tin Smelter—the largest tin smelter in Bolivia and one of a handful of high-grade tin producers in the world—would convert tin concentrate through the smelting process into tin metal.⁴³ The Antimony Smelter, which was adjacent to the Tin Smelter, did not operate and occasionally served as a location where Colquiri could store tin concentrate (as it did with the Tin Stock) prior to its shipment to the Tin Smelter or other buyers. Thus, Glencore Bermuda’s operations in Bolivia covered the entire productive chain from extraction to trading, as illustrated below:⁴⁴



⁴¹ The raw ore is ground finely in small particles and waste is removed, thus concentrating the metal component existing in the ore.

⁴² Statement of Claim, para 49.

⁴³ *Ibid*, paras 4, 43; First Witness Statement of Christopher Eskdale, paras 32-33.

⁴⁴ See Statement of Claim, para 60.

35. Before their expropriation by Bolivia, Claimant's operations of the Colquiri Mine and the Vinto Tin Smelter used traditional mining and smelting techniques, which Glencore optimized. The Colquiri Mine consists of: (i) an underground mineral deposit containing tin ore and zinc ore (as well as other minerals that are not economically feasible to extract, such as silver); (ii) a concentrator plant (**Concentrator Plant**) that processed ore into tin and zinc concentrates; (iii) tailings storage facilities (ie, dams) to deposit tailings resulting from the Concentrator Plant's operations; and (iv) ancillary facilities such as maintenance shops, warehouses and offices.⁴⁵
36. The Colquiri Mine's operations involve extracting raw ore from underground to the Mine's surface and processing it in the Mine's Concentrator Plant. In the Concentrator Plant, the ore is first ground in the Plant and then processed to separate minerals and non-mineral materials.⁴⁶ Tin and zinc concentrates are produced from the minerals. Colquiri generated profits by selling the tin and zinc concentrates it produced for a price higher than what it cost it to extract ore from the Mine and process the ore to produce those concentrates.
37. The leftover material that results from the concentrating process is referred to as tailings, which are stored in tailings storage facilities.⁴⁷ Because the concentrating process has become more efficient over time as technology has improved, it is now possible to re-process older tailings that still contain valuable minerals. Colquiri has been depositing tailings in its tailings storage facilities since 1948, accumulating a large quantity of valuable minerals.⁴⁸ Reprocessing tailings is almost free of mining costs and is technically simple as compared to extracting

⁴⁵ Third Witness Statement of Christopher Eskdale, para 13; Third Witness Statement of Eduardo Lazcano, paras 8-11.

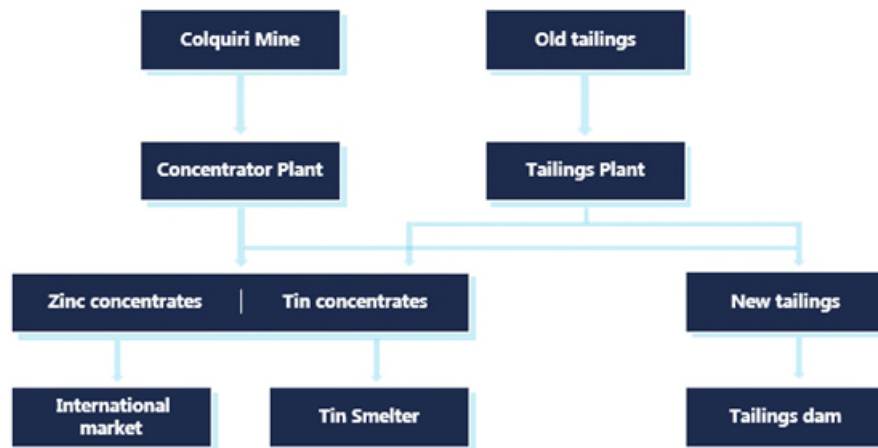
⁴⁶ Third Witness Statement of Christopher Eskdale, para 14; Third Witness Statement of Eduardo Lazcano, para 9.

⁴⁷ Third Witness Statement of Eduardo Lazcano, para 11.

⁴⁸ Second Expert Report of RPA, para 118. *See also* Third Witness Statement of Eduardo Lazcano, para 11.

new ore, because the tailings are easily accessible in a tailings storage facility and have previously been ground and processed.⁴⁹

38. When Glencore Bermuda lost control of Colquiri on 30 May 2012, it was beginning to expand the Mine’s production. The expansion was intended to allow Glencore Bermuda to take advantage of then high mineral prices and to commercialize the large quantity of minerals present in the Mine and the old tailings.⁵⁰ Glencore Bermuda’s expansion plans were four-fold: (i) expanding Colquiri’s capacity to extract ore from the Mine; (ii) expanding the capacity of the existing Concentrator Plant to process additional ore; (iii) building a new concentrator plant to reprocess the minerals retained in the Mine’s old tailings (*Tailings Plant*); and (iv) expanding its tailings storage facilities.⁵¹
39. The following diagram illustrates the Colquiri Mine’s operations had Glencore Bermuda had the opportunity to complete its expansion plans:



40. The Vinto Tin Smelter’s operations consisted of purchasing tin concentrates from concentrate producers and traders, such as Colquiri, and smelting and extracting

⁴⁹ Third Witness Statement of Christopher Eskdale, para 15; Third Witness Statement of Eduardo Lazcano, para 61.

⁵⁰ See Third Witness Statement of Christopher Eskdale, paras 39, 47; Third Witness Statement of Eduardo Lazcano, paras 64-65.

⁵¹ *Ibid*, para 16.

high-grade tin from those tin concentrates to produce tin metal in the form of tin ingots.⁵² Put simply, a tin smelter heats tin concentrates to high temperatures inside furnaces⁵³ until they melt and separate from other materials contained in the concentrate. The resulting commercial product is a tin ingot, which has a variety of applications, including in relation to electronics, food products and home appliances.⁵⁴ Vinto generated profits by selling tin ingots at a price higher than what it cost it to purchase the tin concentrates and convert the concentrates into tin metal.⁵⁵

41. When Bolivia seized Vinto on 9 February 2007, Glencore Bermuda was in the process of increasing the output of the Smelter by optimizing the operation of its existing smelting furnaces.⁵⁶ The optimization process involved standard measures designed to allow the Tin Smelter to receive and process tin concentrate in a more efficient manner.⁵⁷ Glencore Bermuda was motivated to increase the Smelter's output in order to take advantage of then rising tin prices and to handle the increased amounts of tin concentrate that it expected to produce at Colquiri.
42. The following diagram illustrates Vinto's operations up to the date it was seized:

⁵² First Witness Statement of Christopher Eskdale, paras 32-34. *See also* Glencore interoffice report from Mr Vix to Mr Eskdale, 21 November 2004, **C-310**, pp 1, 4-6.

⁵³ *See* First Witness Statement of Christopher Eskdale, para 33.

⁵⁴ *Ibid*, para 33.

⁵⁵ Third Witness Statement of Christopher Eskdale, para 26.

⁵⁶ *Ibid*, paras 54-55, 57, 67.

⁵⁷ *Ibid*, para 30; Second Expert Report of RPA, para 233.



43. In its Statement of Claim, Glencore Bermuda presented its expert, Compass Lexecon’s calculations of the FMVs of its Investments (*First Expert Report of Compass Lexecon*) as of 15 August 2017.⁵⁸ In its Second Expert Report, Compass Lexecon updates its valuation of the Investments (excluding interest) to US\$440 million as of 22 January 2020.⁵⁹ Compass Lexecon’s valuations of the Investments correctly account for the profits that Glencore Bermuda would have received from the Investments had Bolivia’s unlawful conduct not prevented Glencore Bermuda from completing its plans to increase the output of Colquiri and Vinto. Compass Lexecon’s valuations are supported by substantial evidence that comfortably meets the standard of proof under international law.⁶⁰ That evidence includes the First and Second Expert Reports of Claimant’s mining and real estate valuation experts, RPA and Ms Russo, respectively; the witness statements of Messrs Eskdale and Lazcano; and the large volume of contemporaneous documents and other exhibits in the record of this arbitration.
44. Bolivia’s expert, Econ One Research, Inc (now Quadrant Economics, LLC or *Quadrant*), would have the Tribunal believe that Investments were worth only

⁵⁸ See Statement of Claim, paras 17, 226; First Expert Report of Compass Lexecon, para 6, Table 1.

⁵⁹ *Ibid*, paras 19, Table 1, 131, 145, Table 13.

⁶⁰ See Section II.B.2.

about US\$52.4 million.⁶¹ The primary difference between Compass Lexecon's valuation of the Investments and Quadrant's valuation is that, contrary to the weight of the evidence in the record, Quadrant assumes that Glencore Bermuda would not have increased output at Colquiri and Vinto. But as the evidence shows, the Investments were profitable while Glencore Bermuda owned them,⁶² Glencore Bermuda had begun to implement its plans to increase output before

⁶¹ Expert Report of Quadrant, para 10, Table 1. Bolivia also asserts that there is a "gross mismatch" between Compass Lexecon's valuation of the Investments and the price that Glencore Bermuda paid to purchase them. Statement of Defense, para 15. Bolivia's assertion leads nowhere. Glencore Bermuda's purchase price has no bearing on the price a willing buyer would pay for those investments several years later under different assumptions regarding the Investments' prospects for future profits. In addition, Bolivia's statement is based on a misunderstanding of the amount that Glencore Bermuda paid for the Investments. Quadrant suggest that Glencore Bermuda acquired all of the Investments for a total of US\$9.9 million. Expert Report of Quadrant, paras 16-17. Glencore Bermuda in fact paid over US\$145 million in consideration for the Investments in March 2005. Second Amended and Restated Stock Purchase Agreement between Minera and Glencore International (Iris shares), 30 January 2005, **C-198**, p 49; Stock Purchase Agreement between CDC and Compañía Minera Concepción SA (Colquiri shares), 2 March 2005, **C-202**, p 44.

⁶² See, Reply on the Merits, paras 84-87, 109, 356, 368; Third Witness Statement of Christopher Eskdale, para 59; First Witness Statement of Christopher Eskdale, paras 35-37; Second Witness Statement of Christopher Eskdale, para 39; Opening Statement of Claimant, Day 1, Transcript (English) 22:13-19 ("As to the Colquiri Mine specifically, it was doing very well. You can see on Slide 20 the Mine had benefited from record metal prices in 2011; and, to take advantage of those prices, the Mine was producing at 96 percent of its capacity. Given this positive outlook, it had also started to implement further expansion plans at the Mine.") (Spanish translation at Opening Statement of Claimant, Day 1, Transcript (Spanish) 29:4-11); Closing Statement of Claimant, Day 4, Transcript (English) 830:5-12 ("Indeed, [REDACTED], the extraction and production at the Mine increased substantially reached [*sic*], by the end of 2011, nearly full production capacity. [...] This, coupled with tin prices that were increasing, resulted in substantial increase of the profits of the Mine. You can see the profits increased between 2010 and 2011 by 152% [...]") (Spanish translation at Closing Statement of Claimant, Day 4, Transcript (Spanish) 1071:18 – 1072:5); Direct Examination of Mr C Eskdale, Day 1, Transcript (English) 139:17-24 ("And I think from a financial point of view, it was making healthy money for us. We made a valuation when we bought the Assets, and the Smelter was making several million dollars of profit a year in the short time that we owned it--I think even if I remember--if I see here, this Report [COMIBOL, Report on the reversion of the Complejo Metalúrgico Vinto to the Bolivian State, 29 January 2007, **R-247**, p 4] even talks about the Smelter making \$7 million profit a year, which is pretty much what it was doing within our ownership, so that was a healthy business [...]") (Spanish translation at Direct Examination of Mr C Eskdale, Day 1, Transcript (Spanish) 181:12-20), 140:22 – 141:5 ("[Colquiri] was a mine that was producing more profits on its own than any of the other mines within the Sinchi Wayra group. [...] [T]hat was a jewel in the Crown of the Sinchi Wayra business, for us.") (Spanish translation at Direct Examination of Mr C Eskdale, Day 1, Transcript (Spanish) 182:15 – 186:1), 141:13-14 ("The [Colquiri] Mine was making a lot of money for us. Great potential.").

Bolivia intervened and, but-for Bolivia's Treaty breaches, Glencore Bermuda would have fully implemented those plans.

45. It was this profitability and the potential of the Investments that motivated Bolivia to seize them for its own benefit.⁶³ For example, on 29 January 2007—just ten days before nationalizing Vinto—Comibol prepared a report that stated that if it took over the operation of the Tin Smelter, it could generate a profit of US\$7.1 million annually.⁶⁴ Moreover, Bolivia has continued to operate the Colquiri Mine and Vinto Tin Smelter post-nationalization and even increased their production, much as Glencore Bermuda had planned to do, demonstrating the high value of the Investments.
46. In this section of its Reply on Quantum, Glencore Bermuda responds to the criticism of its damages case made by Bolivia and its valuation, mining and real estate experts—Quadrant, SRK Consulting, Inc (*SRK*) and Mr Diego Mirones, respectively. Claimant also addresses the issues raised with respect to damages by [REDACTED] Messrs Ramiro Villavicencio and [REDACTED] [REDACTED].

⁶³ See Opening Statement of Claimant, Day 1, Transcript (English) 14:13-24, 22:13-19, 32:17 – 33:5 (Spanish translation at Opening Statement of Claimant, Day 1, Transcript (Spanish) 19:15 – 20:5, 29:4-11, 42:19 – 43:17); Closing Statement of Claimant, Day 4, Transcript (English) 826:21 – 827:21, 830:5-16 (Spanish translation at Closing Statement of Claimant, Day 4, Transcript (Spanish) 1067:4 – 1068:13, 1071:18 – 1072:10).

⁶⁴ COMIBOL, Report on the reversion of the Complejo Metalúrgico Vinto to the Bolivian State, 29 January 2007, **R-247**, p 4; Direct Examination of Mr C Eskdale, Day 1, Transcript (English) 139:17-24 (“And I think from a financial point of view, [the Tin Smelter] was making healthy money for us. We made a valuation when we bought the Assets, and the Smelter was making several million dollars of profit a year in the short time that we owned it—I think even if I remember—if I see here, this Report [COMIBOL, Report on the reversion of the Complejo Metalúrgico Vinto to the Bolivian State, 29 January 2007, **R-247**, p 4] even talks about the Smelter making \$7 million profit a year, which is pretty much what it was doing within our ownership, so that was a healthy business [...]”) (Spanish translation at Direct Examination of Mr C Eskdale, Day 1, Transcript (Spanish) 181:12-20). See also Third Witness Statement of Christopher Eskdale, para 59; Vinto Financial Statement, 2006-2007, **CLEX-16-8**, p 9 (demonstrating a net profit of BS\$81,442,984, or approximately US\$10 million at an exchange rate of BS\$8 for each US\$1).

47. To narrow the issues in dispute between the Parties and assist the Tribunal in reaching its decision, Claimant's experts, Compass Lexecon, RPA and Ms Russo, have adjusted their analyses and models wherever possible to accommodate those views held by Bolivia's experts that can reasonably be attributed to divergences within the literature and practice of their respective fields.⁶⁵ As a result, Compass Lexecon calculates the FMVs of the Investments (before interest is applied) as follows: (i) US\$381.1 million for Colquiri, calculated as of 29 May 2012;⁶⁶ (ii) US\$56 million for Vinto, calculated as of 8 February 2007;⁶⁷ (iii) US\$1.9 million for the Antimony Smelter, calculated as of 22 January 2020;⁶⁸ and (iv) US\$0.6 million for the Tin Stock, calculated as of 30 April 2010.⁶⁹ The following table summarizes the revised calculation of the Investments' FMVs as calculated by Compass Lexecon:

⁶⁵ For example, Compass Lexecon adjusted its valuation of Colquiri to exclude cash flows generated between 1 January and 30 May 2012, and its valuation of Vinto to exclude cash flows generated between 1 January and 8 February 2007—*ie*, to exclude cash flows generated prior to the dates of valuation for Colquiri and Vinto. Second Expert Report of Compass Lexecon, para 10. Similarly, RPA adjusted its projections for the Tailings Plant to allow for grade variability in the tailings, and it increased its capital forecasts for the combined operation of the Tailings Plant and the Colquiri Mine by US\$5.9 million to provide additional capital to expand the existing tailings storage facilities and to build a new facility. Second Expert Report of RPA, paras 20(d)(ii), 180, 186. Likewise, Ms Russo adjusted her valuation of the Antimony Smelter by adopting the valuation of the Antimony Smelter's buildings prepared by Mr Mirones as of 2010 and adjusting it to the proper date of valuation. Second Expert Report of Gina Russo, para 1.3(b), Table 8, para 5.6.

⁶⁶ Second Expert Report of Compass Lexecon, para 134, Table 9. Compass Lexecon has also calculated the value of Colquiri at Claimant's alternative valuation date of 4 June 2012 and, all things being equal, the impact in the valuation is minimal. *See ibid*, Footnote 6.

⁶⁷ *Ibid*, para 139, Table 10.

⁶⁸ *Ibid*, para 143, Table 11.

⁶⁹ *Ibid*, para 144, Table 12.

<i>US\$ Million</i>	Colquiri	Vinto	Antimony Smelter	Tin Stock	Total
Abdala-Chavich	<i>May 29, 2012</i>	<i>February 8, 2007</i>	<i>January 22, 2020</i>	<i>April 30, 2010</i>	
Fair Market Value	435.5	63.9	2.2	0.7	
- Remittance Tax	54.4	8.0	0.3	0.1	
Damages to Claimant (as of Date of Valuation)	381.1	56.0	1.9	0.6	
+ Interest	231.6	106.5	0.0	0.5	
Damages to Claimant (as of January 22, 2020)	612.7	162.4	1.9	1.1	778.1

Source: Compass Lexecon Updated Colquiri Valuation (CLEX-040); Compass Lexecon Updated Vinto Valuation (CLEX-041); Compass Lexecon Tin Stock Valuation (CLEX-003); Russo First Report; Russo Second Report; Compass Lexecon Interest Calculation (CLEX-042).

48. Compass Lexecon's FMV calculations are reasonable for the reasons given in the following paragraphs.

A. THE FAIR MARKET VALUE OF COLQUIRI AND VINTO

1. The fair market value of Colquiri

49. In its Second Expert Report, Claimant's expert, Compass Lexecon, calculates the FMV of Colquiri as of 29 May 2012 to be US\$381.1 million using a DCF model.⁷⁰ Because Glencore Bermuda held 100% of the equity in Colquiri, its FMV represents the value that Glencore Bermuda lost due to Bolivia's unlawful conduct in relation to Colquiri.⁷¹

50. The Parties agree that the DCF methodology is the appropriate method by which to calculate Colquiri's FMV except with regard to the future profits of the Tailings Plant.⁷² The Parties also agree that Compass Lexecon has identified the correct variables in its DCF model.⁷³ The Parties disagree, however, as to the

⁷⁰ *Ibid*, paras 4, 134, Table 9.

⁷¹ Statement of Claim, para 256.

⁷² Statement of Defense, para 736.

⁷³ *See* Expert Report of Quadrant, paras 96, 99.

values of several of the variables and the resulting FMV.⁷⁴ The Parties' key differences relate to: (i) the inclusion of the lost future profits from the Tailings Plant in the Colquiri DCF valuation; (ii) the valuation date;⁷⁵ (iii) production volume of tin and zinc concentrate;⁷⁶ (iv) CAPEX;⁷⁷ (v) OPEX;⁷⁸ (vi) G&A costs;⁷⁹ and (vii) the discount rate.⁸⁰ The following subsections address the first six topics; the appropriate discount rates for Colquiri and Vinto are addressed in a dedicated Section III.A.1.d.3, below. With regard to the other variables of the Colquiri DCF, we respectfully refer the Tribunal to Compass Lexecon's Second Expert Report.⁸¹

a. DCF is the correct methodology to calculate the fair market value of Colquiri

51. Subject to one caveat, the Parties agree that the most appropriate method to determine the FMV of Colquiri is the DCF method.⁸² Favored in both international finance and international law,⁸³ the DCF method projects the future profits that an investment would have generated in the absence of wrongful government conduct and then discounts those cash flows back to the valuation

⁷⁴ Statement of Defense, paras 630, 736, 774; Expert Report of Quadrant, para 35.

⁷⁵ Statement of Defense, para 702.

⁷⁶ *Ibid*, paras 624, 796, 825-831.

⁷⁷ *Ibid*, paras 815-818.

⁷⁸ *Ibid*, paras 819-821.

⁷⁹ *Ibid*, para 876.

⁸⁰ *Ibid*, paras 840-842.

⁸¹ Second Expert Report of Compass Lexecon, Section II.1.5. This includes a discussion of Bolivia's unsupported criticism of Compass Lexecon's projected working capital and sale prices, which Bolivia's own valuation expert, Quadrant, adopts in its DCF calculation (*see* Statement of Defense, paras 812-813; Expert Report of Quadrant, paras 55-65, 89-91) and lease payments, royalties and taxes applicable to Colquiri (*see* Second Expert Report of Compass Lexecon, para 58; Expert Report of Quadrant, paras 78-88).

⁸² Statement of Defense, para 736.

⁸³ Statement of Claim, paras 244-249; Statement of Defense, para 736. *See also Case Concerning the Factory at Chorzów (Germany/Poland)* (Merits) [1928] PCIJ Series A, No 17, 1928, **CLA-2**, pp 50-51; *Phillips Petroleum Company Iran v Islamic Republic of Iran and the National Iranian Oil Company*, Award (1989-Volume 21) Iran-US Claims Tribunal Report, 29 June 1989, **CLA-12**, para 111.

date at a rate that accounts for the risk associated with obtaining those profits.⁸⁴ In doing so, the DCF method establishes the price that a willing buyer would have paid to a willing seller for the valued asset on that date, “in circumstances in which each had good information, each desired to maximize his financial gain, and neither was under duress or threat.”⁸⁵

52. The one caveat to the Parties’ agreement that Colquiri should be valued pursuant to the DCF method is that Bolivia’s valuation expert, Quadrant, states that one component of Colquiri’s operations—the planned Tailings Plant—should not be included in the Colquiri DCF valuation.⁸⁶ Quadrant asserts that it should be excluded from the Colquiri DCF, because when the State took Colquiri, the Tailings Plant had not yet been constructed and therefore Colquiri did not have financial results specific to the Tailings Plant.⁸⁷ Bolivia’s position is incorrect as a matter of economics, mining industry practices and the arbitral jurisprudence.
53. As Claimant’s valuation expert, Compass Lexecon, explains, a non-operating asset may be valued pursuant to the DCF method when, as is the case for the Tailings Plant, there is sufficient information regarding the asset to forecast lost profits.⁸⁸ Likewise, arbitral tribunals recognize that non-operating assets, including non-operating mining assets, can be valued pursuant to the DCF method

⁸⁴ World Bank Group, “Guidelines on the Treatment of Foreign Direct Investment” (1992) Vol 7(2) ICSID Review–Foreign Investment Law Journal 297, **CLA-17**, p 11. As submitted in the Statement of Claim, the DCF methodology is appropriate to calculate Glencore Bermuda’s investments in Colquiri and Vinto, whereas an asset-based methodology is appropriate to calculate Glencore Bermuda’s investment in the Antimony Smelter and Tin Stock. Statement of Claim, paras 244-251.

⁸⁵ *Starrett Housing Corporation and others v Government of the Islamic Republic of Iran*, Final Award (1987-Volume 16) Iran-US Claims Tribunal Report, 14 August 1987, **CLA-11**, para 277. See also Statement of Claim, paras 239, 244-249; *Rumeli Telekom AS and Telsim Mobil Telekomikasyon Hizmetleri AS v Republic of Kazakhstan* (ICSID Case No ARB/05/16) Award, 29 July 2008, **CLA-79**, paras 809-811; *Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, para 8.3.3.

⁸⁶ Statement of Defense, paras 624, 729, 736, 827. Quadrant does not propose an alternative method for valuing the Colquiri Tailings Plant.

⁸⁷ *Ibid*, paras 624, 729, 736, 827.

⁸⁸ Second Expert Report of Compass Lexecon, Footnote 5.

and other similar methods for calculating lost profits when, as here, it is reasonably certain that but-for the State's wrongful conduct the asset could have brought its goods to an established market and made a profit from their sale.⁸⁹

54. With regard to mining assets that are not yet operational, tribunals have held that it is reasonably certain that an asset would generate future profits where (as here), prior to the States' breaches, the asset had completed a study, such as a feasibility study, that demonstrated that the asset "ha[d] completed the exploration phase, the size of the deposits ha[d] been established, the value can be determined based on market prices, and the costs are well known in the industry and can be estimated with a sufficient degree of certainty."⁹⁰ For example, the tribunal in *Gold Reserve v Venezuela* applied the DCF methodology to assess the value of a non-producing mining concession on the basis of a feasibility study that the investor had completed prior to the State's breaches.⁹¹ The *Gold Reserve* tribunal held:

Although the Brisas Project [*ie*, the expropriated mine] was never a functioning mine and therefore did not have a history of cashflow which would lend itself to the DCF model, the Tribunal accepts the explanation of both [the experts] that a DCF method can be reliably used in the instant case because of the commodity nature

⁸⁹ Statement of Claim, paras 244, 248. See also *Gold Reserve Inc v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/09/1) Award, 22 September 2014, **CLA-123**, para 830; *Quiborax SA and Non Metallic Minerals SA v Plurinational State of Bolivia* (ICSID Case No ARB/06/2) Award, 16 September 2015, **CLA-127**, para 347; *Phillips Petroleum Company Iran v Islamic Republic of Iran and the National Iranian Oil Company*, Award (1989-Volume 21) Iran-US Claims Tribunal Report, 29 June 1989, **CLA-12**, para 111; *Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, paras 8.3.3-8.3.4; *Rumeli Telekom AS and Telsim Mobil Telekomikasyon Hizmetleri AS v Republic of Kazakhstan* (ICSID Case No ARB/05/16) Award, 29 July 2008, **CLA-79**, paras 809-811.

⁹⁰ *Crystallex International Corporation v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/11/2) Award, 4 April 2016, **CLA-130**, paras 877, 880, 882 (making these observations in the context of holding that forward-looking methodologies that calculate lost profits were appropriate to determine the value of a mining venture that had completed a feasibility study and was expropriated before it became operational).

⁹¹ *Gold Reserve Inc v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/09/1) Award, 22 September 2014, **CLA-123**, paras 14, 18, 25-28.

of the product and detailed mining cashflow analysis previously performed.⁹²

55. The cases Bolivia cites are consistent with this approach.⁹³ The use of the DCF method to value non-operating assets also is consistent with mining industry practices. For example, the Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets (the *VALMIN Code*) recommends applying income-based valuation approaches—such as the DCF method—to “development” projects like the Tailings Plant “for which a decision has been made to proceed with construction or production [...] but which [is] not yet commissioned or operating at design levels.”⁹⁴
56. Based on these standards, the future profits of the Tailings Plant were reasonably certain and plainly should be valued pursuant to the DCF that Compass Lexecon has prepared for Colquiri. As in *Gold Reserve*, Colquiri has completed a feasibility study for the Tailing Plant—the 2004 Feasibility Study—that, as described below, was reviewed and approved by an independent mining consultant, as well as Glencore Bermuda both in relation to its due diligence prior to acquiring Colquiri and again after the acquisition.⁹⁵ Further, as Glencore Bermuda’s mining expert, RPA, explains, the 2004 Feasibility Study provides substantial details regarding how Colquiri intended to process approximately 10

⁹² *Ibid*, para 830 (emphasis added).

⁹³ In one of the cases cited by Bolivia, *Murphy*, the tribunal used the DCF method (albeit labeling it a “fair market value methodology”), based on the asset’s “ability to generate future economic benefits.” *Murphy Exploration and Production Company International v. Republic of Ecuador [III]*, PCA Case No. 2012-16, Partial Final Award, 6 May 2016, **RLA-99**, para 486. The tribunals in the other three cases cited by Bolivia—*Al-Bahloul*, *Caratube* and *Micula*—did not reject the application of the DCF method to value non-operating assets; they simply found that, on the facts of those cases, the claimants had not provided sufficient proof of the future profitability of the relevant projects to warrant the use of the DCF method. *Mohammad Ammar Al-Bahloul vs. Republic of Tajikistan*, SCC Arbitration No. V(064/2008), Final Award, 8 June 2010, **RLA-97**, paras 74-77; *Caratube International Oil Company LLP and Mr. Devinci Salah Hourani v. Republic of Kazakhstan*, ICSID Case No. ARB/13/3, Award, 27 September 2017, **RLA-98**, paras 1097-1098; *Ioan Micula and others v Romania* (ICSID Case No ARB/05/20) Award, 11 December 2013, **CLA-119**, paras 1065-1111.

⁹⁴ The VALMIN Code - Australasian Code For Public Reporting of Technical Assessments and Valuations of Mineral Assets, 2015, **R-260**, Section 14.

⁹⁵ See Section IV.A.1.b.3.

million tonnes of mineral-rich tailings and create tin and zinc concentrates that it would sell to Vinto and the buyers in the international market.⁹⁶ Compass Lexecon therefore is correct to include the lost future profits of the Tailings Plant in its DCF model for Colquiri.

b. The fair market value of Colquiri should be calculated as of 29 May 2012, and in any event, no later than 4 June 2012

57. Under either the full reparation principle, which governs the quantification of damages in this arbitration, or under the Treaty's compensation standard for legal expropriations, which Bolivia relies on, the valuation date must pre-date Bolivia's wrongful conduct.⁹⁷ On this basis, the appropriate valuation date for Colquiri is 29 May 2012 (the day before Bolivia's failure to protect Glencore Bermuda's investment enabled the *cooperativistas*' invasion and takeover of the Mine) or, at the very latest, 4 June 2012 (the day before Bolivia publicly announced the impending nationalization of the Mine, which is the latest possible valuation date under the Treaty).⁹⁸
58. In its Statement of Defense, Bolivia contends that the FMV of Colquiri should be assessed on 19 June 2012, because that is the day before the Government issued the 20 June 2012 Supreme Decree No 1,264 (*Colquiri Mine Nationalization*

⁹⁶ Second Expert Report of RPA, para 120.

⁹⁷ Statement of Claim, paras 252-255; *Ioannis Kardassopoulos and Ron Fuchs v Republic of Georgia* (ICSID Case Nos ARB/05/18 and ARB/07/15) Award, 3 March 2010, **CLA-96**, para 517; *SAUR International v Argentine Republic* (ICSID Case No ARB/04/4) Award, 22 May 2014, **CLA-255**, paras 168-169 (the Tribunal must ensure that "acts that do not constitute, as such, an expropriation, but that have the effect of diminishing the value of the investment, are not disregarded for purposes of compensation. To this end, it is necessary to bring the date of valuation back [...] to a time pre-dating the expropriation, to a date at which the criterion of 'normal economic situation' is met.") (unofficial translation from Spanish original). *See also Compañía del Desarrollo de Santa Elena SA v Republic of Costa Rica* (ICSID Case No ARB/96/1) Final Award, 17 February 2000, **CLA-25**, para 77 ("There is ample authority for the proposition that a property has been expropriated when the effect of the measures taken by the state has been to deprive the owner of title, possession or access to the benefit and economic use of his property.").

⁹⁸ Treaty, **C-1**, Art 5(1) (requiring a valuation date no later than the day the impending expropriation became public knowledge). As noted above, Compass Lexecon has also calculated the value of Colquiri at Claimant's alternative valuation date of 4 June 2012 and, all things being equal, the impact in the valuation is minimal. *See* Second Expert Report of Compass Lexecon, Footnote 6.

Decree) and Glencore Bermuda allegedly did not lose permanent control of the Mine until that date.⁹⁹ Bolivia’s motive for selecting this date is transparent. It seeks to select a date after 8 June 2012, when Claimant, to mitigate its damages, entered into the Rosario Agreement with the Cooperativa 26 de Febrero and the Government of Bolivia.¹⁰⁰ The Rosario Agreement granted the Cooperativa the right to mine one of the Colquiri Mine’s four mineral veins—the Rosario vein—provided it would sell all of its raw material production to Colquiri (which would subsequently process it into tradeable concentrates).¹⁰¹ Under Bolivia’s theory, a valuation date of 19 June 2012 allows it to exclude the value of the Rosario Agreement from Glencore Bermuda’s damages—arriving at an amount that it calculates at US\$9.3 million.¹⁰² Bolivia is wrong about the valuation date and, even if it were correct (it is not), it inflates the impact of the Rosario Agreement.¹⁰³

59. Bolivia concedes that Glencore Bermuda lost control of the Mine on 30 May 2012, but alleges that Glencore Bermuda was able to temporarily restore operations until 20 June 2012.¹⁰⁴ Contrary to Bolivia’s assertions, the evidence at the Hearing established that Glencore Bermuda never regained operations (including production) at the Colquiri Mine after 30 May 2012.¹⁰⁵ [REDACTED]

⁹⁹ Statement of Defense, paras 701-714.

¹⁰⁰ *Ibid*, para 703; Rosario Agreement, C-35.

¹⁰¹ *Ibid*, clause 1. *See also*, Statement of Claim, paras 11, 105-106; Reply on the Merits, paras 135-136.

¹⁰² Expert Report of Quadrant, paras 93-94. As Compass Lexecon explains, accounting for the Rosario Agreement would reduce the FMV of Colquiri by less than 1%. Second Expert Report of Compass Lexecon, Appendix B, para 154.

¹⁰³ Even assuming that the Rosario Agreement should be factored into the valuation of Colquiri (which it should not), Compass Lexecon demonstrates that, if calculated correctly, the Agreement would have reduced the FMV of Colquiri by less than 1%, because the Agreement obligated the *cooperativistas* to sell the ore they extracted from the Rosario vein to Glencore Bermuda. *Ibid*, Appendix B, paras 147, 154.

¹⁰⁴ Statement of Defense, paras 705-707.

¹⁰⁵ Direct Examination of Mr C Romero, Day 3, Transcript (English) 586:22-25 (“300 cooperative members who physically took the mining center and prevented access for the Mine workers to the Mine and interrupted work, mining work, in the Mine.”) (Spanish original at Direct Examination of Mr C Romero, Day 3, Transcript (Spanish) 740:8-12, 587:4-7 (“about 300 co-op members had

[REDACTED]

[REDACTED]

[REDACTED]

¹⁰⁶ Furthermore, the fact that Glencore Bermuda had the legal authority to enter into the Rosario Agreement on 8 June 2012 does not mean that Glencore Bermuda could operate the Mine on that date, as Bolivia suggests.¹⁰⁷ All it shows is that Glencore Bermuda behaved as though it still had legal rights under the Colquiri Lease even though it had lost operational control of the Mine on 30 May 2012.¹⁰⁸ As a result, the valuation date for Colquiri should be 29 May 2012.

installed a watchful vigil that prevented access to the Mine and also employed a threat of physical confrontation with the workers given the extreme measure undertaken.”) (Spanish original at Direct Examination of Mr C Romero, Day 3, Transcript (Spanish), 739:18 – 740:1, 740:8-12). On 8 June 2012, the *cooperativistas* lifted their blockade of the Colquiri Mine as a result of the conclusion of the Rosario Agreement. However, Claimant never resumed normal operations (including production) at the Colquiri Mine, because the situation deteriorated again on 10 June 2012 when distinct and inconsistent agreements that Bolivia had cut with the Colquiri workers and the *cooperativas* became public, sparking violent clashes between the two groups in the town of Colquiri. See Opening Statement of Claimant, Day 1, Transcript (English), 46:25 - 48:12.

106

[REDACTED]

107

Statement of Defense, para 705.

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Instead of limiting their inquiry to the date on which a claimant lost the legal rights to its investment, tribunals have looked to the specific facts of each case (including the date on which the claimant lost access to or control over its investment as a matter of fact) to determine the appropriate date of valuation, *ie*, the date of valuation that provides the claimant with full reparation. See *Compañía del Desarrollo de Santa Elena SA v Republic of Costa Rica* (ICSID Case No ARB/96/1) Final Award, 17 February 2000, **CLA-25**, paras 77-78 (“There is ample authority for the proposition that a property has been expropriated when the effect of the measures taken by the state has been to deprive the owner of title, possession or access to the benefit and economic use of his property [...]. Stated differently, international law does not lay down any precise or automatic criterion, such as the date of the transfer of ownership [...]. The expropriated property is to be evaluated as of the date on which the governmental ‘interference’ has deprived the owner of his rights or has made those rights practically useless. This is a matter of fact for the Tribunal to assess in the light of the circumstances of the case.”). See also, *Ioannis Kardassopoulos and Ron Fuchs v Republic of Georgia* (ICSID Case Nos ARB/05/18 and ARB/07/15) Award, 3 March 2010, **CLA-96**, para 517 (finding that the appropriate valuation date is the date necessary “to ensure full reparation and to avoid any diminution of value attributable to the State’s conduct leading up to the expropriation”); *Azurix Corp v Argentine Republic* (ICSID Case No ARB/01/12) Award, 14 July 2006, **CLA-63**, para 417 (quoting *Malek v. Iran* (Iran-U.S. C.T.) Award 534-193-3, 1992, para 114, which found that “where the alleged expropriation is

60. Alternatively, even if the Tribunal were to conclude that Claimant did not lose the practical use of its investments in Colquiri on 30 May 2012 (it did), Bolivia does not dispute that on 5 June 2012 it was announced at a press conference that the Government had decided to nationalize the Colquiri Mine, and Bolivia's own witness, Mr Mamani, told the Bolivian press that the Ministry of Mining was already working on a draft of the Colquiri Mine Nationalization Decree, which it would enact shortly thereafter.¹⁰⁹ As a result, the date of valuation should be no later than the day prior to that announcement—4 June 2012.

carried out by way of a series of interferences in the enjoyment of property," the appropriate date of valuation is "the day when the interference has ripened into a more or less irreversible deprivation of the property."); *SAUR International v Argentine Republic* (ICSID Case No ARB/04/4) Award, 22 May 2014, **CLA-255**, paras 168-169 ("The objective is to ensure that "acts that do not constitute, as such, an expropriation, but that have the effect of diminishing the value of the investment, are not disregarded for purposes of compensation. To this end, it is necessary to bring the date of valuation back [...] to a time pre-dating the expropriation, to a date at which the criterion of 'normal economic situation' is met.") (unofficial translation from Spanish original).

¹⁰⁹ "Mineros de Colquiri exigen al Gobierno nacionalizar la mina," *La Razón*, 6 June 2012, **C-124**, p 1 ("The leader confirmed that the decision to expropriate said mining district is in the hands of the Executive. 'The Minister of Mining informed us that the decree nationalizing the Mine is being drafted to be subsequently enacted. He told us that the measure would be carried out until tomorrow (today).'" (unofficial English translation from Spanish original). At the Hearing, Mr Mamani confirmed having made this statement on 5 June 2012. *See* Cross Examination of Mr J Mamani, Day 3, Transcript (English) 739:18 – 740:17 (Spanish original at Cross Examination of Mr J Mamani, Day 3, Transcript (Spanish) 951:20 – 952:22):

[Ms Marigo]: In the interview, just to confirm, you said--and these are quotes [...] citing you, it says: "The Minister of Mining informed us that the Decree nationalizing the Mine is being drafted to be subsequently enacted." 6 June, on that date, you told the reporter that at that time the Minister of Mining was preparing the Decree to nationalize the Mine; is that correct?

[Mr Mamani]: I am not saying that it was prepared. I'm saying that we were informed that they were preparing the decree.

Q: Well, you're saying the Minister of Mining informed you. The Minister of Mining was at the meeting; correct?

A: Yes, he was at the meeting.

Q: So, he said: "He informed us that the Decree nationalizing the Mine is being prepared to be subsequently enacted." That was the information you received from the Minister. I'm not saying whether you know for a fact whether this was being prepared or not, but that is what the Minister informed you of, correct?

A: Well, they said they might be able to do this through a Supreme Decree. We didn't say anything about how, if through a law or a decree. I don't know.

(English translation amended for accuracy with audio of Spanish original).

c. Glencore Bermuda's production forecasts for Colquiri are reasonable

61. Based on RPA's projections, Compass Lexecon assumes that, but-for Bolivia's wrongful conduct, Colquiri would have completed the expansion plans that were underway at that time¹¹⁰ and, as a result: (i) increased the amount of ore that the Mine and Concentrator Plant would have extracted and processed from 289,888 tonnes of ore in 2011 to 550,579 tonnes of ore a year from 2014 through the end of the Colquiri Lease in 2030,¹¹¹ and (ii) begun operating the Tailings Plant in 2014, processing 300,000 tonnes of tailings that year, and increased the Tailings Plant's throughput to one million tonnes of tailings a year from 2016 through 2023.¹¹²
62. Processing these increased volumes of minerals, Colquiri would have produced 105,500 tonnes of tin and zinc concentrates in 2014 and 151,800 tonnes of concentrates a year beginning in 2016, once the Tailings Plant was fully

See also, "Gobierno plantea nacionalizar Colquiri para poner fin al conflicto minero," *La Patria*, 6 June 2012, **C-123**, p 2 ("The Government presented yesterday the nationalization of the Colquiri mine, operated by the private company Sinchi Wayra, to end the mining conflict that arose since last Wednesday, May 30 when the workers of the mining cooperative '26 de Febrero' took the site. [...] Yesterday, after a meeting with the Minister of Mining, Mario Virreira, held in the Archives of the Comibol, San Jose sector, in which nationalization was proposed as the last alternative to prevent clashes between unionized miners and cooperative members, the leaders of the Colquiri Mining Workers' Union accepted the suggestion, which they initially rejected.") (unofficial English translation from Spanish original). It was also confirmed at the Hearing by Mr Héctor Córdova, Comibol's President at that time. *See* Cross Examination of Mr H Córdova, Day 2, Transcript (English) 518:17-23 ("the Mining Minister was [...] the person I reported to, and they told [sic] me, look, the Colquiri Union has already made a Decision that was the key Decision we were waiting for. But, at the same time, there was a press conference, and the Colquiri workers invited journalists and made their Decision public before all of the press to revert the field.") (Spanish original at Cross Examination of Mr H Córdova, Day 2, Transcript (Spanish) 646:14 – 647:2).

¹¹⁰ These expansion plans were based on contemporaneous documents that are described below in detail. *See* Third Witness Statement of Eduardo Lazcano, paras 17-18.

¹¹¹ Second Expert Report of Compass Lexecon, para 38; Second Expert Report of RPA, para 56; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, p 28, Table 9, p 88, Table 41.

¹¹² Second Expert Report of Compass Lexecon, para 38; Second Expert Report of RPA, para 182, Table 9; Expert Report of RPA, paras 50, 104, 113, 117, 123; Pincock, Allen & Holt, Colquiri Tailings Project, Final Report, 2004, **CLEX-29**, p 1. Pursuant to RPA's projections, on which Compass Lexecon relies, the Tailings Plant would have processed tailings in 2024 as well with a reduced throughput of 225,000 tonnes that year. Compass Lexecon Updated Colquiri Valuation, **CLEX-040**, "Revenues," Z132. *See also* Third Witness Statement of Eduardo Lazcano, para 61.

- operational.¹¹³ These production levels are based on RPA's projections regarding the average head grades (*ie*, the percentage of tin and zinc) for the ore and tailings processed by the Concentrator Plant and Tailings Plant, respectively, and the average recovery rates (*ie*, the percentage of the minerals that would be converted to concentrate) of each of the two Plants.¹¹⁴
63. Head grades and recovery rates are relevant because the higher the grades and recovery, the more mineral concentrate that Colquiri can produce per tonne of ore processed. RPA projects that from 2014 onward, the Concentrator Plant would have processed ore with an average head grade of 1.29% for tin and 7.52% for zinc, and that, on average, the Concentrator Plant would have recovered or converted 72% of that tin and 76% of that zinc into concentrates.¹¹⁵ RPA projects that the Tailings Plant would have processed tailings with an average head grade of 0.51% for tin and 4.21% for zinc, and that, on average, the Tailings Plant would have recovered 51% of that tin and 65% of that zinc.¹¹⁶
64. The following diagrams illustrate how Claimant's expert, RPA, calculates its annual production forecasts for the Concentrator and Tailings Plants:

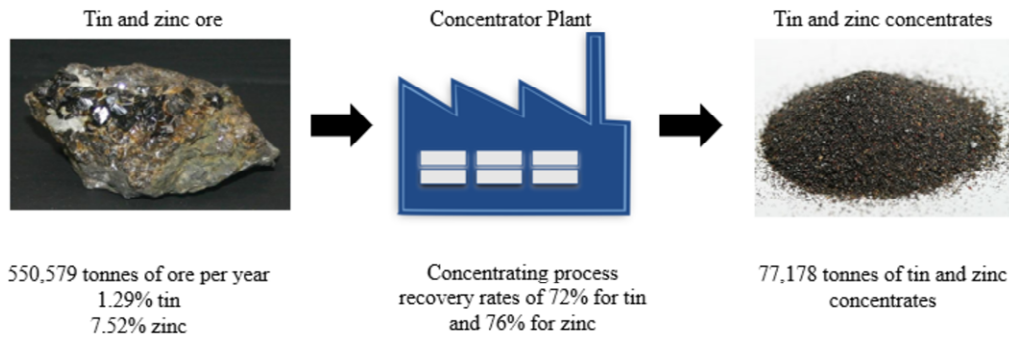
¹¹³ Second Expert Report of Compass Lexecon, paras 20, 38; Compass Lexecon Updated Colquiri Valuation, **CLEX-040**, "Revenues," P59-60, P157-158, R59-60, R157-158. In 2014, the Concentrator Plant and the Tailings Plant would have produced 77,178 and 24,355 tonnes of concentrates, respectively, and in 2016, they would have produced 77,178 and 74,599 tonnes of concentrates, respectively.

¹¹⁴ Second Expert Report of Compass Lexecon, paras 31, 43. Compass Lexecon Updated Colquiri Valuation, **CLEX-040**, "Revenues," rows 133, 134, 137, 138; Second Expert Report of RPA, paras 78, 80, 119, 144.

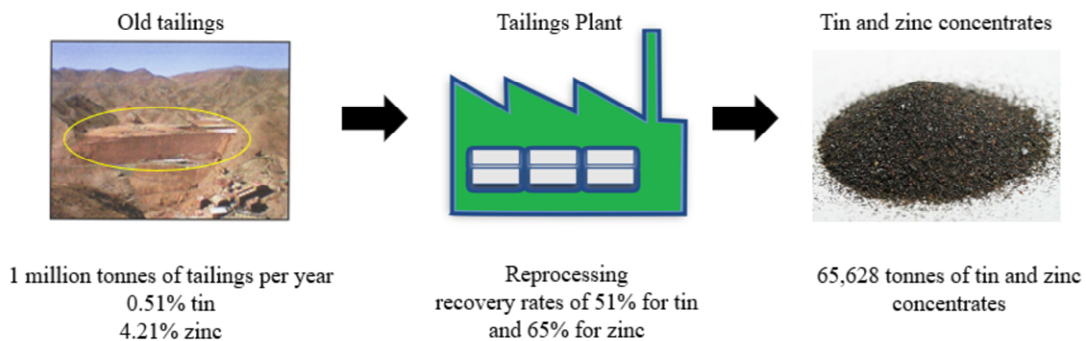
¹¹⁵ *Ibid*, paras 20(b)(iii)-(iv), 67, 80. *See also* Second Expert Report of Compass Lexecon, paras 31, 43.

¹¹⁶ *Ibid*, para 43; Second Expert Report of RPA, paras 20(c)(iv), 119, 144, 154.

Concentrator Plant:



Tailings Plant:



65. Based on the projections in the Expert Report of Bolivia's mining expert (SRK), Bolivia's valuation expert (Quadrant) assumes that, in the but-for scenario, Glencore Bermuda would not have increased the amount of ore that the Mine and Concentrator Plant would have extracted and processed each year, and that the Mine only would have operated from 2012 to 2025, instead of 2030.¹¹⁷ Quadrant also assumes that Glencore Bermuda would not have built the Tailings Plant and therefore it assigns no value to the Tailings Plant,¹¹⁸ as explained above. SRK's projections for Colquiri (307,000 tonnes of ore a year)¹¹⁹ are approximately equal to the volume of ore that the Mine and Concentrator Plant were extracting and processing in 2011 and are not indicative of the level of operations that Colquiri had planned and would have achieved but-for Bolivia's conduct.

¹¹⁷ Expert Report of Quadrant, para 29; Expert Report of SRK, para 79.

¹¹⁸ Expert Report of Quadrant, para 46; Expert Report of SRK, para 95.

¹¹⁹ Expert Report of Quadrant, paras 29, 39; Expert Report of SRK, para 79.

66. To justify its assumption that Colquiri would not have expanded its operations, Quadrant relies on SRK's assertions that: (i) Glencore Bermuda did not intend to expand the Mine and Concentrator Plant or construct the Tailings Plant; (ii) the minerals in the Colquiri Mine and tailings were not of sufficient quantity or quality to support such an expansion; and (iii) it was not technically feasible for Colquiri to produce the projected volumes of mineral concentrates.¹²⁰ These assertions have no merit.

i The Colquiri expansion was in motion

67. The projections of Claimant's expert, RPA, for the expansion of the Colquiri Mine and Concentrator Plant are based on the Triennial Plan—a three-year business plan that Glencore Bermuda approved in 2011.¹²¹ RPA's projections for the construction and operation of the Tailings Plant are based on the 2004 Feasibility Study—a feasibility study of the Plant that the prior owner of Colquiri, Comsur, had approved in 2004 and that Glencore Bermuda adopted in 2005.¹²² Contrary to SRK's assertions, the record in this arbitration is replete with proof that Glencore Bermuda intended to expand Colquiri's operations pursuant to the Triennial Plan and the 2004 Feasibility Study, and that it was in the process of doing so when it lost its Investment.

68. As Claimant's witness, Mr Eskdale, explains in detail, Glencore Bermuda acquired Colquiri in 2005 with the intent to construct the Tailings Plant in order to harvest the large volume of minerals that were stranded in the Mine's old tailings.¹²³ Glencore Bermuda also intended to explore the possibility of

¹²⁰ Expert Report of Quadrant, Section 5; Expert Report of SRK, Section 7.

¹²¹ First Expert Report of RPA, paras 176-177; Third Witness Statement of Christopher Eskdale, paras 45-47; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**.

¹²² First Expert Report of RPA, paras 128-130; Third Witness Statement of Christopher Eskdale, paras 23, 35; Third Witness Statement of Eduardo Lazcano, paras 12, 61; Feasibility Study of the Colquiri Tailings Project, December 2003, **C-61**; Colquiri, Colquiri Old Tailings Project, Business Plan, March 2004, **RPA-49**; Old Tailings Colquiri Project, 2005, **C-161**.

¹²³ Third Witness Statement of Christopher Eskdale, paras 10, 22. *See also* Third Witness Statement of Eduardo Lazcano, para 61.

- expanding the output of the Mine, which was located on a mineral deposit that had a “geological style” (several continuous veins of minerals that ran from the surface to great depths) that strongly suggested the presence of a large volume of minerals.¹²⁴
69. In 2004, Mr Eskdale, who led Glencore Bermuda’s due diligence and acquisition of Colquiri, included the Tailings Plant in the valuation model he created for Colquiri.¹²⁵ Mr Eskdale based his assessment on, among other things, the 2004 Feasibility Study and an independent technical review of the Tailings Plant prepared in 2004 by international mining consultant Pincock Allen Holt (the *Pincock Report*)—*ie*, precisely the types of technical documents on which a willing buyer evaluates a potential purchase.¹²⁶ The 2004 Feasibility Study, the independent Pincock Report and Glencore Bermuda’s own due diligence each concluded that the Tailings Plant was technically feasible and would be economically profitable.¹²⁷
70. By 2005, Glencore Bermuda’s predecessor, Comsur had begun to work on the Tailings Plant project.¹²⁸ After acquiring Colquiri, Glencore Bermuda carried forward these efforts. Glencore Bermuda, through Sinchi Wayra, conducted

¹²⁴ Third Witness Statement of Christopher Eskdale, paras 16(b), 20, 32. *See* Glencore inter office correspondence from Mr Eskdale to Mr Strothotte and Mr Glasenberg, 20 October 2004, **C-196**, p 3. *See also*, Pincock, Allen & Holt, Minera Resource and Reserve Review, Chapter 3, Colquiri Mine, 2 November 2004, **C-309**, p 14.

¹²⁵ Third Witness Statement of Christopher Eskdale, paras 24, 34; DCF model prepared by Glencore Bermuda for the acquisition of the Assets, April 2005, **C-311**.

¹²⁶ Third Witness Statement of Christopher Eskdale, paras 23, 34; Feasibility Study of the Colquiri Tailings Project, December 2003, **C-61**; Pincock, Allen & Holt, Colquiri Tailings Project, Final Report, 5 November 2004, **RPA-12**. A feasibility study is the last and most detailed step in the engineering process for evaluating a mining project for a go/no-go decision and financing purposes. *See* Third Witness Statement of Christopher Eskdale, para 23.

¹²⁷ *Ibid*, paras 23, 34-35. The 2004 Feasibility Study concluded that there were 10 million tonnes of exploitable tailings at the Colquiri Mine. Feasibility Study of the Colquiri Tailings Project, December 2003, **C-61**, p 5. The Pincock Report reviewed the data underlying the 2004 Feasibility Study, which included extensive sampling of the tailings for tin and zinc, and confirmed that it was economically feasible to reprocess the old tailings. Pincock, Allen & Holt, Colquiri Tailings Project, Final Report, 5 November 2004, **RPA-12**, p 1.

¹²⁸ Third Witness Statement of Christopher Eskdale, para 24.

- studies to confirm the location for the Tailings Plant,¹²⁹ designed the operating process and machinery to be installed in the Plant,¹³⁰ and, in 2006 and 2007, invested approximately US\$1.2 million building the platform on which the Tailings Plant was to be constructed and purchasing related materials.¹³¹
71. At the same time that Glencore Bermuda was advancing the Tailings Plant, it also was exploring the Colquiri deposit.¹³² In 2007, Glencore geologists visited the Colquiri Mine and reviewed geological data obtained from drill samples that Glencore Bermuda took in 2005 and 2007, as well as drill sample data from prior operators of the Mine.¹³³ On the basis of this geological information, the geologist who led the review prepared an memorandum dated 6 December 2007 in which he described Colquiri as a “world class deposit” and explained that the Colquiri deposit contained sufficient tin and zinc to merit a significant expansion of the Colquiri Mine.¹³⁴ The memorandum estimated that Glencore Bermuda could expand the Colquiri Mine and Concentrator Plant, which were extracting and processing 1,000 tonnes of ore a day, to as much as 8,000 to 10,000 tonnes of ore a day.¹³⁵ On the basis of this geological review, Glencore Bermuda began to plan the further expansion of the Mine’s capacity to extract and process ore.¹³⁶
72. Glencore Bermuda intended to continue the construction of the Tailings Plant and its expansion plans for Colquiri when the global financial crisis forced it to

¹²⁹ Old Tailings Colquiri Project, 2005, **C-161**, pp 4-6, 29.

¹³⁰ *Ibid.*, pp 7, 27-28, 53-57.

¹³¹ See Third Witness Statement of Christopher Eskdale, para 36; “Colquiri Tailings Project,” Sinchi Wayra presentation, August 2007, **C-315**, p 7; Colquiri Tailings Project, 2008, **C-91**, p 8; Sinchi Wayra monthly report for April 2007, May 2007, **C-314**, p 2. See also Glencore, Sinchi Wayra Consolidated Management Report, December 2006, **RPA-34**, p 6; Old Tailings Colquiri Project, 2005, **C-161**, pp 51-60; Colquiri Tailings Project, internal presentation, Undated, **RPA-14**.

¹³² See Third Witness Statement of Christopher Eskdale, para 43.

¹³³ Glencore interoffice memorandum from Mr Teixeira to Mr Rode, 6 December 2007, **C-316**.

¹³⁴ *Ibid.*

¹³⁵ *Ibid.*, p 3.

¹³⁶ Third Witness Statement of Christopher Eskdale, para 43.

pause.¹³⁷ Beginning in 2008, the financial crisis caused a dramatic fall in mineral prices, including tin and zinc.¹³⁸ As a result, like most mining companies, Glencore Bermuda focused its efforts on sustaining existing operations and retaining current employees while conserving capital expenses until the crisis subsided.¹³⁹ Mineral prices began to recover in 2010, reaching pre-crisis levels by December 2010,¹⁴⁰ as shown below:



73. In light of the stabilization of tin prices, by late 2010 Glencore Bermuda resumed its expansion plans for Colquiri.¹⁴¹ With the assistance of independent mining

¹³⁷ *Ibid*, para 38.

¹³⁸ *Ibid*, para 39; Third Witness Statement of Eduardo Lazcano, paras 14, 65; Compass Lexecon Price Forecasts, Undated, **CLEX-30**, “Summary,” D9-G9.

¹³⁹ Third Witness Statement of Christopher Eskdale, para 38; Third Witness Statement of Eduardo Lazcano, para 14.

¹⁴⁰ Third Witness Statement of Christopher Eskdale, para 39; Third Witness Statement of Eduardo Lazcano, paras 15, 65; Compass Lexecon Price Forecasts, Undated, **CLEX-30**, “Summary,” D3812-3837, D3903-3991.

¹⁴¹ Third Witness Statement of Christopher Eskdale, para 38; Third Witness Statement of Eduardo Lazcano, paras 15, 65.

consultants,¹⁴² Sinchi Wayra completed the Triennial Plan, which was designed to expand the Mine and Concentrator Plant over three years and double the rate at which Colquiri was extracting and processing ore from approximately 1,000 tonnes to 2,000 tonnes of ore a day.¹⁴³ Later in 2011, the Triennial Plan was approved by Sinchi Wayra management in La Paz, and then presented the corresponding investment plan to Mr Eskdale in his then role as Glencore's Senior Asset Manager for Global Operations.¹⁴⁴ Mr Eskdale approved the Plan and necessary capital expenditures in 2011.¹⁴⁵

74. As Mr Eskdale explains, while the wealth of minerals in the Colquiri deposit could have supported a more significant expansion of the Mine to a processing rate of as much as 8,000 to 10,000 tonnes of ore a day (in addition to the production anticipated from the Tailings Plant), the Triennial Plan was attractive because it was technically simple and required only a modest amount of capital investment.¹⁴⁶ It only required Colquiri to build a ramp for vehicles within existing underground areas of the Mine to 405 meters depth (a level that is considered shallow by the standard of underground mines and thus appropriate for a ramp) and to expand the existing Concentrator Plant, rather than build a new plant.¹⁴⁷ In addition, the Triennial Plan's limited scope allowed Colquiri to focus

¹⁴² *Ibid.*, paras 23-25; Alternatives for the expansion of the Colquiri Mine, Sinchi Wayra, July 2011, **C-321**; Colquiri Mine Expansion Project, 2 March 2012, **C-324**. Sinchi Wayra engaged a mining engineer to prepare the project to expand the Colquiri Mine's underground infrastructure, and a metallurgic engineer to design the project to expand the Concentrator Plant. Once the Triennial Plan was completed, the independent mining consultants were hired by Colquiri as project managers to lead the expansion projects.

¹⁴³ Third Witness Statement of Eduardo Lazcano, paras 18, 42; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, pp 87-89. *See* Third Witness Statement of Christopher Eskdale, paras 43, 45.

¹⁴⁴ *Ibid.*, para 45; Third Witness Statement of Eduardo Lazcano, para 25.

¹⁴⁵ Third Witness Statement of Christopher Eskdale, para 45.

¹⁴⁶ *Ibid.*, paras 46-47; Third Witness Statement of Eduardo Lazcano, para 24-25.

¹⁴⁷ Third Witness Statement of Christopher Eskdale, para 47; Third Witness Statement of Eduardo Lazcano, paras 16-18, 31, 42.

on the most mineral-rich ore, which would generate a higher rate of return on the capital invested than a plan that expanded the Mine more significantly.¹⁴⁸

75. Between 2011 and 30 May 2012, Glencore Bermuda advanced the Tailings Plant and the expansion of the Mine and Concentrator Plant.¹⁴⁹ Contrary to SRK's assertion that Glencore Bermuda never intended to construct the Tailings Plant or implement the Triennial Plan, Glencore Bermuda:

- (a) ***Tailings Plant:*** Conducted a new study to confirm the stability of the platform (that it had constructed in 2007) where the Tailings Plant was to be built,¹⁵⁰ and reached an agreement with the Cooperativa 21 de Diciembre, which had been mining an area in Colquiri's old tailings storage facility (equal to approximately 5% of the facility's surface area), to abandon the tailings so that Colquiri could mine them.¹⁵¹
- (b) ***Mine Expansion:*** To expand the Mine, Colquiri had dug deeper into the Colquiri deposit, creating work areas at different depths, and it expanded the width of those work areas.¹⁵² As of May 2012, the Mine had the capacity to extract up to 390,000 tonnes of ore per year using a pair of winzes.¹⁵³ In order to extract 550,500 tonnes of ore per year as forecasted in the Triennial Plan, Colquiri planned to build a new ramp within the Mine by which trucks would transport ore out of lower levels of the

¹⁴⁸ Third Witness Statement of Christopher Eskdale, para 46.

¹⁴⁹ Third Witness Statement of Eduardo Lazcano, para 30, 39, 40, 48.

¹⁵⁰ *Ibid*, para 64; "Colquiri Tailings Project," Sinchi Wayra presentation, August 2007, **C-315**, p 7; Colquiri Tailings Project, 2008, **C-91**, p 8; Sinchi Wayra monthly report for April 2007, May 2007, **C-314**, p 2; Glencore, Sinchi Wayra Consolidated Management Report, December 2006, **RPA-34**, p 6.

¹⁵¹ Third Witness Statement of Eduardo Lazcano, paras 67-68; Public deed of sublease of tailings, subscribed by Compañía Minera Colquiri S.A. and the Cooperativa "21 de Diciembre Colquiri LTDA", 10 March 2006, **R-39**, fifth clause, Sections a), p) and q), pp 4-6; Email from Sinchi Wayra (Mr Hartmann) to Sinchi Wayra (Mr Lazcano), 18 April 2012, **C-328**.

¹⁵² Third Witness Statement of Eduardo Lazcano, para 20.

¹⁵³ *Ibid*, para 34.

Mine.¹⁵⁴ By May 2012, Colquiri had begun to construct the new ramp as confirmed by [REDACTED]¹⁵⁵ The contract to build the ramp provided that it would be completed by July 2013—*ie*, five months before the Mine was projected to have begun to extract 550,500 tonnes of ore per year.¹⁵⁶ Colquiri also had other preparations underway, including the construction of a new underground warehouse, which would have made operations more efficient by reducing transportation costs and time within the Mine.¹⁵⁷

- (c) **Concentrator Plant Expansion:** The Triennial Plan provided for the expansion of the processing capacity of the Concentrator Plant from 1,000 to 2,000 tonnes of ore per day to be able to process the 550,500 tonnes of ore that would be extracted from the Mine each year beginning in 2014.¹⁵⁸ To achieve this, Colquiri intended, among other things, to increase the capacity of the Plant’s processors (called flotation cells) for separating the tin and zinc from the ore, install “thickening” tanks to manage and re-use the water used in the concentrating process, and install a new system for grinding and crushing the ore prior to processing it.¹⁵⁹ A Colquiri report from the first quarter of 2012 stated that these expansion plans for the Plant were on “average” 20.7% complete.¹⁶⁰ By that time, Colquiri had

¹⁵⁴ *Ibid*, paras 18, 31. The diagram in paragraph 96, below, illustrates how Colquiri extracted ore from the Mine prior to 2012 and where it was building the new ramp as of May 2012.

¹⁵⁵ *Ibid*, para 39; [REDACTED].

¹⁵⁶ Third Witness Statement of Eduardo Lazcano, para 39; Construction contract between Colquiri and Arcal Mineros, 14 March 2012, **C-325**, p 1.

¹⁵⁷ Third Witness Statement of Eduardo Lazcano, paras 32, 40; First Witness Statement of Eduardo Lazcano, para 30; Colquiri first quarter analysis, April 2012, **C-326**, p 39; Email from Sinchi Wayra (Mr Rodríguez) to Sinchi Wayra (Ms Carranza), 26 April 2012, **C-329**.

¹⁵⁸ Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, pp 87-88; Third Witness Statement of Eduardo Lazcano, para 18.

¹⁵⁹ *Ibid*, para 42; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, p 93.

¹⁶⁰ Colquiri first quarter analysis, April 2012, **C-326**, pp 28-33.

already purchased the new flotation cells;¹⁶¹ completed the design for the new “thickening” tanks¹⁶² and budgeted for their purchase;¹⁶³ and begun to purchase more and better chemicals used to separate metal from the ore.¹⁶⁴ Colquiri also hired an independent consultant, Holland & Holland, to advise on the expansion of the Concentrator Plant.¹⁶⁵ In its report, dated August 2011, Holland & Holland concluded that the expansion plan was feasible, observed that the Concentrator Plant was already being improved, and provided recommendations for the expansion.¹⁶⁶

- (d) ***New Tailings Storage:*** To store the tailings that would have been produced by the Tailings Plant and the expanded Concentrator Plant, Colquiri had prepared engineering plans to expand the storage capacity of an existing tailings storage facility¹⁶⁷ and purchased an easement over land where it planned to build a new tailings storage facility.¹⁶⁸
- (e) ***Expansion Budget:*** Sinchi Wayra had allocated capital for the aforementioned steps in the Colquiri expansion plans and additional steps. For example, the 2012 capital investment plan, dated 29 September 2011,

¹⁶¹ Third Witness Statement of Eduardo Lazcano, paras 46, 48, 53; First Witness Statement of Eduardo Lazcano, para 24; Colquiri first quarter analysis, April 2012, **C-326**, p 30; Compañía Minera Colquiri Investment Plan for 2012, 2011, **R-34**, “Datos,” row 348.

¹⁶² Third Witness Statement of Eduardo Lazcano, paras 42, 46; First Witness Statement of Eduardo Lazcano, para 24.

¹⁶³ *Ibid.*, paras 42, 46. Compañía Minera Colquiri Investment Plan for 2012, 2011, **R-34**, “Datos,” row 347.

¹⁶⁴ Third Witness Statement of Eduardo Lazcano, para 48; Colquiri first quarter analysis, April 2012, **C-326**, p 19.

¹⁶⁵ Report on the expansion of Colquiri and Bolivar Concentrator Operations of Sinchi Wayra SA, Holland and Holland Consultants, August 2011, **C-323**.

¹⁶⁶ *Ibid.*, pp 12-15.

¹⁶⁷ Third Witness Statement of Eduardo Lazcano, paras 16, 18, 54-55; “Colquiri Tailings Management Forecast,” Sinchi Wayra presentation, January 2011, **C-320**, p 2.

¹⁶⁸ Third Witness Statement of Eduardo Lazcano, paras 57-58; Mining easement agreement between Colquiri and Mr Padilla Mamani, 25 January 2010, **C-318**; Colquiri accounting details of payments made to Mr Mamani, 10 April 2010, **C-333**; Sinchi Wayra request for Authorization of Expenditure, 16 April 2010, **C-319**.

_____ includes US\$7.8 million for expansion investments projected in the Triennial Plan.¹⁶⁹

76. This list of expansion activities demonstrates that, but-for Bolivia's wrongful conduct, Glencore Bermuda would have continued its expansion efforts after May 2012 and completed the construction of the Tailings Plant, pursuant to the 2004 Feasibility Study, and expansion of the Mine and Concentrator Plant, pursuant to the Triennial Plan.¹⁷⁰
77. Likewise, a contemporaneous document submitted by Bolivia's own expert demonstrates that, as of 2012, the Government shared Glencore Bermuda's intent to expand Colquiri's output and belief that output could be expanded to a level near the level contemplated by the Triennial Plan. To its Expert Report, Quadrant attached an investment plan dated March 2012 (the *March 2012 Plan*). The March 2012 Plan is an expansion plan that Sinchi Wayra prepared at the request of State-owned Comibol in the context of the forced renegotiation of the Colquiri Lease.¹⁷¹
78. The March 2012 Plan shows that if Glencore Bermuda and Comibol had operated the Mine as a joint venture, they would have expanded the Mine and Concentrator Plant to extract and process 470,000 tonnes of ore a year by 2016.¹⁷² These projections are only moderately lower than those of the Triennial Plan (550,500 tonnes of ore a year), and they belie the incredibly low projections for which Bolivia now advocates (307,000 tonnes of ore a year).

¹⁶⁹ Third Witness Statement of Eduardo Lazcano, para 28; Compañía Minera Colquiri Investment Plan for 2012, 2011, **R-34**, "Datos," rows 336, 339-340, 343-351. As shown in the Triennial Plan itself, such plan included investments that would have not been registered as "expansion" in the 2012 investment budget such as maintenance and administrative costs (approximately US\$1.2 million and US\$225,000, respectively) and contingency provisions (approximately US\$780,000). *See* Triennial Plan, July 2011, **C-108**, pp 115-118.

¹⁷⁰ *See* Third Witness Statement of Christopher Eskdale, para 51; Third Witness Statement of Eduardo Lazcano, paras 39, 65.

¹⁷¹ Expert Report of Quadrant, para 48; March 2012 Investment Plan, 4 April 2012, **EO-7**.

¹⁷² *Ibid*, p 16.

79. In addition, the differences between the Triennial Plan and March 2012 Plan are easily explained. If Glencore Bermuda were forced to enter a joint venture with Comibol, the Government would have required that the Colquiri expansion take place over five years, rather than on the three-year timeline that Glencore Bermuda had adopted.¹⁷³ In addition, the capital investment would have been more constrained because 50% of the investment was scheduled to come from Comibol, which had limited resources.¹⁷⁴ As a result, production under the March 2012 Plan (had Glencore Bermuda been forced to accept it) would have been moderately lower than the production levels that Glencore Bermuda could have achieved alone, without these Government constraints.¹⁷⁵

¹⁷³ Third Witness Statement of Christopher Eskdale, para 50.

¹⁷⁴ *Ibid.*

¹⁷⁵ *See ibid.*, paras 50-51. Bolivia and its expert Quadrant also argue that, when assessing the FMV of Colquiri, any willing buyer would have considered the possibility that Colquiri may be forced to transfer 55% of its participation in the Colquiri Mine to Comibol in the context of the State-imposed negotiations of a joint venture with Comibol and thus would have discounted from Colquiri's value the cashflows that would be shared with the State-owned company. *See* Statement of Defense, para 784; Expert Report of Quadrant, paras 70-86. Bolivia is mistaken. *First*, if Colquiri were forced into a joint venture with the State (which was not certain), it must be assumed that Bolivia would have honored its obligations under the Treaty to compensate the investor for the FMV of the portion of Colquiri that was taken by the forced renegotiation, and therefore the value of Colquiri to the hypothetical buyer would not be reduced. *Second*, it is well-established that a State cannot reduce the damages owed for the value of an investment on the basis that the State may have reduced the value of the investment by breaching the investor's rights through a forced renegotiation of the term of investment. *See Occidental Petroleum Corporation and Occidental Exploration and Production Company v Republic of Ecuador* (ICSID Case No ARB/06/11) Award, 5 October 2012, **CLA-254**, para 534 (emphasis added):

The basic question to be answered in a valuation exercise such as the present one, discussed below, is 'what was the value of that which the Claimants actually lost?' The question is not 'what was the value of that which the Claimants might have lost had history been different?' To answer this latter question, which is effectively what the Respondent invites this Tribunal to do, would be to engage in impermissible speculation as to the terms of any possible re-negotiation. The Tribunal cannot know what the terms would have been, and in particular what the Claimants would have bargained for in exchange for the arrangement in question. Thus, these factors cannot be taken into account by the Tribunal in its determination of the fair market value of the Claimants' investment.

80. In sum, had Glencore Bermuda been allowed to continue to operate under the Colquiri Lease, it would have continued to implement the Tailings Project and Triennial Plan as planned.

ii Colquiri is a mineral-rich deposit

81. Claimant’s expert, Compass Lexecon, adopts RPA’s projections that, pursuant to the Triennial Plan, the Mine’s Concentrator Plant would have processed a total of 9.78 million tonnes of ore from the Colquiri Mine between 2012 and the end of the Colquiri Lease in 2030,¹⁷⁶ and that the ore would have had an average head grade (mineral content) of 1.29% tin and 7.52% zinc.¹⁷⁷ Based on the 2004 Feasibility Study, RPA projects (and Compass Lexecon assumes) that the Tailings Plant would have processed a total of 9.2 million tonnes of tailings from Colquiri’s old tailings dam between 2014 and 2024, and that the tailings would have had an average head grade of 0.51% tin and 4.21% zinc.¹⁷⁸

82. Bolivia asserts that these forecasts are “magical” and, pursuant to the Expert Report of SRK, Quadrant assumes that the Colquiri Mine would have only processed a percentage of the ore that Colquiri had already identified as of December 2011 and that (contrary to the facts in the record and Bolivia’s own operation of the Mine) Colquiri would not identify *any* additional ore in the Colquiri deposit.¹⁷⁹ Quadrant assumes that the head grades of the existing ore

¹⁷⁶ In its Expert Reports RPA provides projections over 20 years—from 2012 through 2031. Over that 20-year period, RPA projects that Colquiri would have processed 10.66 million tonnes of ore. From 2012 through 2030 (*ie*, until the expiration of the Colquiri Lease), RPA projects that Colquiri would have processed 9.78 million tonnes of ore, though the Mine will likely operate beyond 2030 given the large quantity of minerals present in the Colquiri deposit. 2020 RPA Model, January 2020, **RPA-55**, “Colquiri Mine,” row 52. *See* Second Expert Report of RPA, para 188.

¹⁷⁷ Second Expert Report of Compass Lexecon, para 18-34; Second Expert Report of RPA, paras 20(b)(iii), 67, 78.

¹⁷⁸ Second Expert Report of Compass Lexecon, para 38-44; Second Expert Report of RPA, paras 20(c)(iv), 119, 141, 144.

¹⁷⁹ Statement of Defense, paras 634, 645; Expert Report of SRK, para 79; Expert Report of Quadrant, paras 39, 42.

would have averaged 1.17% tin and 6.70% zinc.¹⁸⁰ In relation to the Tailings Plant, SRK asserts (and Quadrant assumes) that no tailings would have been processed, but speculates that, if the Tailings Plant were built, the head grades could be less than RPA's projections.¹⁸¹ Bolivia and its experts are wrong. Rather than magic, RPA's projections are based on hard data and mining practices accepted around the world and even practiced by Bolivia.

83. With regard to the ore present in the Colquiri Mine, as of 31 December 2011, Colquiri had already identified 4.181 million tonnes of Mineral Resources and Ore Reserves (*MROR*).¹⁸² Colquiri had classified those 4.181 million tonnes of MROR as 1.55 million tonnes of ore reserves and 2.63 million tonnes of mineral resources pursuant to the globally recognized Australian Joint Ore Reserves Committee Code (the *JORC Code*).¹⁸³ Contrary to SRK's assertion,¹⁸⁴ these 1.55

¹⁸⁰ Statement of Defense, paras 634, 645; Expert Report of SRK, para 79; Expert Report of Quadrant, paras 39, 42.

¹⁸¹ Expert Report of SRK, para 88; Expert Report of Quadrant, para 46.

¹⁸² Glencore International PLC, Annual Report 2011, March 2012, **RPA-31**, p 72, Sinchi Wayra Table (addition of Total Resources, valued at 4,181 million tonnes, and Total Reserves, valued at 1,555 million tonnes); First Expert Report of RPA, para 88, Table 2 (same); Second Expert Report of RPA, paras 29(b)(i), 45, Table 1. Mineral resources are the portions of ore where there is a reasonable prospect of finding minerals for eventual economic extraction. Ore reserves are the portions of ore where it has been confirmed that minerals exist, and that extraction is economically justified. The classification of ore as resources or reserves is governed by internationally recognized standards such as the JORC Code. Under these standards, resources and reserves are identified through geological drilling and subsequent analysis. By extracting ore samples in different locations and levels of the mine, one can obtain an estimate of its overall mineral resources and ore reserves. Broadly speaking, the more samples, the more certain one can be that the ore contains metal that is economically mineable. Third Witness Statement of Christopher Eskdale, para 16.

¹⁸³ Glencore International PLC, Annual Report 2011, March 2012, **RPA-31**, p 72, (showing Sinchi Wayra's reserves and resources table, with Total Resources, valued at 4,181 million tonnes, and Total Reserves, valued at 1,555 million tonnes); Expert Report of RPA, para 88, Table 2 (same); Second Expert Report of RPA, paras 45-46, 111; Second Expert Report of Compass Lexecon, para 30, Table 3. In its First Expert Report, RPA stated that, as of 31 December 2011, Colquiri had identified 5.73 million tonnes of mineral reserves and resources consisting of 1.55 million tonnes of mineral reserves and 4.181 million tonnes of mineral resources. In 2011, however, Glencore became a publicly traded company and for the first time in its history began to report mineral resources inclusive of mineral reserves. As a result, the 1.55 million tonnes of reserves that Glencore reported for Colquiri were included in, not in addition to, the 4.181 million tonnes of resources reported for Colquiri. Therefore, as of December 2011, Colquiri had already identified total reserves and resources of 4,181 million tonnes, not 5.73 million tonnes. In its Second Expert Report, RPA has corrected this misunderstanding, which does not affect the Colquiri valuation,

million tonnes of ore reserves and 2.63 million tonnes of mineral resources should not be factored by 90% and 60% (*ie*, reduced by 10% and 40%), respectively, to account for losses in the mining process. As RPA explains, under the JORC Code, the reductions that SRK proposes for ore reserves are already accounted for in the calculation of ore reserves, and therefore, further reductions would result in double deductions and be improper pursuant to the Code.¹⁸⁵ Similarly, while some mineral resources may not be converted to ore reserves, SRK provides no support for the low conversion rate that would result from a 40% reduction in mineral resources, and that high rate of reduction is contrary to Colquiri's long history of replenishing MROR.¹⁸⁶

84. SRK also is incorrect that the ore available in the Colquiri Mine was limited to the MROR identified as of December 2011. If Colquiri had mined those 4.181 million tonnes of MROR, it would have identified new ore as it dug deeper into the Mine, extracting the 9.78 million tonnes of ore projected to be extracted prior to the expiration of the Colquiri Lease in 2030. Indeed, the Triennial Plan states, and RPA has confirmed that, as of 2012, exploration drilling had determined that the Colquiri ore body continued for at least 260 meters below the lowest level of identified reserves and resources, providing an abundance of additional ore.¹⁸⁷

because, as explained below, Colquiri had ample ore resources to meet RPA's projections under the Triennial Plan. Second Expert Report of RPA, para 33, Footnote 108.

¹⁸⁴ Expert Report of SRK, paras 52-55, 79.

¹⁸⁵ Second Expert Report of RPA, paras 20(b)(i), 48.

¹⁸⁶ *Ibid*, para 48. Mineral resources are composed of three categories of resources: measured, indicated and inferred. In its Expert Report, SRK implies that inferred resources are too speculative to value. *See* Expert Report of SRK, para 23, Table 1. That is not correct. As RPA explains, it is appropriate and usual practice to include all resources, including inferred resources, in a mine valuation, and SRK itself has done so in other matters. Second Expert Report of RPA, paras 49-50; SRK Consulting (UK) Limited, 2019, A Competent Persons' Report on the Mineral Assets of Acacia Mining PLC (Executive Summary), prepared for Acacia Mining plc, July 2011, **RPA-72**, p 17.

¹⁸⁷ Second Expert Report of RPA, paras 32, 36. Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, Section 2.2.2. *See also* Third Witness Statement of Eduardo Lazcano, para 20.

85. Furthermore, RPA confirms that Colquiri’s practice of identifying new ore at the same time that previously identified ore is extracted—referred to as “mine and replenish”—is customary at mines, such as Colquiri, with large mineral deposits and long track records of identifying new ore.¹⁸⁸ As Bolivia should know, the “mine and replenish” method has been applied at Colquiri by Comsur (2000-2005),¹⁸⁹ Sinchi Wayra (2005-2012), and even after its nationalization by the State-owned Empresa Minera Colquiri.¹⁹⁰
86. The benefit of the mine and replenish method is that it allows the Mine to reduce the amount of capital that it invests in exploring for new ore.¹⁹¹ This is possible when a mineral deposit, such as Colquiri, is rich in minerals and the mine has a track record of identifying and extracting those minerals. In those circumstances, the mine’s operator may choose to delineate its MROR for shorter time periods (*eg*, three to five years) because it can be confident that it will replenish those resources and reserves.¹⁹² With regard to Colquiri, Glencore Bermuda’s witness, Mr Lazcano, confirms that Colquiri’s geological characteristics (large, continuous veins of minerals) and long track record of identifying new ore pursuant to the “mine and replenish” method made Sinchi Wayra confident that the Mine had more than sufficient amounts of ore to sustain the extraction levels projected in the Triennial Plan through the expiration of the Colquiri Lease in 2030.¹⁹³

¹⁸⁸ Second Expert Report of RPA, para 32. Bolivia and Glencore Bermuda also apply the “mine and replenish” method at the Bolivar and Porco Mines, which they jointly own. The agreement under which Glencore Bermuda operates those Mines requires it to replenish existing MROR to maintain, at a minimum, the same quantity of MROR as existed in March 2012. *See* Second Expert Report of RPA, para 35; USGS, 2019, Porco Mine (MRDS #10068799) SN, PB, ZN, **RPA-71**. *See also* Third Witness Statement of Christopher Eskdale, para 16; Third Witness Statement of Eduardo Lazcano, para 20.

¹⁸⁹ *See* Pincock Report, **C-309**, pp 12-13; Glencore Internal Memo, 2004, **R-302**, p 4; Glencore inter office correspondence from Mr Eskdale to Mr Strothotte and Mr Glasenberg, 20 October 2004, **C-196**, p 3.

¹⁹⁰ Second Expert Report of RPA, para 39.

¹⁹¹ Third Witness Statement of Christopher Eskdale, para 16(b).

¹⁹² *Ibid.* *See* Second Expert Report of RPA, para 32.

¹⁹³ Third Witness Statement of Mr Eduardo Lazcano, para 20, which reads:

87. The following table from Compass Lexecon’s Second Expert Report demonstrates that, contrary to SRK’s assertion, under the control of both Glencore Bermuda and the State, Colquiri has reliably identified new ore over many years and thereby sustained a nearly constant level of MROR (identified in the table as “Reserves + Resources”) even as Colquiri extracts millions of tonnes of ore from the Mine each year.

('000s Tonnes)	Private Management						
	2005	2006	2007	2008	2009	2010	2011
Reserves	1,943	2,033	2,044	1,824	1,733	1,373	1,353
Resources	3,492	3,945	4,212	4,055	3,876	3,912	4,181
Reserves + Resources	5,435	5,978	6,256	5,879	5,609	5,485	4,181
Mined		278	311	284	242	274	280
Replenished		821	589	-93	-28	150	-1,024
Cumulative Mined		278	589	873	1,115	1,389	1,669
Cumulative Replenished		821	1,410	1,317	1,289	1,439	415
Cum. Net Change		543	821	444	174	50	-1,254

Note: 2011 Resources inclusive of Reserves. Source: RPA Second Report, Table 1.

88. In sum, there is no question that, as of the 29 May 2012 valuation date, a willing buyer would have had every reason to believe that the Colquiri Mine contained more ore than needed to complete the Triennial Plan and operate until the

Para la fecha en que preparamos el Plan Trienal, en 2011, Sinchi Wayra estaba explotando los niveles -365, -405 y -470 de la Mina de Colquiri, y utilizando un área de servicios en el nivel -325 para transportar material pesado hacia el interior de la Mina. Además, Sinchi Wayra ya había adelantado actividades de exploración y desarrollo a -535, -600 y -665 metros de la superficie, las cuales nos habían permitido encontrar recursos minerales y probar reservas para varios años de actividades. También sabíamos que las vetas no se iban a angostar al menos hasta los -665 metros de la superficie, donde ya habíamos determinado con taladros de diamantina que la potencia de las vetas era la misma y la ley de cabeza se mantenía constante (es decir, las características técnicas de las vetas en los niveles -365, -405 y -470 que estábamos explotando eran las mismas que al menos hasta los -665 metros de la superficie). Por tanto, dado el método de evaluación de reservas y recursos conocido como “uso y reposición” (en inglés, *use and replenish*) que usábamos en la Mina de Colquiri, teníamos confianza en que la vida de la Mina de Colquiri excedería el plazo del Contrato de Arrendamiento y no habría problemas en reponer las reservas necesarias para sostener los niveles de extracción proyectados en el Plan Trienal. De hecho, el Plan Trienal preveía invertir casi US\$4 millones en tres años de campañas adicionales de exploración para descubrir nuevos recursos y reponer las reservas.

expiration of the Colquiri Lease in 2030. Furthermore, a public statement made after the valuation date by [REDACTED] confirms this fact. In 2015, [REDACTED] confirmed that the Mine had sufficient ore to operate for another 15 years (*ie*, until 2030), and that [REDACTED] expected that time horizon to increase to 40 years based on exploration studies then underway.¹⁹⁴

89. With regard to the Colquiri Tailings Plant, Bolivia’s experts, Quadrant and SRK do not address RPA’s projection (adopted by Compass Lexecon) that the old tailings would have contained 9.2 million tonnes of ore. RPA bases its projections on the ore estimates contained in the 2004 Feasibility Study, which RPA has reviewed and considers reliable.¹⁹⁵ A willing buyer reviewing the projections for the Tailings Plant in May 2012 (the valuation date) would have had no reason to reach a different conclusion. Those estimates were prepared by a third-party consultant and reviewed and adopted by Comsur in the 2004 Feasibility Study, and further scrutinized by the aforementioned Pincock Report, and Glencore Bermuda in 2004 and 2005.¹⁹⁶ Like RPA, each of those three entities concluded that the projections were reliable, and Comsur and Glencore Bermuda made investments in the Tailings Plant on that basis.¹⁹⁷ Moreover, Comibol recently announced that it plans to construct a new concentrator to process the old tailings, just as Glencore Bermuda planned to do, confirming that, contrary to SRK’s

¹⁹⁴ “Empresa Minera Colquiri proyecta 40 años de vida útil,” *Minería Noticias*, June 2006, **C-312**, p 2. [REDACTED] confirmed this statement in 2017. *See* Second Expert Report of RPA, para 40; Ministry of Mining and Metallurgy, “Colquiri descubre tres nuevas vetas de minerales”, 14 June 2017, **RPA-42**, p 2.

¹⁹⁵ Second Expert Report of RPA, para 120; Feasibility Study of the Colquiri Tailings Project, December 2003, **C-61**, pp 22-28, 32, 133-134.

¹⁹⁶ Second Expert Report of RPA, para 20(c)(i), 119-120; Feasibility Study of the Colquiri Tailings Project, December 2003, **C-61**; Colquiri, Colquiri Old Tailings Project, Business Plan, March 2004, **RPA-49**; Old Tailings Colquiri Project, 2005, **C-161**; Pincock, Allen & Holt, Colquiri Tailings Project, Final Report, 5 November 2004, **RPA-12**; Pincock, Allen & Holt, Minera Resource and Reserve Review, Chapter 3, Colquiri Mine, 2 November 2004, **C-309**.

¹⁹⁷ Second Expert Report of RPA, paras 121-122. *See* Section III.A.1.b.i.

assertions, Bolivia itself believes that it makes sense economically to reprocess Colquiri's old tailings.¹⁹⁸

90. In relation to head grades, RPA reviewed the head grades for the Colquiri Mine that are projected in the Triennial Plan (1.29% tin and 7.52% zinc) and confirmed that they are reasonable because, among other reasons, they are consistent with the actual head grades of the ore that the Concentrator Plant processed from 2006 to 2012.¹⁹⁹ SRK's assertion that RPA's projected head grades (adopted by Compass Lexecon) should be reduced to bring them in line with the historical difference between the Mine's reserve grades and actual mined head grades is misplaced.²⁰⁰ RPA agrees with SRK that Colquiri's actual mined head grades were approximately 7% lower than its reserve grades.²⁰¹ But SRK fails to recognize that the head grades estimated in the Triennial Plan already include this 7% discount,²⁰² so no additional discount should be applied to RPA's projected head grades.
91. Likewise, SRK's assertion that RPA's projections should be reduced because of an alleged downward trend in Colquiri head grades over time, based solely on "a personal discussion with [REDACTED]"²⁰³ misconstrues

¹⁹⁸ Second Expert Report of Compass Lexecon, para 41; Second Expert Report of RPA, para 123; "Firman contrato para la construcción de la Planta Concentradora de Colquiri," *Éxito Noticias*, 15 April 2019, C-334, p 2; "Comibol push through issues to ramp up production," *International Tin Association*, 20 May 2019, C-335.

¹⁹⁹ Second Expert Report of RPA, paras 67, 72.

²⁰⁰ *Ibid*, paras 73-76.

²⁰¹ *Ibid*, para 72.

²⁰² *Ibid*, para 72.

²⁰³ Expert Report of SRK, para 62. Also, SRK notes that its expert, Neal Rigby, participated in site visits to the Colquiri Mine between 8-12 October 2017 and had "extensive interactive discussions" with Colquiri management, while RPA "did not avail itself of an opportunity to visit the sites". See Expert Report of SRK, para 22. This is irrelevant. In light of the exhaustive historical information and supporting documentation available about the operations of the Colquiri Mine until Glencore Bermuda lost its control, there was no need for RPA to visit the Mine almost six years after it was nationalized and operated by State-owned Empresa Minera Colquiri. SRK simply received statements from mine employees, without any factual evidence supporting them, that are of no weight as compared to the contemporaneous data and documents on which RPA relies.

the facts. As RPA explains in its Second Expert Report, the Colquiri Mine's head grades have varied over time, but are not trending downward.²⁰⁴ From 2005 to May 2012, the Colquiri Mine's average tin grade has remained consistent and average zinc grade has increased slightly.²⁰⁵ Further, ore grade has been demonstrated to increase with depth at Colquiri, and, as a result, it is reasonably likely that average head grades would have increased over the life of the Colquiri Lease as the Mine expanded to new depths.²⁰⁶

92. With regard to the head grades for the Tailings Plant, RPA reviewed the projections of the 2004 Feasibility Study (0.51% tin and 4.21% zinc) and confirmed that they are reasonable.²⁰⁷ On this basis, Compass Lexecon adopts these same head grades for the Tailings Plant.²⁰⁸ As previously explained, the reasonableness of these head grades is further confirmed by the fact that the 2004 Feasibility Study also was reviewed by Comsur, the Pincock Report and Glencore Bermuda (in 2004 and 2005) and found to be reasonable.²⁰⁹ SRK reports that Government employees told it that the head grades of the old tailings could be 50% lower than projected.²¹⁰ SRK concedes that this is "unlikely," but, without citing any support, maintains that RPA's projections could be high.²¹¹ In its Second Expert Report, RPA confirms that SRK's baseless objection does not merit a revision to its head grade projections.²¹²

²⁰⁴ Second Expert Report of RPA, para 76, Figure 3.

²⁰⁵ *Ibid.*

²⁰⁶ *Ibid.*, para 77, Figure 4.

²⁰⁷ *Ibid.*, para 141.

²⁰⁸ Second Expert Report of Compass Lexecon, para 43.

²⁰⁹ Second Expert Report of RPA, para 143; Feasibility Study of the Colquiri Tailings Project, December 2003, **C-61**; Colquiri, Colquiri Old Tailings Project, Business Plan, March 2004, **RPA-49**; Old Tailings Colquiri Project, 2005, **C-161**; Pincock, Allen & Holt, Colquiri Tailings Project, Final Report, 5 November 2004, **RPA-12**, p 1.

²¹⁰ Expert Report of SRK, para 88.

²¹¹ *Ibid.*

²¹² Second Expert Report of RPA, para 142.

iii The Colquiri expansion was technically feasible

93. Bolivia's expert, Quadrant's, valuation of Colquiri assumes (contrary to the weight of the evidence in the arbitration) that Glencore Bermuda would not have expanded the Colquiri Mine and Concentrator Plant or built the Tailings Plant. Quadrant's assumption is based on SRK's unsupported assertions that it was not technically and practically feasible to expand Colquiri and build the Tailings Plant.²¹³ SRK's assertions should be rejected.
94. SRK's opinion is inconsistent with the fact that the Colquiri expansion plans were not technically complex by the standards of the mining industry.²¹⁴ Glencore Bermuda's witness, Mr Lazcano, explains in detail how Glencore Bermuda intended to expand Colquiri, and why those plans were technically reasonable.²¹⁵ RPA confirms the technical feasibility of these plans.²¹⁶
95. To increase the rate at which ore could be extracted from the Colquiri Mine, Glencore Bermuda was simply building a new ramp within the mine (referred to as the "Main Ramp") by which trucks would have hauled ore to the surface.²¹⁷ As RPA confirms, this is a low-tech solution that had been contracted to be implemented in less than two years and would have doubled the rate at which ore could be extracted from the Mine from 390,000 tonnes of ore per year in 2013 to over 600,000 tonnes of ore per year in 2014 (*ie*, more capacity than was needed

²¹³ Expert Report of SRK, paras 18, 19; Expert Report of Quadrant, paras 43, 45.

²¹⁴ Second Expert Report of RPA, para 20(a), 20(b)(ii), 20(c)(i), 20(d); *See also* Third Witness Statement of Eduardo Lazcano, Section IV.

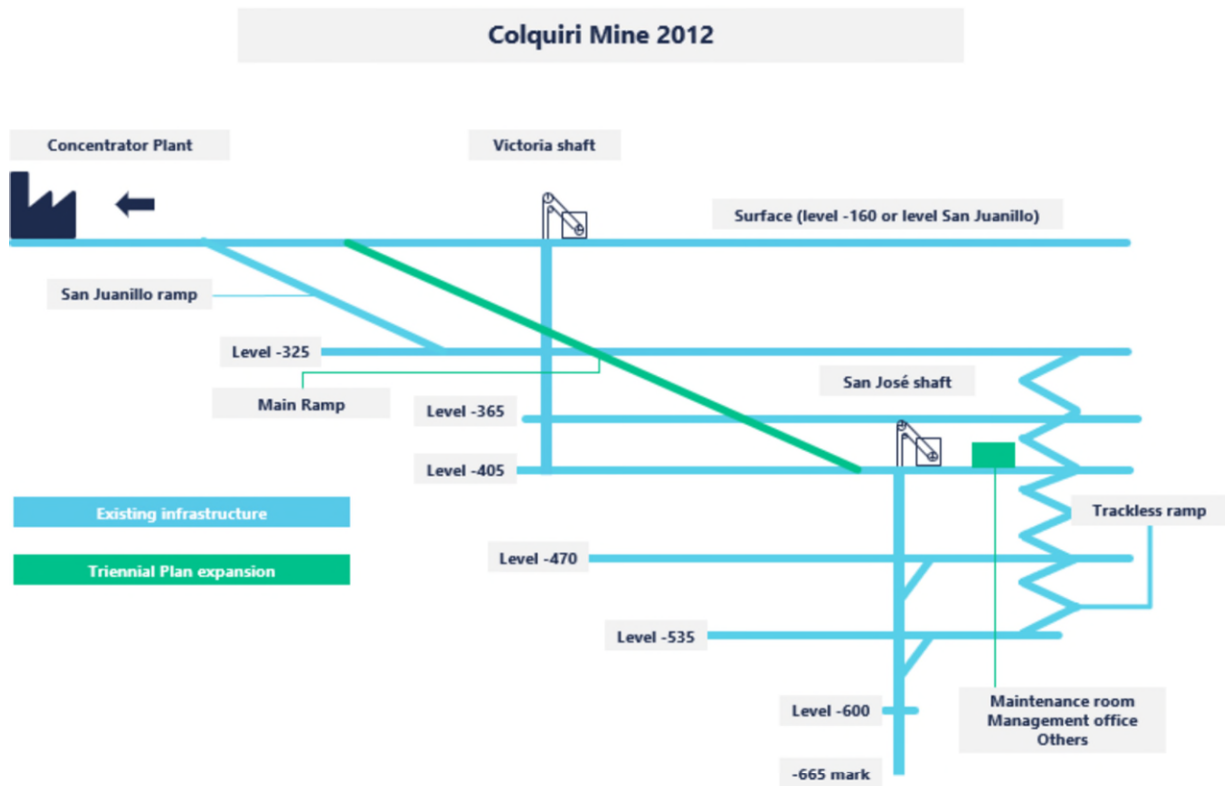
²¹⁵ *Ibid*, Section IV.

²¹⁶ Second Expert Report of RPA, para 24, 53, 62, 121.

²¹⁷ *Ibid*, para 55, 57; First Witness Statement of Eduardo Lazcano, p 25; Third Witness Statement of Eduardo Lazcano, paras 16(a), 18, 27, 29-39; Alternatives for the expansion of the Colquiri Mine, Sinchi Wayra, July 2011, **C-321**, pp 3, 6-27, 39-43; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, p 151 (unofficial English translation from Spanish original); Construction contract between Colquiri and Arcal Mineros, 14 March 2012, **C-325**, p 1.

under the Triennial Plan).²¹⁸ Contrary to SRK’s assertion,²¹⁹ until the ramp was completed in 2014, the Mine’s existing infrastructure would have been sufficient to support the extraction levels projected in the Triennial Plan.²²⁰

96. Given that the Colquiri Mine is shallow by the standards for underground mines (ie, 535 meters deep at the time of the taking), building the Main Ramp was the most cost-efficient solution to expand the Mine’s infrastructure.²²¹ The project’s simplicity is depicted in the graphic below:



²¹⁸ Second Expert Report of RPA, para 57, 64; Third Witness Statement of Eduardo Lazcano, paras 31-33; Alternatives for the expansion of the Colquiri Mine, Sinchi Wayra, July 2011, C-321, pp 3, 6-27, 39-43.

²¹⁹ Second Expert Report of SRK, para 56.

²²⁰ Second Expert Report of RPA, para 56; Third Witness Statement of Eduardo Lazcano, para 34.

²²¹ Second Expert Report of RPA, para 57. Underground mines often exceed 1,000 meters in depth and can exceed 2,000 meters in depth. Underground mines like Colquiri that are less than approximately 500 meters in depth are considered shallow mines.

97. In fact, after taking over the Mine in 2012, Comibol decided to complete the construction of the same ramp in order to expand the output of the Mine (just as Glencore Bermuda planned).²²²
98. Likewise, to expand the Concentrator Plant and build the Tailings Plant, Glencore Bermuda planned to use equipment that is standard, modern processing equipment. For example, Glencore Bermuda planned to replace the Concentrator Plant’s mill (for grinding the ore) and, as explained above, had already purchased new “flotation cells” for separating tin and zinc from the ore, and had budgeted to purchase “thickening tanks” to manage the water used in the concentrating process.²²³
99. SRK’s opinion that the Colquiri expansion was not technically feasible also is inconsistent with the fact that the expansion was based on detailed technical documents—the 200-page Triennial Plan and the 2004 Feasibility Study—that were prepared with the input of third-party technical experts, and that Sinchi Wayra technicians further developed those plans after Glencore Bermuda approved the expansion.²²⁴ Contrary to SRK’s assertion that RPA did not consider the water and electricity needed for the expansion, the Triennial Plan and 2004 Feasibility Study provided for the water that was to be consumed by the expanded Concentrator Plant and the Tailings Plant.²²⁵ The water was to be sourced from Colquiri’s tailings storage facilities (as was the practice as of May 2012), and the

²²² *Ibid.*, para 57; [REDACTED] paras 48-49.

²²³ *See* Section III.A.1.c.i; Second Expert Report of RPA, paras 80, 81, 82, 167; First Witness Statement of Eduardo Lazcano, para 24; Third Witness Statement of Eduardo Lazcano, paras 46-48.

²²⁴ Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**; Feasibility Study of the Colquiri Tailings Project, December 2003, **C-61**; Third Witness Statement of Eduardo Lazcano, Section III; Second Expert Report of RPA, paras 20(c)(i), 25.

²²⁵ Expert Report of SRK, para 57; Second Expert Report of RPA, paras 165-167; Third Witness Statement of Eduardo Lazcano, paras 49-52; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, pp 62-63, 93, 97, 94; 2004 Colquiri Tailings Project FS Water Balance (Modified by RPA), **RPA-58**; 2012 Minav Ingenieria & Construccion, 2012, Informe Batimetría Dique de Colas Colquiri, 14/02/2012 Dique de Colas Colquiri, prepared for Sinchi Wayra S.A., March 2012, **RPA-83**.

- installation of the aforementioned thickening tanks would have recycled water used in the concentrating process.²²⁶
100. Similarly, the Triennial Plan provided for the installation of an additional 2.3 megawatts of power generating capacity, which would have increased Colquiri's aggregate power which would have been sufficient power to process over 5,300 tonnes of ore and tailings a day (*ie*, at least 300 tonnes more material than would have been processed by the expanded Concentrator Plant and Tailings Plant combined).²²⁷ RPA has reviewed these plans and agrees that there would have been enough water and electricity, and that it otherwise would have been technically feasible to operate the expanded Mine and Concentrator Plant and the Tailings Plant.²²⁸
101. The Triennial Plan and 2004 Feasibility Study also estimated metallurgical recovery rates for the concentrating processes in the expanded Concentrator and Tailings Plants (*ie*, the percentage of the minerals in the ore and tailings that would be converted to concentrate).²²⁹ As noted above, RPA bases its projections on these rates, which it reviewed and considers reasonable.
102. SRK asserts that the average recovery rates provided in the Triennial Plan (72% for tin and 76% for zinc) are too high and should be reduced to 66% for tin and 69% for zinc in light of the Concentrator Plant's average historical recovery rates from 2007 to 2012.²³⁰ However, SRK excluded the historical recovery rates for

²²⁶ Second Expert Report of RPA, para 165; Third Witness Statement of Eduardo Lazcano, para 52; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, pp 62-63, 93, 94, 97; 2004 Colquiri Tailings Project FS Water Balance (Modified by RPA), **RPA-58**; 2012 Minav Ingenieria & Construcción, 2012, Informe Batimetría Dique de Colas Colquiri, 14/02/2012 Dique de Colas Colquiri, prepared for Sinchi Wayra S.A., March 2012, **RPA-83**.

²²⁷ Second Expert Report of RPA, paras 168-170; Third Witness Statement of Eduardo Lazcano, paras 49-52; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, p 68.

²²⁸ Second Expert Report of RPA, para 171.

²²⁹ *Ibid*, paras 79, 80, 154; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, p 88; Feasibility Study of the Colquiri Tailings Project, December 2003, **C-61**, pp 57-58.

²³⁰ Expert Report of SRK, paras 66, 79, 92.

2005-2006—when recovery rates were on par with the Triennial Plan’s tin recovery rate—from its average,²³¹ and SRK does not recognize that the Triennial Plan’s zinc recovery rate was surpassed in 2007.²³² Further, as RPA explains, the Triennial Plan included sufficient capital improvements in the Concentrator Plant in order to reach and sustain the projected recovery rates.²³³ In fact, actual tin recovery rates at the Colquiri Mine between 2012 to 2015, under the operation of State-owned Empresa Minera Colquiri, averaged 72% (the same rate projected by RPA),²³⁴ and Comibol’s own expansion plans at the Colquiri Mine are in line with RPA’s recovery assumptions.²³⁵

103. SRK speculates that the average recovery rates provided in the 2004 Feasibility Study (51% for tin and 65% for zinc) also could be too high, because the ore in the old tailings is lower in grade as compared to the ore in the Mine and lower grades allegedly lead to lower recoveries.²³⁶ This is incorrect. As RPA explains, the recovery rates provided in the 2004 Feasibility Study were established through laboratory tests that Comsur conducted on the actual tailings, and SRK has not identified a reason why this test work is not authoritative.²³⁷ Moreover, as indicated above,²³⁸ Comibol recently announced that it plans to construct a new concentrator to process the old tailings, just as Glencore Bermuda planned to do,

²³¹ Second Expert Report of RPA, para 84.

²³² *Ibid*, para 80.

²³³ *Ibid*.

²³⁴ *Ibid*, para 84.

²³⁵ *See, eg*, Comprehensive Technical Economic Social and Environmental Study (TESA) for the Design of the New Mineral Concentration Plant with capacity 2000 tdp, Executive Summary, June 2015, **R-35**, p 3; Second Expert Report of RPA, para 84.

²³⁶ Expert Report of SRK, para 92.

²³⁷ Second Expert Report of RPA, para 154.

²³⁸ *See* Section III.A (introduction).

confirming that Bolivia itself believes that reprocessing the old tailings at the Tailings Plant is technically and economically feasible.²³⁹

d. Glencore Bermuda's estimated capital expenditures are reasonable

i Glencore Bermuda's estimated CAPEX to expand the Colquiri Mine and Concentrator Plant is reasonable

104. Claimant's expert, RPA, has reviewed and confirmed the Triennial Plan's CAPEX projections.²⁴⁰ Those projections include US\$43.8 million to expand the Colquiri Mine and Concentrator Plant, and an additional US\$29 million in sustaining capital for the period of 2012-2014.²⁴¹ Based on the sustaining capital for 2014, RPA projects average sustaining capital of US\$7.4 million a year for 2015 through 2030.²⁴² As a result, RPA projects that Colquiri would have had capital expenditures of US\$181.7 million between 2012 and the end of the Colquiri Lease in 2030—US\$43.8 in expansion capital and US\$137.9 million in sustaining capital through May 2030.²⁴³ Compass Lexecon adopts RPA's CAPEX projections.²⁴⁴
105. In contrast, Bolivia's mining expert, SRK assumes that Glencore Bermuda would not have expanded the Colquiri Mine and Concentrator Plant, and does not offer an alternative to RPA's projections of the CAPEX for the expansion and for

²³⁹ Second Expert Report of Compass Lexecon, para 41; Second Expert Report of RPA, para 123; "Firman contrato para la construcción de la Planta Concentradora de Colquiri," *Éxito Noticias*, 15 April 2019, **C-334**, p 2; "Comibol push through issues to ramp up production," *International Tin Association*, 20 May 2019, **C-335**.

²⁴⁰ Second Expert Report of RPA, paras 100, 105.

²⁴¹ *Ibid.*, paras 20(b)(vii), 102; Colquiri Mine Three Year Plan 2012-2014, July 2011, **C-108**, pp 100-104, 118-119.

²⁴² Second Expert Report of RPA, para 102.

²⁴³ *Ibid.* RPA projects approximately US\$29 million in sustaining capital for the period 2012-2015, and an average of an additional US\$6.8 million per year from 2015 onward. 2020 RPA Model, January 2020, **RPA-55**, "Capex," D15-V15.

²⁴⁴ Second Expert Report of Compass Lexecon, paras 35-37.

sustaining the expanded Mine and Concentrator Plant.²⁴⁵ SRK simply estimates the cost of sustaining the Colquiri Mine and Concentrator Plant at the level it was operating in 2011.²⁴⁶ As a result, SRK's estimates are irrelevant to the CAPEX of the expanded Mine. Bolivia's valuation expert, Quadrant, adopts these estimates.²⁴⁷

106. Even if SRK's estimates were relevant to the CAPEX for the expanded Mine (which they are not), SRK's estimates are not reliable.²⁴⁸ SRK's sustaining capital estimate of US\$5 million a year is actually lower than RPA's own estimate.²⁴⁹ However, SRK also includes US\$25 million of CAPEX for 2012 to 2016 that it refers to as "catchup capital."²⁵⁰ SRK does not explain how those funds would be spent and assumes without explanation that the investment of this US\$25 million would not increase Colquiri's productivity.²⁵¹ Quadrant, relying on SRK, only states that this CAPEX is intended to address alleged "under-investments" at the Mine.²⁵² As RPA and CLEX explain, it is unlikely that a company would invest US\$25 million in a mine if it did not contribute to productivity.²⁵³

ii Glencore Bermuda's estimated CAPEX to construct the Tailings Plant is reasonable

107. Claimant's expert, RPA, projects US\$30.5 million in CAPEX to construct the Tailings Plant.²⁵⁴ Its projection is based on an estimate of US\$19.5 million

²⁴⁵ Expert Report of SRK, para 67-68; Second Expert Report of RPA, para 103.

²⁴⁶ Expert Report of SRK, para 79.

²⁴⁷ *Ibid*; Expert Report of Quadrant, para 44.

²⁴⁸ Second Expert Report of RPA, para 104.

²⁴⁹ *Ibid*.

²⁵⁰ Expert Report of SRK, para 79.

²⁵¹ *Ibid*.

²⁵² Expert Report of Quadrant, para 44.

²⁵³ Second Expert Report of RPA, paras 20(b)(vii), 104; Second Expert Report of Compass Lexecon, para 37.

²⁵⁴ First Expert Report of RPA, paras 37, 61, 153, Table 9, 191; Second Expert Report of RPA, para 184.

- (excluding working capital) in the 2004 Feasibility Study, which RPA has reviewed and updated from 2004 to the date of valuation—29 May 2012.²⁵⁵ Compass Lexecon has adopted this projection and added average sustaining CAPEX of US\$1.9 million per year for the maintenance of the Tailings Plant’s operations.²⁵⁶
108. Quadrant assumes that Glencore Bermuda would not have built the Tailings Plant, but does not contest Compass Lexecon’s CAPEX projections for the Plant or provide an alternative figure.²⁵⁷
- iii Glencore Bermuda’s CAPEX to expand Colquiri’s tailings storage capacity, and for mine reclamation and closure costs is reasonable*
109. The Parties disagree on two categories of CAPEX that affect Colquiri as a whole: CAPEX relating to the construction of storage for the new tailings that would have been produced by the expanded Concentrator Plant and the Tailings Plant, and CAPEX relating to closing the Mine when the Colquiri Lease expired in 2030. Claimant’s expert, Compass Lexecon’s DCF model includes both categories of CAPEX.²⁵⁸
110. Over its long operating history, Colquiri has constructed three tailings storage facilities to store the tailings created by the process of converting ore to mineral concentrate. As of 2012 (and still today), Colquiri was using the third tailings storage facility to store the tailings created by the Mine.²⁵⁹ In its First Expert Report, RPA projected US\$6.4 million of CAPEX to pay for the expansion of the third tailings storage facility to store the tailings that would be produced by the

²⁵⁵ Colquiri Tailings Project Capital Cost Estimate, April 2005, **RPA-15**, cell 340H minus cell 333H; First Expert Report of RPA, paras 37, 153; Second Expert Report of RPA, para 184.

²⁵⁶ Second Expert Report of Compass Lexecon, para 38; Compass Lexecon Colquiri’s Valuation, Undated, **CLEX-4**, “CAPEX,” row 41.

²⁵⁷ Expert Report of Quadrant, paras 45-46; Expert Report of SRK, para 95.

²⁵⁸ Second Expert Report of Compass Lexecon, paras 35, 43(a); Compass Lexecon Updated Colquiri Valuation, Undated, **CLEX-040**, “CAPEX,” rows 27, 41, 44.

²⁵⁹ Third Witness Statement of Eduardo Lazcano, para 19; Second Expert Report of RPA, para 172.

expanded Mine and Tailings Plant.²⁶⁰ In its Expert Report, Bolivia’s expert, SRK, asserted that, in addition to expanding the existing tailings storage facility, a new tailings storage facility eventually would have been needed to house the tailings produced by the planned expansion.²⁶¹ In its Second Expert Report, RPA has added US\$5.9 million of CAPEX for an additional expansion of the third tailings storage facility and the construction of a fourth tailings storage facility by 2024 to ensure ample tailings storage for the expanded Mine and Tailings Project.²⁶² Compass Lexecon has adopted these US\$5.9 million of additional CAPEX projections in its valuation.²⁶³

111. In relation to the costs for closing the mine, Claimant’s expert, RPA explains that it is unlikely that Colquiri would have stopped operating in 2030 at the expiration of the Colquiri Lease.²⁶⁴ Given the geological profile of the Colquiri deposit, there likely would have been ample mineral resources to continue operations beyond 2030.²⁶⁵ As a result, Glencore Bermuda most likely would *not* have incurred closure costs at the termination of the Colquiri Lease.²⁶⁶ The Colquiri Lease would have been extended or the Mine exploited by the Government.²⁶⁷ Nonetheless, in the unlikely event that operations terminated on 2030, in its First Expert Report RPA projected CAPEX of US\$4.3 million for reclamation and closure costs,²⁶⁸ and Compass Lexecon included that CAPEX in its valuation.²⁶⁹

²⁶⁰ See First Expert Report RPA, para 125, Tables 5, 6; Second Expert Report of RPA, para 177, Footnote 262.

²⁶¹ Expert Report of SRK, para 94.

²⁶² “Colquiri Tailings Management Forecast,” Sinchi Wayra presentation, January 2011, **C-320**, p 3.

²⁶³ Second Expert Report of Compass Lexecon, para 43(a).

²⁶⁴ Second Expert Report of RPA, paras 20(d)(iii), 188; First Expert Report of RPA, para 53.

²⁶⁵ Second Expert Report of RPA, paras 20(d)(iii), 188; First Expert Report of RPA, para 53.

²⁶⁶ Second Expert Report of RPA, paras 20(d)(iii), 188; First Expert Report of RPA, para 53.

²⁶⁷ For example, [REDACTED], stated in 2015 that the Mine could have a 40-year life. See Ministry of Mining and Metallurgy, “Colquiri descubre tres nuevas vetas de minerales”, 14 June 2017, **RPA-42**.

²⁶⁸ First Expert Report of RPA, para 53.

112. RPA's projected reclamation and closure costs included US\$3.3 million for the Mine and Concentrator Plant²⁷⁰ and US\$1 million for the Tailings Plant.²⁷¹ Bolivia's expert, SRK, asserts that these closure costs should be nearly doubled to US\$8 million.²⁷² SRK does not provide justification for this significant increase other than its unsupported statements that the Mine is large and would be old by the time it is closed.²⁷³ As RPA explains in its Second Report, SRK's assertion does not merit a modification in RPA's projected closure costs.²⁷⁴ RPA bases its projections on a report prepared in 2010 for Sinchi Wayra by an internationally respected engineering firm, WorleyParsons.²⁷⁵ RPA considers that independent report to be technically sound.²⁷⁶ Moreover, a contemporaneous independent report is more persuasive than the unsupported statement of SRK, which was made for this arbitration.

e. Glencore Bermuda's estimated operating expenditures are reasonable

113. To extract and process ore at its forecasted levels, Claimant's expert, RPA, projects that the expanded Colquiri Mine and Concentrator Plant would have incurred OPEX of US\$57.97 per tonne of ore in 2012, and that OPEX would decrease to US\$47.67 per tonne of ore by 2014.²⁷⁷ RPA bases its OPEX projections on estimates in the Triennial Plan, which RPA confirmed are reasonable and consistent with Colquiri's average historical operating costs.²⁷⁸

²⁶⁹ Compass Lexecon Updated Colquiri Valuation, Undated, **CLEX-040**, "CAPEX," rows 27, 44.

²⁷⁰ First Expert Report of RPA, paras 53, 182.

²⁷¹ *Ibid*, paras 62, 192.

²⁷² Expert Report of SRK, para 72.

²⁷³ *Ibid*.

²⁷⁴ Second Expert Report of RPA, paras 20(d)(iii), 187-190.

²⁷⁵ Worley Parsons, Validation of Site Closure Cost Estimates, prepared for Glencore International/Sinchi Wayra, 15 December 2010, **RPA-27**, p 2; Second Expert Report of RPA, paras 20(d)(iii), 187-190.

²⁷⁶ Second Expert Report of RPA, para 188.

²⁷⁷ First Expert Report of RPA, paras 50, 179; Second Expert Report of RPA, paras 20(b)(v), 87.

²⁷⁸ First Expert Report of RPA, para 174; Second Expert Report of RPA, paras 20(b)(v), 87.

The reduction in OPEX between 2012 and 2014 is due to the economies of scale that Colquiri would have gained as throughput increased at the Colquiri Mine and Concentrator Plant, as well as the decrease in haulage costs that would have resulted from the construction of the Main Ramp in the Mine.²⁷⁹ Claimant's expert, Compass Lexecon adopts these OPEX projections in its Colquiri valuation.²⁸⁰

114. In contrast, Bolivia's expert, Quadrant, calculates OPEX by cherry-picking Colquiri's OPEX for 2011, which was US\$57.63 per tonne of ore, and applying a 23% mark-up.²⁸¹ Quadrant's position is contrary to the facts in the record and basic principles of the economics. As RPA and Compass Lexecon explain, Colquiri's OPEX was unusually high in 2011—well above the average of US\$50.33 per tonne of ore between 2006 and 2012—and therefore is not a good measure of Colquiri's anticipated OPEX as of the date of valuation (29 May 2012).²⁸² In addition, Quadrant's 23% mark-up of the 2011 OPEX figure further distorts its OPEX calculation.
115. Quadrant alleges that its mark-up is necessary, because between 2006 and 2011 Colquiri's actual OPEX typically exceeded its budgeted OPEX by 23%.²⁸³ However, Compass Lexecon's projected OPEX numbers are consistent with Colquiri's *actual* average OPEX of US\$50.33 per tonne of ore between 2006 and 2012 and, as a result, no adjustment is necessary.²⁸⁴ In addition, the risk that cost

²⁷⁹ Second Expert Report of RPA, paras 20(b)(v), 87, 89-91; First Expert Report of RPA, para 179.

²⁸⁰ Second Expert Report of Compass Lexecon, para 48.

²⁸¹ Expert Report of Quadrant, paras 69, 72, 74-75.

²⁸² Second Expert Report of RPA, para 88. *See also* Second Expert Report of Compass Lexecon, para 51; Sinchi Wayra Management Report, December 2006, **CLEX-11-10**; Sinchi Wayra Monthly Report, December 2008, **CLEX-11-11**; Sinchi Wayra Monthly Report, December 2011, **CLEX-11-12**; Sinchi Wayra Monthly Report, December 2012, **CLEX-11-13**.

²⁸³ Expert Report of Quadrant, para 75.

²⁸⁴ Second Expert Report of Compass Lexecon, para 51. *See also* Sinchi Wayra Management Report, December 2006, **CLEX-11-10**, p 12; Sinchi Wayra Monthly Report, December 2008, **CLEX-11-11**, pp 8, 16, 24; Sinchi Wayra Monthly Report, December 2011, **CLEX-11-12**, p 10; Sinchi Wayra Monthly Report, December 2012, **CLEX-11-13**, p 7.

- projections may vary from actual costs is addressed by Colquiri's discount rate and should not be addressed by a further mark-up of the OPEX numbers.²⁸⁵
116. Quadrant's OPEX estimate also is premised on the untenable view—which is contrary to all literature on the subject—that Colquiri would not have benefited from economies of scale.²⁸⁶ As RPA has explained, several of Colquiri's operating costs were fixed costs—*eg*, salaries of management and administrative staff, building operations and maintenance, insurance—that would not have fluctuated with the output of the Mine and Concentrator Plant.²⁸⁷ As a result, consistent with Compass Lexecon's DCF for Colquiri, a willing buyer would have expected to reap economies of scale as Colquiri's productivity increased.²⁸⁸
117. In relation to the Tailings Plant, to produce at its forecasted levels, RPA projects that the Tailings Plant would have incurred OPEX of US\$13.2 per tonne of tailings processed.²⁸⁹ RPA bases this projection on the 2004 Feasibility Study's estimated OPEX of US\$7.2 per tonne of tailings.²⁹⁰ RPA adjusted this 2004 estimate upward to account for inflation between 2004 and 2012.²⁹¹ Compass Lexecon adopts RPA's OPEX projection in its Colquiri DCF.²⁹²

²⁸⁵ Second Expert Report of Compass Lexecon, para 50.

²⁸⁶ *Ibid*, para 52; Expert Report of Quadrant, paras 68, 73-75.

²⁸⁷ Second Expert Report of RPA, para 90.

²⁸⁸ Second Expert Report of Compass Lexecon, para 52. Quadrant also asserts that OPEX costs associated with Colquiri's expansion into greater depths of the mine would have offset any benefits from economy of scale. Expert Report of Quadrant, para 73. However, as RPA explains, due to the construction of the new ramp inside the mine (among other factors) it would not have been comparatively more expensive to extract ore from the deeper areas of the Mine. Second Expert Report of RPA, para 97.

²⁸⁹ First Expert Report of RPA, para 190; Second Expert Report of RPA, paras 135, 140.

²⁹⁰ First Expert Report of RPA, para 190; Second Expert Report of RPA, paras 135, 140; Feasibility Study of the Colquiri Tailings Project, December 2003, C-61, pp 135-138.

²⁹¹ Second Expert Report of RPA, para 135.

²⁹² Second Expert Report of Compass Lexecon, para 48; First Expert Report of Compass Lexecon, para 57.

118. Bolivia's experts do not propose an alternative OPEX cost for the Tailings Plant. SRK asserts, however, that RPA's OPEX projections underestimate the cost of processing the old tailings and that the Tailings Plant's OPEX should be closer to the OPEX for the Concentrator Plant.²⁹³ Bolivia's expert is wrong. As RPA explains, the OPEX for the Tailings Plant should be significantly lower than the OPEX for the Concentrator Plant, because the Tailings Plant would simply reprocess tailings, which had previously been crushed and ground, whereas the Concentrator Plant would have processed fresh ore, which requires more processing.²⁹⁴ In addition, the Tailings Plant was an entirely new plant and was projected to process three times more volume per day than the Concentrator Plant processed prior to its expansion (3,000 tonnes of tailings a day versus 1,000 tonnes of ore a day), so the Tailings Plant would have benefited from more significant economies of scale.²⁹⁵

f. Glencore Bermuda's general and administrative costs are reasonable

119. Claimant's expert, Compass Lexecon, projects that Colquiri's average G&A costs would be US\$2 million per year.²⁹⁶ Compass Lexecon calculates this cost based on the G&A costs reported in Colquiri's financial statements (eg, US\$2.3 million for 2011) and Sinchi Wayra's monthly reports (eg, US\$2.1 million for 2011).²⁹⁷ In contrast, Quadrant calculates that G&A costs would be over US\$19 million a year—almost ten times Colquiri's historical G&A costs.

120. Quadrant inappropriately inflates Colquiri's G&A costs in at least two ways. *First*, although G&A costs largely consist of fixed administrative costs, Quadrant

²⁹³ Expert Report of SRK, para 87.

²⁹⁴ Second Expert Report of RPA, paras 137-138, 140.

²⁹⁵ *Ibid*, paras 137-140; Second Expert Report of Compass Lexecon, para 43(c); First Expert Report of RPA, paras 30, 129; First Expert Report of Compass Lexecon, para 56; Colquiri Tailings Project, internal presentation, Undated, **RPA-14**, slide 5.

²⁹⁶ Second Expert Report of Compass Lexecon, para 45-47; Report of Compass Lexecon, para 55.

²⁹⁷ Second Expert Report of Compass Lexecon, para 45-47; Colquiri Financial Statements, 2001-2012, **CLEX-8-1** to **CLEX-8-11**.

calculates G&A as 11.2% of revenues, thereby increasing G&A disproportionately as Colquiri expands and increases its revenue.²⁹⁸ *Second*, Quadrant includes OPEX costs, such as royalties and other taxes, in G&A, which has the effect of inflating the G&A costs and double-counting OPEX costs, which are accounted for separately as well.²⁹⁹

2. The fair market value of Vinto

121. In its Second Expert Report, Compass Lexecon calculates the FMV of Vinto to be US\$56 million as of 8 February 2007 using the DCF method.³⁰⁰ Because Glencore Bermuda held 100% of the equity in Vinto and Vinto did not have any outstanding debt, the FMV of Vinto represents the value that Glencore Bermuda lost when Bolivia seized Vinto.³⁰¹
122. The Parties agree that the DCF methodology is an appropriate method by which to calculate Vinto's FMV³⁰² and that the correct valuation date is 8 February 2007—the day before Bolivia issued the Tin Smelter Nationalization Decree and took the Tin Smelter.³⁰³ The Parties further agree that Compass Lexecon has identified the correct variables in its DCF model.³⁰⁴ The Parties disagree, however, as to the value of each variable and the resulting FMV. The Parties' key differences include: (i) production volumes of tin metal (in the form of tin ingots);³⁰⁵ (ii) capital and operating expenses;³⁰⁶ (iii) sales prices for tin ingots;³⁰⁷ and (iv)

²⁹⁸ Second Expert Report of Compass Lexecon, para 45-47; Expert Report of Quadrant, para 77, footnotes 131-132.

²⁹⁹ Second Expert Report of Compass Lexecon, para 45-47; Expert Report of Quadrant, para 77, Footnote 131.

³⁰⁰ Second Expert Report of Compass Lexecon, para 139, Table 10.

³⁰¹ See Statement of Claim, para 256.

³⁰² See Statement of Defense, para 736; Expert Report of Quadrant, para 96.

³⁰³ See Statement of Defense, section 7.3.2; Expert Report of Quadrant, para 98.

³⁰⁴ See Statement of Defense, paras 736, 847; Expert Report of Quadrant, para 96.

³⁰⁵ Statement of Defense, paras 854-867.

³⁰⁶ *Ibid*, paras 868-876.

³⁰⁷ *Ibid*, paras 865, 866.

the discount rate for Vinto.³⁰⁸ The following subsections address the first three topics; the appropriate discount rates for Vinto and Colquiri are addressed in a dedicated Section III.A.3, below. With regard to the other variables of the Vinto DCF, we respectfully refer the Tribunal to Compass Lexecon's Second Expert Report.³⁰⁹

a. Glencore Bermuda's production forecasts for Vinto are reasonable

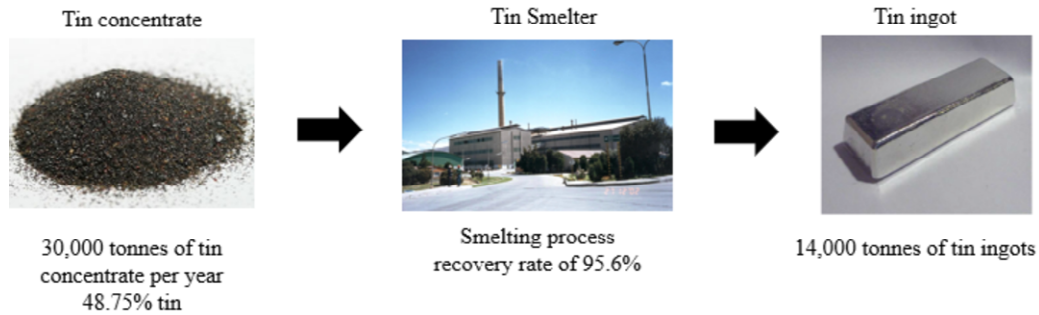
123. Based on the projections in RPA's Expert Reports, Compass Lexecon assumes that, but-for the nationalization, Vinto would have modestly increased the Tin Smelter's processing rate from 25,161 tonnes of tin concentrate in 2006 to 27,500 tonnes in 2007, and from 2008 onwards the Tin Smelter would have processed 30,000 tonnes of tin concentrate a year.³¹⁰ Smelting these volumes of tin concentrate would have resulted in the production of 12,800 tonnes of tin metal in 2007 (from 11,720 tonnes in 2006), and 14,000 tonnes of tin metal a year thereafter, pursuant to RPA's projections that, on average, the tin concentrates that Vinto would have acquired for processing would have had a grade of 48.75% (*ie*, percentage of tin in the concentrate acquired), and the smelting process would have had a recovery rate of 95.6% (*ie*, percentage of the tin in the concentrate converted into tin metal).

³⁰⁸ *Ibid*, paras 849-851, 877-882.

³⁰⁹ These other variables include G&A costs (which Bolivia's expert, Quadrant, inflates by calculating annual G&A costs on the basis of a 15-month period and not a 12-month year), working capital and commercial debt. Second Expert Report of Compass Lexecon, Section II.2.4.

³¹⁰ First Expert Report of Compass Lexecon, para 79, Table 6; First Expert Report of RPA, para 159.

124. The following diagram illustrates how RPA’s production forecasts are calculated:



125. Contrary to Compass Lexecon’s assumptions, Bolivia’s valuation expert, Quadrant, assumes that, in the but-for scenario, the Tin Smelter would not have increased its output and would have continued to process and produce the same volume of tin concentrates and ingots that the Tin Smelter had processed and produced in 2006—*ie*, 25,161 tonnes of tin concentrate a year and 11,720 tonnes of tin metal a year.³¹¹ To justify its position, Quadrant relies on the assertions of Bolivia’s mining expert, SRK, that: (i) the Tin Smelter did not have the capacity to process 30,000 tonnes of tin concentrate a year,³¹² and (ii) there was insufficient tin concentrate available to supply the Tin Smelter at its forecasted processing levels.³¹³ These assertions have no merit.
126. With respect to the Tin Smelter’s capacity, SRK’s assertion is inconsistent with the assessment that Glencore Bermuda completed in 2004 prior to acquiring Vinto that projected a processing capacity of over 30,000 tonnes a year,³¹⁴ and even with a chart included in the witness statement of Bolivia’s own witness, Mr

³¹¹ Expert Report of Quadrant, para 108.

³¹² Statement of Defense, paras 656, 856; First Witness Statement of Ramiro Villavicencio, paras 46-49, 64(b)-(c); Second Witness Statement of Ramiro Villavicencio, para 9; Expert Report of Quadrant, para 107; First Expert Report of SRK, para 100.

³¹³ Statement of Defense, paras 660-661, 858; First Witness Statement of Ramiro Villavicencio, paras 64(a), 66.

³¹⁴ Third Witness Statement of Christopher Eskdale, paras 28, 29, 31. Glencore interoffice report from Mr Vix to Mr Eskdale, 21 November 2004, C-310, p 2.

Villavicencio.³¹⁵ That chart confirms that the three smelting furnaces that Vinto was operating as of February 2007 each had the capacity to process 40 to 50 tonnes of tin concentrates a day or approximately 10,200 to 12,750 tonnes of tin concentrate a year.³¹⁶ On that basis, the Smelter's three furnaces would have had an aggregate processing capacity of 30,600 to 38,250 tonnes of tin concentrate a year—*ie*, up to 28% more than RPA has projected. Indeed, Bolivia's own data shows that from 2012 through 2014 State-owned Empresa Metalúrgica Vinto (*EMV*) reached processing levels similar to those forecasted by Glencore Bermuda—*ie*, processing on average 29,500 tonnes of concentrate per year during this period without expanding the existing infrastructure and using the same smelting furnaces that were operational as of February 2007.³¹⁷ There is thus no basis to claim that RPA's capacity estimates are not achievable.

127. Further, and without prejudice to the above, SRK's assertions ignore the impact of the projects that Glencore Bermuda had implemented and planned to implement, but-for Bolivia's wrongful conduct, which were designed to enable the Tin Smelter to operate at capacity. Comsur had begun these optimization projects and Glencore Bermuda carried them forward in 2005 and 2006 after it purchased the

³¹⁵ First Witness Statement of Ramiro Villavicencio, para 56.

³¹⁶ *Ibid.* According to this chart, each of two functional reverberator furnaces ("Horno de Reverbero") and an electric furnace ("Horno Eléctrico") had the capacity to process 40 to 50 tonnes of concentrates per process and complete approximately one process per processing day. Assuming an operation of 255 processing days per calendar year (*ie*, the actual average days of operation per furnace in 2006), each furnace had the capacity to process between 10,200 to 12,750 tonnes of concentrate per calendar year—a total capacity between 30,600 to 38,250 tonnes of tin concentrate a year (40 x 255 days = 10,200; 10,200 x 3 = 30,600; 50 x 255 days = 12,750; 12,750 x 3 = 38,250). *See also* List of the main production units in service and out of service, January 2006-January 2007, **R-68** (showing that the three smelting furnaces operated, on average, during 255 days in 2006).

³¹⁷ Vinto Production Metallurgical Balance, 2012, **R-62**, p 1 (28,856 tonnes of processed concentrate in 2012); Vinto Production Metallurgical Balance, 2013, **R-63**, p 1 (29,966 tonnes of processed concentrate in 2013); Vinto Production Metallurgical Balance, 2014, **R-64**, p 1 (29,603 tonnes of processed concentrate in 2014) ((28,856 + 29,966 + 29,603) / 3 = 29,475).

Tin Smelter.³¹⁸ SRK seeks to dismiss these projects as mere maintenance projects that did not increase output. This is wrong.

128. As Claimant's mining expert RPA explains in its Second Expert Report, had Glencore Bermuda been allowed to complete this optimization process, it would have enabled Vinto to process at least 30,000 tonnes of tin concentrates a year and produce approximately 14,000 tonnes of tin metal a year, as Compass Lexecon assumes.³¹⁹ As RPA further explains, these plans were easily achievable as they included standard optimization procedures intended to reduce work stoppages due to maintenance or accidents, such as replacing the brick used to line the smelting furnaces with more durable brick that required less maintenance, installing automated control systems, and replacing worn out parts of the furnaces and other machines (including radiators and other cooling, cleaning and exhaust systems).³²⁰ These projects plainly were designed to boost output by enabling Vinto to operate the three smelting furnaces more efficiently, with less down time.³²¹
129. With respect to the supplies of tin concentrate, as of February 2007, there was no reason for a willing buyer to believe that Vinto would experience a shortage of supply, as Bolivia argues.³²² Vinto was (and still is) the only commercial scale tin smelter in Bolivia and the natural buyer for all tin concentrate produced in Bolivia,³²³ and, as of 2007, the production of tin concentrates in Bolivia was

³¹⁸ First Expert Report of RPA, paras 161-163; Second Expert Report of RPA, paras 229, 233. *See also* Vinto, Projects and works executed in Vinto 2002-2006 Period, Undated, **RPA-53**.

³¹⁹ Second Expert Report of RPA, paras 192, 230, 235; Second Expert Report of Compass Lexecon, para 62.

³²⁰ Second Expert Report of RPA, para 233; Third Witness Statement of Christopher Eskdale, para 67; First Expert Report of RPA, para 161.

³²¹ Second Expert Report of RPA, para 233; Third Witness Statement of Christopher Eskdale, para 30; First Expert Report of RPA, paras 45, 163.

³²² Statement of Defense, paras 660-661, 858; First Witness Statement of Ramiro Villavicencio, paras 64(a), 66.

³²³ Second Expert Report of RPA para 222(a). As explained by Mr Eskdale in his Third Witness Statement, Vinto had significant bargaining power to acquire the volumes of tin concentrate it required for its operations because the only other tin smelter in the region was located in Pisco, Peru, and it was typically more cost effective for concentrate producers in Bolivia to sell its

- increasing steadily³²⁴ and forecasted to sustain this upward trend. Furthermore, as explained in Section III.A.1.c above, Glencore Bermuda controlled and intended to increase output at the Colquiri Mine, the second largest tin mine in Bolivia.³²⁵
130. Even after Bolivia's nationalization of Vinto, the Tin Smelter's operations have demonstrated that there would have been sufficient tin concentrates available to Vinto to meet RPA's projections. Indeed, since 2015, Vinto has consistently processed over 29,000 tonnes of tin concentrates a year, including more than 30,000 tonnes of tin concentrates in 2016.³²⁶
131. As to the quality of the concentrate available to the Tin Smelter, Bolivia's valuation expert, Quadrant, adopts RPA's projections for the average grade (*ie*, tin content) of the concentrate purchased by Vinto and the average recovery rate (*ie*, amount of tin converted to tin metal) for Vinto's smelting operations—48.75% and 95.6%, respectively.³²⁷ Oddly, Bolivia's other expert, SRK, contradicts Quadrant's adoption of these projections and alleges that they are "unduly high" and that Vinto's average concentrate grade and recovery rate were in decline as of the valuation date.³²⁸ SRK is incorrect.
132. RPA bases its projections on Vinto's average concentrate grade and recovery rate for 2005 and 2006, which it considers to be the best indicator of these rates going forward because those are the years that Glencore Bermuda controlled the Tin Smelter.³²⁹ In addition, SRK's own data corroborates RPA's projections: in the

concentrate to Vinto than to incur the cost of shipping concentrate to Peru or to the next closest smelters, which were in Asia. Third Witness Statement of Christopher Eskdale paras 27(d), 55.

³²⁴ Statistics of the Metallurgical Mining Sector 1980-2017, Ministry of Mining, 2018, **C-330**, p 6.

³²⁵ Third Witness Statement of Christopher Eskdale, para 9.

³²⁶ Vinto Production Metallurgical Balance, 2015, **R-65**, p 1 (29,338 tonnes in 2015); Vinto Production Metallurgical Balance, 2016, **R-66**, p 1 (31,571 tonnes in 2016).

³²⁷ Expert Report of Quadrant, para 108; Second Expert Report of RPA, paras 20(e)(i)-(ii).

³²⁸ Statement of Defense, paras 662-663, 862-864; Expert Report of SRK, para 98; First Witness Statement of Ramiro Villavicencio, paras 68-72.

³²⁹ Second Expert Report of RPA, paras 20(e)(i), 193.

decade prior to Bolivia's taking of the Tin Smelter, the average grade of the tin concentrate it processed and its recovery rate were not in decline, as SRK asserts, but rather fluctuated and averaged 49.68% and 96.15%, respectively—higher than the rates that RPA projects.³³⁰ SRK submits no evidence that could support a lower concentrate grade or recovery rate under Glencore Bermuda's operation.³³¹

b. Glencore Bermuda's estimated capital expenditures are reasonable

133. To produce at its forecasted levels, RPA projects that Vinto would have needed US\$800,000 of CAPEX a year.³³² RPA bases this projection on Vinto's actual annual CAPEX for 2005 and 2006 (rounded up to the next hundred thousand dollars), which it considers to be the best indicator of CAPEX going forward because those are the years that Glencore Bermuda controlled the Tin Smelter.³³³ Compass Lexecon relies on this CAPEX projection in its DCF model of Vinto, applying US\$800,000 of CAPEX for 2008 and adjusting that amount for inflation each year thereafter, reaching approximately US\$1.3 million of CAPEX by 2026.³³⁴

³³⁰ *Ibid*, paras 203, 209. See Production history of the Empresa Metalúrgica Vinto, 1995-2017, **R-78**, rows BH12-21 (showing a yearly average concentrate grade of 50.17% in 1997, 50.36% in 1998, 51.19% in 1999, 51.14% in 2000, 42.76% in 2001, 51.88% in 2002, 53.98% in 2003, 46.79% in 2004, 49.3.0% in 2005, and 49.26% in 2006), column BQ, rows 12-21 (showing a yearly average recovery rate of 95.69% in 1997, 96.87% in 1998, 96.18% in 1999, 96.41% in 2000, 96.19% in 2001, 95.90% in 2002, 96.44% in 2003, 96.21% in 2004, 96.15% in 2005, 95.49% in 2006).

³³¹ Following Bolivia's seizure of the Tin Smelter, the average grade of the concentrate purchased for processing at the Smelter and its average recovery rate declined under EMV's management. However, neither Bolivia nor its expert, SRK, have submitted any evidence that that was due to a decline in the quality of tin concentrates available in Bolivia or the region or that this issue has persisted. Moreover, Bolivia cannot rely on EMV's choices in its DCF analysis. EMV's operation of the Tin Smelter is not representative of Glencore Bermuda's operation of the Smelter and, by definition, would not have been information that a willing buyer could have considered on the Vinto valuation date, 8 February 2007.

³³² Second Expert Report of RPA, para 230; First Expert Report of RPA, para 202; First Expert Report of Compass Lexecon, para 85.

³³³ Second Expert Report of RPA, paras 229. First Expert Report of RPA, para 202.

³³⁴ Second Expert Report of Compass Lexecon, para 73. See First Expert Report of Compass Lexecon, para 85; Compass Lexecon Vinto Valuation, Undated, **CLEX-2**, "CAPEX"; DCF and Calculations (Vinto), Undated, **EO-3**, "DCF - Table 1," "10. Capital expenditures".

134. Bolivia's valuation expert, Quadrant, adopts this CAPEX projection as well, but assumes that Vinto's output would not have increased.³³⁵ Quadrant's assumption is based on SRK's assertion that Vinto could not have processed 30,000 tonnes of tin concentrate a year without higher CAPEX.³³⁶ To support its position, SRK argues, based on no more than the statement of Bolivia's witness, Mr Villavicencio (who cites no supporting data), that the projects to optimize Vinto's output would cost "more" than US\$800,000 a year.³³⁷ SRK and Mr Villavicencio are wrong, however. Their critique misunderstands the nature and impact of the Vinto optimization projects.
135. As RPA outlined in its First Expert Report, from 2002 to 2006, Vinto undertook numerous projects to optimize the use of the Tin Smelter's three operating smelting furnaces.³³⁸ Those projects were not capital intensive but were effective in increasing the Tin Smelter's throughput. For example, in 2005 and 2006, Vinto's CAPEX was US\$730,000 and US\$745,000, and the Tin Smelter processed 23,793 and 25,161 tonnes of tin concentrates a year, respectively.³³⁹ As explained above, but-for Bolivia's wrongful conduct, Glencore Bermuda planned to implement additional optimization projects that were not capital intensive³⁴⁰ and were designed to improve the use of Vinto's existing smelting furnaces, rather than to add new smelting capacity. In RPA's opinion, those projects would have enabled the Tin Smelter to utilize its capacity to process at least 30,000 tonnes of

³³⁵ First Expert Report of Quadrant, para 108. *See also* DCF and Calculations (Vinto), Undated, **EO-3**, "DCF – Table 1," row 24.

³³⁶ First Expert Report of Quadrant, para 108.

³³⁷ First Expert Report of SRK, para 103; First Witness Statement of Ramiro Villavicencio, para 86.

³³⁸ First Expert Report of RPA, para 161.

³³⁹ *Ibid*, paras 172-173, Tables 11-12, respectively.

³⁴⁰ Third Witness Statement of Christopher Eskdale, para 67. *See* Sinchi Wayra management report for January 2007, February 2007, **C-313**, p 10.

concentrates a year and produce approximately 14,000 tonnes of tin metal a year.³⁴¹

136. SRK implies that Vinto could not have processed tin concentrate at the levels projected by RPA without acquiring a new type of furnace called an Ausmelt Furnace, because, in 2015, EMV invested US\$39 million to install such a furnace at the Tin Smelter and it has not yet reached the production levels projected by RPA.³⁴² Data regarding EMV's production levels in 2015 and any other time after the date of valuation (8 February 2007) is not information that a willing buyer would have taken into account when deciding to purchase the Tin Smelter and therefore does not bear on Vinto's FMV. However, even if it did, the suggested need for an Ausmelt Furnace is belied by Bolivia's own data, referenced above, which show that EMV reached processing levels similar to those forecasted by Glencore Bermuda—processing 28,900, 30,000 and 29,600 tonnes of tin concentrate in 2012, 2013 and 2014, respectively—even before installing the Ausmelt Furnace in late 2015.³⁴³ Further, before Vinto was nationalized, Glencore Bermuda considered acquiring an Ausmelt Furnace and determined that it was not necessary to achieve its objectives for Vinto.³⁴⁴

c. Glencore Bermuda's forecasts for operating costs are reasonable

137. To produce at its forecasted levels, Compass Lexecon projects that, beginning in 2008, Vinto would have incurred OPEX of US\$316 per tonne of concentrate processed. Compass Lexecon bases this projection on Vinto's actual operating

³⁴¹ Second Expert Report of RPA, para 233.

³⁴² Expert Report of SRK, para 101.

³⁴³ Vinto Production Metallurgical Balance, 2012, **R-62**, p 1 (28,856 tonnes); Vinto Production Metallurgical Balance, 2013, **R-63**, p 1 (29,966 tonnes); Vinto Production Metallurgical Balance, 2014, **R-64**, p 1 (29,603 tonnes).

³⁴⁴ Third Witness Statement of Christopher Eskdale, para 68. As explained by Mr Eskdale in his Third Witness Statement, Glencore considered installing an Ausmelt Furnace but chose not to because it would have required Vinto to lay-off more than 50% of Vinto's workforce, because the three existing furnaces would have been replaced by a single furnace that required less support. As such, any marginal increase in production or reduction in operating costs would not compensate for the acquisition costs and the adverse social impact of installing the Ausmelt Furnace.

costs for 2006, which were US\$368.79 per tonne of concentrate processed.³⁴⁵ The Tin Smelter's OPEX for 2006 was significantly higher than its OPEX for 2005 (26% higher, mainly due to increased tin prices, which in turn resulted in increased costs to acquire tin concentrates for processing during 2006).³⁴⁶ To be conservative, Compass Lexecon elected to use the 2006 OPEX rather than average the OPEX for 2005 and 2006.³⁴⁷ To calculate OPEX of US\$316 per tonne of concentrate processed, Compass Lexecon adjusts Vinto's 2006 OPEX amount to account for the economies of scale that Vinto would have gained as production increased between 2006 and 2008.³⁴⁸

138. Bolivia's expert, Quadrant, does not dispute the use of Vinto's 2006 OPEX as the baseline for future OPEX.³⁴⁹ It disagrees, however, that OPEX would have been reduced pursuant to economies of scale as Vinto's production levels increased between 2006 and 2008.³⁵⁰ Quadrant's position assumes that OPEX consists of fluctuating, rather than fixed costs.³⁵¹ Quadrant's position is contrary to the facts and all relevant economics literature. As both RPA and Compass Lexecon explain, several of Vinto's operating costs were fixed costs—*eg*, salaries of management and administrative staff, building operations and maintenance, insurance—that would not have fluctuated with the output of the Tin Smelter.³⁵² As a result, consistent with Compass Lexecon's DCF for Vinto, a willing buyer

³⁴⁵ Second Expert Report of RPA, para 224; First Expert Report of RPA, para 201; Second Expert Report of Compass Lexecon, para 66.

³⁴⁶ Second Expert Report of RPA, para 224; First Expert Report of RPA, para 172; Second Expert Report of Compass Lexecon, para 66.

³⁴⁷ Second Expert Report of RPA, para 224; First Expert Report of RPA, para 201; Second Expert Report of Compass Lexecon, para 66.

³⁴⁸ First Expert Report of Compass Lexecon, para 85; Second Expert Report of Compass Lexecon, para 66.

³⁴⁹ *See* Expert Report of Quadrant, para 110.

³⁵⁰ Expert Report of Quadrant, para 110.

³⁵¹ Second Expert Report of RPA, para 225; Second Expert Report of Compass Lexecon, para 66.

³⁵² Second Expert Report of RPA, para 225; Second Expert Report of Compass Lexecon, para 66.

would have expected to reap economies of scale for portions of OPEX as Vinto's productivity increased.³⁵³

d. Glencore Bermuda's forecasts for Vinto's tin ingot sale prices are reasonable

139. To forecast Vinto's revenues, Compass Lexecon estimates the prices for its projected tin ingots sales based on industry analysts' projections, plus a 3% premium.³⁵⁴ Bolivia's expert, Quadrant, adopts Compass Lexecon's use of analyst projections as the baseline for ingot sale prices and agrees that a premium has to be added.³⁵⁵ Quadrant advocates, however, for the use of a premium of 1.68%, rather than the 3% premium adopted by Compass Lexecon.³⁵⁶
140. There is no basis to support Quadrant's lower premium. Compass Lexecon's forecast of a 3% premium is based on the last sales contract that Vinto signed prior to its nationalization in February 2007 and, as a result, would have been the best source available to a willing buyer as of the date of valuation.³⁵⁷ Further, as Compass Lexecon explains, the 3% premium is corroborated by third-party market reports on tin ingot sale price premiums in early 2007.³⁵⁸ In contrast, Quadrant's projected premium is based on the average premiums of 18 short-term sales contracts signed by Vinto dating from 2002 through 2005 that expired well before the valuation date for Vinto.³⁵⁹ As Compass Lexecon explains in its

³⁵³ Second Expert Report of Compass Lexecon, para 66.

³⁵⁴ Second Expert Report of Compass Lexecon, paras 67, 68; First Expert Report of Compass Lexecon, paras 83, 84. The 3% premium was due, among other things, to the high quality of the tin ingots sold by Vinto, including their condition (refined tin ingots as opposed to concentrates or semi-refined ingots) and their purity (grade A ingots with a 99.9% metal purity), and the location of their delivery (a port in Arica, Chile, ready to be shipped overseas as opposed to being delivered at the Smelter's door).

³⁵⁵ Expert Report of Quadrant, paras 119, 120.

³⁵⁶ *Ibid.*, para 119.

³⁵⁷ Second Expert Report of Compass Lexecon, para 68; First Expert Report of Compass Lexecon, para 84.

³⁵⁸ Second Expert Report of Compass Lexecon, para 68; First Expert Report of Compass Lexecon, para 84; Soft Metais Ltda Contract No 3, 20 February 2006, **CLEX-32-19**, p 1.

³⁵⁹ Expert Report of Quadrant, para 119.

Second Expert Report, these contracts are not representative of sale price premiums for tin ingots in 2007 and onward, because between 2002 and 2006 premiums had been consistently trending upwards, and, as a result, the premiums in the older contracts (which would no longer be in force on the date of valuation) would be lower than the premiums that a willing buyer would expect to receive in 2007.³⁶⁰

141. Quadrant implies that tin ingot prices forecasted by Compass Lexecon are not credible because Compass Lexecon did not compare the premium to internal forecasts from Glencore Bermuda or a related entity.³⁶¹ However, Compass Lexecon's forecasts are based on price forecasts of third-party industry analysts, which are much more representative of contemporaneous market expectations (*ie*, a willing buyer's expectations) than the hypothetical seller's internal projections. In addition, in its Second Expert Report, Compass Lexecon has corroborated its forecasts with Sinchi Wayra's internal price forecasts and they are nearly identical—prices of US\$3.90 per pound of tin ingot versus Sinchi Wayra's forecasted prices of US\$3.82 per pound for 2007.³⁶²

3. Glencore Bermuda's discount rates for Colquiri and Vinto are appropriate

142. The Parties agree to discount Colquiri's and Vinto's projected cash flows by using the Weighted Average Cost of Capital (**WACC**) for each company.³⁶³ Compass Lexecon calculates Colquiri's WACC at 12.3% (in 2012) and Vinto's WACC at 15.7% (in 2007).³⁶⁴ Bolivia's expert, Quadrant, advocates for the use of a WACC

³⁶⁰ Second Expert Report of Compass Lexecon, para 61.

³⁶¹ Expert Report of Quadrant, para 116.

³⁶² Second Expert Report of Compass Lexecon, para 70; Compass Lexecon Vinto Valuation, Undated, **CLEX-2**, "Prices," row I12.

³⁶³ Statement of Claim, paras 262-264; First Expert Report of Compass Lexecon, paras 73-74, 89-90; Statement of Defense, paras 840-841, 877-878; Expert Report of Quadrant, paras 142-143.

³⁶⁴ As explained by Compass Lexecon, Vinto's discount rate is higher than Colquiri's because: (i) Bolivia's country-risk premium was higher in 2007 than 2012 (4.9% and 3.5%, respectively); (ii) risk-free interest rates were higher in 2007 than in 2012 (4.8% and 2.2%, respectively); and (iii)

of 22.06% for Colquiri and 28.49% for Vinto.³⁶⁵ Quadrant's rates are materially higher than the highest discount rate ever reported in an investment award against Bolivia,³⁶⁶ and nearly double the discount rates calculated by Compass Lexecon.

143. The wide differences between the experts' proposed discount rates mainly³⁶⁷ arise from Quadrant's: (i) inflation of the country-risk premia for Bolivia;³⁶⁸ and (ii) unjustified addition of an "illiquidity/size premium" for both Colquiri and Vinto.³⁶⁹ In its Second Expert Report, Compass Lexecon explains at length why Quadrant's position on each of these issues is contrary to orthodox finance practices. In the following paragraphs, Glencore Bermuda briefly explains why Compass Lexecon's discount rate calculations are reasonable and the arbitrariness of Quadrant's calculations.

a. Bolivia's country-risk premium is incorrect

144. The purpose of the country-risk premium is to account for the political, regulatory, and macroeconomic risks that Colquiri and Vinto might have been exposed to due to their location in Bolivia as opposed to a more stable

the differences in industries reflected in the beta. Second Expert Report of Compass Lexecon, para 83.

³⁶⁵ Expert Report of Quadrant, para 144, Table 5.

³⁶⁶ *Guaracachi America, Inc and Rurelec Plc v Plurinational State of Bolivia* (UNCITRAL) Award, 31 January 2014, **CLA-120**, para 603 (the discount rate applied was 14.3% and the valuation date was in May 2010); *Quiborax SA and Non Metallic Minerals SA v Plurinational State of Bolivia* (ICSID Case No ARB/06/2) Award, 16 September 2015, **CLA-127**, paras 487, 501 (the discount rate applied was 18.4% and the valuation date was in June 2013 but based on data from 2004).

³⁶⁷ In addition to these differences, Quadrant incorrectly calculated the risk-free rate for Vinto. Despite using 10-year US Treasury Bonds to calculate Colquiri's risk-free rate, Quadrant inexplicably uses 20-year US Treasury Bonds for Vinto, which are less liquid and more sensitive to changes in inflation and inconsistent with other parameters. Furthermore, Quadrant estimates the corporate debt spread using a different methodology from Compass Lexecon's, but both methodologies are acceptable. Finally, Quadrant inflates the market risk premium by applying a different methodology to the one used by Compass Lexecon which, according to renowned scholars like Prof Damodaran, is inappropriate, because it overstates the premium when valuing long-term projects like Colquiri and Vinto. Expert Report of Quadrant, paras 148, 152-153, 184, 186; Second Expert Report of Compass Lexecon, paras 105-106 and 112-115.

³⁶⁸ *Ibid*, paras 85-96; Expert Report of Quadrant, para 169.

³⁶⁹ Second Expert Report of Compass Lexecon, para 97-103; Expert Report of Quadrant, para 177.

jurisdiction, such as the United States.³⁷⁰ Compass Lexecon has calculated general exposure to Bolivia's country risk using the standard and widely used method of applying Bolivia's sovereign default risk.³⁷¹ Quadrant, however, claims that applying Bolivia's sovereign default risk alone underestimates the country risk, because investing in company stock entails more risk than investing in sovereign bonds. Quadrant calculates exorbitant country-risk rates of 13.13% and 10.52% for Colquiri and Vinto, respectively, by applying a volatility multiplier of 1.5 to the country-risk rate calculated by Compass Lexecon, and then averaging that figure with the rate obtained with a different and unrelated method, the Ibbotson/Morningstar Country-Risk Model.³⁷²

145. *First*, it is incorrect to apply the 1.5 volatility multiplier because this multiplier is only appropriate for valuations of short-term investments (*ie*, for investments in stock that an investor expects to hold only for a few days, weeks or months), which is not the case for the valuation of Colquiri and Vinto.³⁷³ In fact, Quadrant's position was rejected by the tribunal in *Rurelec v Bolivia*, applying the same Treaty:

The Tribunal has carefully considered Econ One's case for a 1.5 multiplier, and has come to the conclusion that no multiplier should be applied. [...]

³⁷⁰ Second Expert Report of Compass Lexecon, para 85.

³⁷¹ *Ibid*, para 86.

³⁷² Expert Report of Quadrant, paras 168-169.

³⁷³ In the words of Prof Damodaran: "I add this default spread to the historical risk premium for a mature equity market (estimated from US historical data) to estimate the total risk premium. In the short term especially, the equity country-risk premium is likely to be greater than the country's default spread. You can estimate an adjusted country-risk premium by multiplying the default spread by the relative equity market volatility for that market (Std dev in country equity market/Std dev in country bond)." Damodaran, A, "Country Risk Premium Spreadsheet Calculations," January 2012, **CLEX-052**, "Country Premiums," rows 4-6. Renowned scholars like Prof Damodaran explain that the purpose of the 1.5x multiplier is to account for additional short-term volatility that equity markets may experience compared to sovereign yields in the short-term. As a result, this multiplier might be relevant for the valuation of a short-term investment but is not to be used in the assessment of long-term country-risk exposure. Second Expert Report of Compass Lexecon, paras 90-91.

Contrary to Econ One’s assertion, Professor Damodaran is on record as favouring Econ One’s multiplier (i.e. the “melded approach”, his third and last one) only for short term valuations.³⁷⁴

146. *Second*, it is incorrect to calculate the country-risk premium based on the Ibbotson/Morningstar Country-Risk Model. To begin with, the Ibbotson/Morningstar Country-Risk Model is not reliable and results in an overestimation of the country-risk premium. As Compass Lexecon explains, the Model is, among other things, not transparent in its sources, and applies data from developed countries to emerging markets.³⁷⁵ Furthermore, the fact that Bolivia may default on its debt does not mean that a company located in Bolivia will necessarily default on its debt—particularly when most of that company’s revenues are dependent on exports and US dollars, like Colquiri’s and Vinto’s were. As it explains in its Second Expert Report, if Compass Lexecon had accounted in its but-for scenario for Colquiri’s and Vinto’s international customer base, the country-risk premium rate would have been lower than the general exposure measured by the sovereign debt approach.³⁷⁶ Because it did not account for this, Compass Lexecon’s country-risk premium is conservative.
147. *Third*, Quadrant’s volatility multiplier and Ibbotson/Morningstar Country-Risk Model have divergent results. The multiplier results in a country risk premium of 7.81% for 2007 and 5.54% for 2012. In contrast, the Ibbotson/Morningstar Country-Risk Model results in a premium of 18.45% for 2007 and 15.51% for 2012. As explained by Compass Lexecon, Quadrant does not justify why this Tribunal should adopt an average of the country-risk premia resulting from two approaches that produce significantly divergent results. Indeed, such divergence

³⁷⁴ *Guaracachi America, Inc and Rurelec Plc v Plurinational State of Bolivia* (UNCITRAL) Award, 31 January 2014, **CLA-120**, paras 576, 578 (emphasis added).

³⁷⁵ As explained by Compass Lexecon, the Ibbotson Country Risk Rating Model is a survey approach which is based on the subjective assessment of 75-100 bankers and an arbitrary weighting by the publication Institutional Investor, which, unlike Standard & Poor’s, Moody’s or Fitch is not a recognized rating agency. In addition to being subjective and qualitative, the ratings are influenced by expropriation and currency risks, which should not be included in the cost of capital estimations for Colquiri or Vinto. Second Expert Report of Compass Lexecon, paras 92-93.

³⁷⁶ *Ibid.*, paras 96.

should trigger a concern about the validity and consistency of the selected methods.³⁷⁷ Hence, this Tribunal should reject Quadrant’s unorthodox country-risk premium calculation method, which not surprisingly has never been endorsed by any tribunal.

148. *Finally*, in addition to Quadrant’s criticism, Bolivia insinuates that the Tribunal should consider the risk of expropriation without compensation as a component of the country-risk premium. With respect to Colquiri, Bolivia asserts that profits should be discounted to reflect the risks that: (i) Bolivia would have forced Colquiri to renegotiate the Colquiri Lease and accept a shared-risk scheme whereby Bolivia would acquire a 55% share of the Lease rights without providing any compensation; and (ii) “social conflicts in the Colquiri area” would result in “State intervention.”³⁷⁸ For Vinto, Bolivia asserts that profits should be discounted to reflect the risk that the Tin Smelter “might be reverted to the State in the near future.”³⁷⁹ However, Bolivia’s own valuation expert does not share Bolivia’s position, as it has not adjusted the country-risk premia of Colquiri or Vinto based on Bolivia’s arguments. This is not surprising, as Bolivia’s position is contrary to well-established principles of international law that prevent a State from relying on the possibility that it may break the law to artificially reduce the value of compensation due in a subsequent expropriation.³⁸⁰ Furthermore, as

³⁷⁷ *Ibid*, para 89.

³⁷⁸ Statement of Defense, paras 783-786.

³⁷⁹ *Ibid*, paras 841, 849-851, 879-880.

³⁸⁰ For example, the tribunal in *Gold Reserve v Venezuela* categorically rejected the inflation of the country-risk component of a WACC to reflect the state’s propensity to breach its treaty obligations, stating that “it is not appropriate to increase the country risk premium to reflect the market’s perception that a State might have a propensity to expropriate investments in breach of BIT obligations.” *Gold Reserve Inc v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/09/1) Award, 22 September 2014, **CLA-123**, para 841. The tribunal in *Gold Reserve* went on to explain that genuine risks such as political risks other than expropriation should be accounted for when calculating country risk but that this should not extend to other risks such as those reflective of a State’s policy to nationalize investments. In this case, Compass Lexecon’s calculation of Bolivia’s country risk properly accounts for those political risks. *See also Azurix Corp v Argentine Republic* (ICSID Case No ARB/01/12) Award, 14 July 2006, **CLA-63**, para 417; *Occidental Petroleum Corporation and Occidental Exploration and Production Company v Republic of Ecuador* (ICSID Case No ARB/06/11) Award, 5 October 2012, **CLA-254**, para 564.

explained above, the country-risk premium already accounts for the political, regulatory, and macroeconomic risks to which Colquiri and Vinto might have been exposed.

b. Bolivia's "illiquidity/size" premium is incorrect

149. Quadrant adds an "illiquidity/size premium" of 3.89% and 3.95% to Colquiri's and Vinto's risk profiles, respectively.³⁸¹ Quadrant asserts that this premium accounts for: (i) additional risks to which "small companies" allegedly are exposed; and (ii) the fact that Colquiri and Vinto are not publicly-traded companies and, thus, their stock is illiquid.³⁸² As Compass Lexecon explains, there is no justification for an illiquidity or size premium.
150. *First*, the use of a "size premium" is not a standard practice in international finance, because it is incorrect to apply the US-based size premium proposed by Quadrant to companies in an emerging market like Bolivia.³⁸³ It is therefore not surprising that the tribunal in the *Rurelec* case rejected the same arguments brought by Bolivia's same expert.³⁸⁴ In fact, it is duplicative to assert that Colquiri and Vinto bear additional risk because they are small relative to the US market (through the size premium), and that they bear additional risk because they are located in Bolivia and not in the US (through the country-risk premium).³⁸⁵ Even if this "size premium" were to apply in emerging markets, Colquiri and Vinto are

The only award that Bolivia cites in support of its allegations, *Venezuela Holdings*, does not advance its position. To the contrary, that tribunal determined that "confiscation risk" was part of the standard "country-risk" premium rather than an additional risk premium. *Venezuela Holdings, B.V., Mobil Cerro Negro Holding, Ltd., Mobil Venezolana de Petróleos Holdings, Inc., Mobil Cerro Negro, Ltd., and Mobil Venezolana de Petróleos, Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/07/27, Award, 9 October 2014, **RLA-65**, para 365.

³⁸¹ Expert Report of Quadrant, para 177.

³⁸² *Ibid*, paras 178-181.

³⁸³ Second Expert Report of Compass Lexecon, para 99.

³⁸⁴ *Guaracachi America, Inc and Rurelec Plc v Plurinational State of Bolivia* (UNCITRAL) Award, 31 January 2014, **CLA-120**, paras 595-597.

³⁸⁵ Second Expert Report of Compass Lexecon, para 99.

classified as large companies in Bolivia.³⁸⁶ Thus, there is no reason to reduce their value to account for their size.

151. *Second*, the application of an illiquidity premium is contrary to the calculation of the Investments' FMVs. According to Quadrant, Colquiri's and Vinto's cash flows should be discounted more heavily using an "illiquidity premium," because it would be difficult to find potential buyers for Colquiri and Vinto, given that these companies are not publicly-traded.³⁸⁷ Quadrant also claims that Glencore Bermuda would have been compelled to divest these assets and thus would have to accept higher exit transaction costs.³⁸⁸ As Compass Lexecon explains, however, the use of an "illiquidity premium" runs contrary to the FMV principle because under this principle the value should be measured pursuant to the standard of a willing buyer and a willing seller *with no compulsion to sell*.³⁸⁹ Furthermore, Quadrant's assumption that it would be difficult to find potential buyers for Colquiri and Vinto is also disproven by the evidence on the record, given that in five years—from 2000 to 2005—the Colquiri Lease and Tin Smelter changed hands two and three times, respectively.³⁹⁰

³⁸⁶ *Ibid.* As already explained, Vinto operated the largest tin smelter in Bolivia and one of handful of high-grade tin ingots producers in the world and Colquiri had the right to exploit the Colquiri Mine, the second largest tin/zinc concentrates producer in Bolivia. First Witness Statement of Christopher Eskdale, paras 13, 16, 32; First Expert Report of RPA, paras 42, 77; First Witness Statement of Eduardo Lazcano, para 10.

³⁸⁷ Expert Report of Quadrant, para 180.

³⁸⁸ *Ibid.*, para 179.

³⁸⁹ Second Expert Report of Compass Lexecon, paras 100-101. *Vestey Group Ltd v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/06/4, Award, 15 April 2016, **RLA-5**, para 402:

The Tribunal's task is to establish the FMV of Agroflora on the Valuation Date. This is primarily an economic exercise, which involves identifying the price at which the asset would change hands between a willing buyer and a willing seller in an arm's length transaction where the parties each act knowledgeably, prudently, and without coercion.

³⁹⁰ The Colquiri Lease was awarded to Colquiri and Comsur in 1999 when the operation of the Mine was privatized. Supreme Decree No 25,631, 24 December 1999, published in the *Gaceta Oficial* No 2,192, 24 December 1999, **C-6**, Art 2; Colquiri Lease, **C-11**, clauses 4, 7. In turn, the Tin Smelter was privatized and sold to Allied Deals in 1999, and then in 2002 Colquiri acquired Vinto and, thereby, the Tin Smelter. Supreme Decree No 25,631, 24 December 1999, published in the *Gaceta Oficial* No 2,192, 24 December 1999, **C-6**, Art 1; Notarizations of the sale and purchase

4. The market multiples methodology corroborates Colquiri's and Vinto's DCF valuations

152. To corroborate the results of the DCFs it calculated for Colquiri and Vinto, Compass Lexecon uses the market multiples approach.³⁹¹ To conduct its market multiples valuation, Compass Lexecon first determined the ratios of Colquiri's and Vinto's overall values or "Enterprise Values" (*EVs*) to their respective EBITDA for 12-month periods ending on their valuation dates in this arbitration.³⁹² For Colquiri's and Vinto's *EVs*, Compass Lexecon applied the FMVs resulting from its DCF valuations.³⁹³ The resulting *EV/EBITDA* ratios were 5.6x (*ie*, Colquiri is valued at 5.6 times its EBITDA as of 29 May 2012) and 7.2x (*ie*, Vinto is valued at 7.2 times its EBITDA as of 8 February 2007).³⁹⁴ Compass Lexecon then compared Colquiri's and Vinto's *EV/EBITDA* ratios with the median ratios for groups of comparable companies compiled by market analysts.³⁹⁵
153. For Colquiri, Compass Lexecon found that its *EV/EBITDA* ratio of 5.6x was just below the median *EV/EBITDA* ratio for a portfolio of 166 companies in the

agreement of the Tin Smelter between the Ministry of External Trade and Investment, Comibol, Vinto and Allied Deals, July 2001, **C-7**; Sale and purchase agreement of Vinto between RGB Resources PLC, its provisional liquidators and Colquiri, 1 June 2002, **C-46**. In 2005, Glencore Bermuda indirectly acquired Colquiri, and thereby, all of Vinto, the Tin Smelter and the Colquiri Lease. Assignment and Assumption Agreements between Glencore International and Glencore Bermuda, 7 March 2005, **C-64**; Certificate of the Secretary of Kempsey, **C-13**; Certificate of the Secretary of Iris, 19 May 2011, **C-14**; Certificate of the Secretary of Shattuck, 1 February 2012, **C-15**; Share register of Sinchi Wayra, 2006, **C-16**; Share register of Colquiri, 2006, **C-17**; Share register of Vinto, 2006, **C-18**; First Witness Statement of Christopher Eskdale, para 19.

³⁹¹ First Expert Report of Compass Lexecon, para 127; Second Expert Report of Compass Lexecon, Appendix D, para 160. It is thus incorrect Bolivia's valuation expert, Quadrant, assertion that Compass Lexecon offers a market multiples valuation as an "alternative valuation" to the DCFs it prepared for Colquiri and Vinto. First Expert Report of Quadrant, para 201.

³⁹² As Compass Lexecon explained in its first report, the *EV-to-EBITDA* multiple is useful to compare companies as *EBITDA* drives the firm value and is widely used in the finance industry to determine the FMV of a company. First Expert Report of Compass Lexecon, para 127.

³⁹³ *Ibid*, paras 75, 91.

³⁹⁴ *Ibid*, paras 76, 92.

³⁹⁵ *Ibid*, paras 76, 92.

“Diversified Metals & Mining” sector, which is 5.8x (as of 29 May 2012).³⁹⁶ In the case of Vinto, Compass Lexecon found that its EV/EBITDA ratio of 7.2x is moderately lower than the median EV/EBITDA ratio for a group of 23 companies from the “Smelting and Refining of Diversified Metals” sector, which is 8.7x (as of 8 February 2007).³⁹⁷ As Compass Lexecon explains, this comparison demonstrates that Compass Lexecon’s DCF valuations of Colquiri and Vinto are reasonable (if not somewhat low) as compared to the valuations of their respective market groups.³⁹⁸

154. Bolivia’s valuation expert, Quadrant, presents no alternative market multiples valuation and simply asserts that Compass Lexecon’s market comparison is flawed because Compass has not identified any companies that are directly comparable to Colquiri or Vinto.³⁹⁹ Quadrant’s criticism misses its mark. As Compass Lexecon explains, when there are not directly comparable companies, it is acceptable to use broad samples of companies from the same sector,⁴⁰⁰ as it has for Colquiri and Vinto. This practice is accepted in economics⁴⁰¹ and arbitral jurisprudence. As the tribunal in *Crystallex v Venezuela* explained:

[N]o two companies will ever be exactly alike. This is a given that must be accepted when using this kind of methodology. After all, “to compare” is a process made with objects similar to the subject rather than with identical objects—if those even exist.⁴⁰²

155. This is particularly true when, as here, Compass Lexecon is offering its market comparable analysis as a ‘sanity check’ of their primary valuation methodology (*ie*, Vinto’s and Colquiri’s DCF), rather than as the primary valuation method

³⁹⁶ *Ibid*, paras 76, 129.

³⁹⁷ *Ibid*, paras 92, 130.

³⁹⁸ Second Expert Report of Compass Lexecon, para 164.

³⁹⁹ First Expert Report of Quadrant, para 202.

⁴⁰⁰ Second Expert Report of Compass Lexecon, para 163.

⁴⁰¹ *Ibid*, para 163.

⁴⁰² *Crystallex International Corporation v Bolivarian Republic of Venezuela* (ICSID Case No ARB(AF)/11/2) Award, 4 April 2016, **CLA-130**, para 902.

itself.⁴⁰³ While Compass Lexecon's DCF calculations value Colquiri and Vinto based on the particularities of each Investment, the market multiples approach gives an independent source of value assessment based on market information that confirms the reasonability of Compass Lexecon's DCF valuations.⁴⁰⁴

B. THE FAIR MARKET VALUE OF THE ANTIMONY SMELTER

156. In her Second Expert Report, Claimant's expert, Ms Russo, calculates the FMV of the Antimony Smelter to be US\$3,448,288.1 million.⁴⁰⁵ That amount is comprised of the values of the Antimony Smelter's assets: (i) the land (approximately nine hectares) on which the Antimony Smelter is located (US\$2,962,628.10 million); and (ii) the replacement costs of the buildings and other improvements on the land (US\$485,660).⁴⁰⁶ Ms Russo valued the Antimony Smelter's assets as of the date of this Reply on Quantum (22 January 2020) as a proxy for the correct valuation date, which should be the date of the award in this arbitration.⁴⁰⁷ Compass Lexecon deducts from Ms Russo's US\$3.5 million valuation the income tax, special income tax for mining operations, and remittance tax that Glencore Bermuda would have paid had it sold the land, buildings and improvements of the Antimony Smelter to a willing buyer. As a result, Compass Lexecon calculates the damages related to the Antimony Smelter to be US\$1.9 million.⁴⁰⁸
157. The Parties agree that an asset-based methodology is the appropriate method by which to value the Antimony Smelter.⁴⁰⁹ The Parties disagree, however, as to the date of valuation, and disagree in part on the value of the Antimony Smelter's

⁴⁰³ Second Expert Report of Compass Lexecon, para 164.

⁴⁰⁴ *Ibid*, paras 135, 140.

⁴⁰⁵ Second Expert Report of Ms Russo, para 6.1, Table 9.

⁴⁰⁶ *Ibid*, para 6.1, Table 9. Those buildings and improvements consist of a smelting facility, storage for mineral concentrates, other work areas, administrative offices and an electrical substation. *Ibid*, para 3.7.

⁴⁰⁷ *Ibid*, paras 2.1-2.6.

⁴⁰⁸ Second Expert Report of Compass Lexecon, para 143.

⁴⁰⁹ See Statement of Claim, para 251; First Expert Report of Compass Lexecon, para 43; Expert Report of Mr Mirones, para 5, 51, 89, 104-105; Expert Report of Quadrant, para 127.

assets.⁴¹⁰ With regard to those assets, the Parties disagree on the value of the land on which the Antimony Smelter is located, and, in an effort to narrow the issues in dispute, Claimant has accepted the valuation of the buildings and improvements on the land submitted by Bolivia's expert, Mr Mirones, provided that the value is updated for inflation to the date of the award.⁴¹¹ The following subsections address the valuation date and values of the Antimony Smelter's assets.

1. The value of the Antimony Smelter should be calculated as of the date of the award

158. Bolivia argues that the valuation date for the Antimony Smelter should be dictated by Article 5 of the Treaty, which provides that compensation for legal expropriations should be measured on a date immediately before the expropriation became public.⁴¹² On this standard the valuation date is 30 April 2010, the day before the Antimony Smelter Nationalization Decree was published.⁴¹³ Bolivia's position is incorrect.
159. As explained above, compensation in this arbitration is governed by the international law principle of full reparation, not Article 5 of the Treaty, and to provide Glencore Bermuda with full reparation for the loss of the Antimony Smelter, its value should be calculated as of the date of the award. This is because, as Ms Russo explains in her Second Expert Report,⁴¹⁴ the Antimony Smelter has appreciated in value since Bolivia nationalized it on 1 May 2010. The Antimony Smelter has appreciated in value at least in part because it is located outside of a city (named Oruro) that has grown over the last decade causing land values in the city and surrounding areas to increase.⁴¹⁵

⁴¹⁰ Statement of Defense, Section 7.3.6.

⁴¹¹ Second Expert Report of Ms Russo, para 1.3(b).

⁴¹² Statement of Defense, para 886.

⁴¹³ *Ibid*, para 886.

⁴¹⁴ Second Expert Report of Ms Russo, para 2.1.

⁴¹⁵ *Ibid*, paras 2.2, 3.3.

160. Calculating the Smelter's FMV as of the date of the award ensures that, as required by the full reparation principle, Glencore Bermuda, rather than Bolivia, benefits from any increase in value since the date of loss. Calculating the FMV of the Antimony Smelter as of 30 April 2010 (the day before Bolivia seized the Smelter), as Bolivia proposes, would allow Bolivia, rather than Claimant, to retain the increase in the Smelter's value, thereby rewarding Bolivia for breaching the Treaty. Such disregard for international law and the full reparation principle cannot be condoned.

2. Glencore Bermuda's valuation of the Antimony Smelter is reasonable

161. As explained above, the value of the Antimony Smelter consists of the value of the land on which it is located, and the replacement value of the buildings and improvements to the land. In her First Expert Report, Ms Russo valued the building and improvements at US\$756,658.66 as of the date of her Report (15 August 2017).⁴¹⁶ Bolivia's expert, Mr Mirones valued the Antimony Smelter's buildings at US\$370,405,69 as of 30 April 2010.⁴¹⁷ On Claimant's instruction and in an attempt to narrow the issues to be decided by this Tribunal, Ms Russo adopted Mr Mirones' value for the buildings in her Second Expert Report.⁴¹⁸ Ms Russo then updated this value to the date of this Reply on Quantum (22 January 2020) by applying the inflation rate for Bolivia's construction sector published by Bolivia's National Institute for Statistics (Instituto Nacional de Estadísticas del Estado Plurinacional de Bolivia) (*INE*), which was 31% between 2010 and 2019.⁴¹⁹ As Ms Russo explains, this inflation rate is the appropriate measure of the increased cost of replacing the Antimony Smelter's buildings and

⁴¹⁶ First Expert Report of Ms Russo, para 7.1.

⁴¹⁷ Expert Report of Mr Mirones, para 104.

⁴¹⁸ Second Expert Report of Ms Russo, para 1.3(b), para 5.6, Table 8.

⁴¹⁹ *Ibid*, para 5.6, Table 8. As Ms Russo explains, while Mr Mirones' valuation of the buildings is said to be made as of 30 April 2010, his calculations apply a depreciation factor throughout 2023. Therefore, there is no need to further discount Mr Mirones' valuation to account for depreciation during the period of 2010 to 2020.

- improvements.⁴²⁰ The resulting value of the buildings and the improvements as of 22 January 2020 is US\$485,660.⁴²¹
162. With regard to the value of the land on which the Antimony Smelter is located, Ms Russo applied a two-step market-based approach that resulted in the updated value of approximately US\$3 million as of 22 January 2020.⁴²² To calculate this amount, Ms Russo first determined the current average value of land (per square meter) comparable to the land where the Antimony Smelter is located, and then adjusted that average value downward to reflect the specific characteristics of the land on which the Antimony Smelter is located—*ie*, road access, the relative flatness of the land, availability of utilities such as water and electricity, and the size and industrial use of the land.⁴²³
163. In contrast, Mr Mirones, Bolivia’s real estate expert, values the land on which the Antimony Smelter is located at US\$293,987.90—approximately 10% of the value calculated by Ms Russo.⁴²⁴ To reach this low value, Mr Mirones relies on the fiscal value (“*valor catastral*”) that the State assigns to the land to assess property taxes, which is only US\$419,982.72.⁴²⁵ Using the same two-step approach as Ms Russo, Mr Mirones then adjusts that value downward on the basis of the characteristics of the land (including some of the adjustment factors that Ms Russo also considered, such as road access, the relative flatness of the land and the availability of utilities such as water and electricity). Mr Mirones’ adjustments result, however, in a steeper discount than Ms Russo’s adjustments. Mr Mirones

⁴²⁰ Second Expert Report of Ms Russo, para 5.5, para 5.6, Table 8.

⁴²¹ *Ibid*, para 5.6, Table 8, para 1.4(b).

⁴²² *Ibid*, para 4.33, Table 7. In her First Expert Report Ms Russo presented the valuation of the Antimony Smelter as of 15 August 2017—the approximate date of preparation of the calculations on which her valuations were based. In her Second Expert Report, Ms Russo updated her valuation to the date of the Report—22 January 2020. *Ibid*, paras 2.1, 2.6.

⁴²³ *Ibid*, paras 4.20-4.32.

⁴²⁴ Expert Report of Mr Mirones, para 70.

⁴²⁵ *Ibid*, para 70.

- applies an adjustment factor of 0.7, whereas Ms Russo applies an adjustment factor of 0.924.⁴²⁶
164. Mr Mirones admits that the comparative method that Ms Russo used to value the land is “commonly used for the valuation of real estate,” but asserts that it is necessary to use the fiscal value to value the land because the land purportedly is too unique to be compared to other industrial properties.⁴²⁷ Mr Mirones further asserts that Ms Russo’s valuation is inadequate, because Ms Russo allegedly mischaracterized the intended use of the land, relied on unreliable sources of data, applied incorrect adjustments to account for the specific characteristics of the property, and did not account for environmental clean-up costs.⁴²⁸ Mr Mirones is incorrect on all counts.
165. *First*, contrary to Mr Mirones’ position, the fiscal value of the land is an inappropriate measure of FMV that grossly undervalues the land.⁴²⁹ As Ms Russo explains, the fiscal value is calculated by the State for taxation purposes and is not intended to represent the FMV of the land.⁴³⁰ Numerous valuation experts and even Bolivia’s Constitutional Court have confirmed that fiscal values cannot be used to assess the FMV of real estate in Bolivia.⁴³¹

⁴²⁶ *Ibid*, para 70; First Expert Report of Ms Russo, para 5.15, Table 10.

⁴²⁷ Expert Report of Mr Mirones, paras 40-41.

⁴²⁸ *Ibid*, Sections 6, 7, 9.2.

⁴²⁹ Second Expert Report of Ms Russo, Subsection 4(ii).

⁴³⁰ *Ibid*, para 4.5.

⁴³¹ *Ibid*, paras 4.7-4.8 (citing Constitutional Court, Decision No 2621/2012, 21 December 2012, **GR-21**, Sections I.1.1, III.6). The Bolivian Constitutional Court has held that valuing real estate based on its fiscal value results in “a non-current appraisal [...] without observing in its calculation important issues such as the location of the property, improvements made and other aspects that [...] result in the increase of the assets subject to valuation” and that “the commercial value is the real value [...] and from which a fair price for the owner of the same is derived.” Constitutional Court, Decision No 2621/2012, 21 December 2012, **GR-21**, p 27 (unofficial English translation of Spanish original). In her Second Expert Report, Ms Russo provides an empirical analysis of land values in the region where the Smelter is located (the Oruro area) that shows that market values of land in that area are 16 times higher than their fiscal values.

166. Further, the land on which the Antimony Smelter is located is not too “unique” to value, as Ms Russo did, pursuant to a market comparables approach. As Ms Russo explains in her Second Expert Report, the market-based approach is precisely designed to value distinct properties.⁴³² Indeed, as described above, the second step in this approach is to adjust the average land value to account for the specific characteristics of the property in question, such as road access, the relative flatness of the land, the availability of utilities such as water and electricity, and the size and use of the land. This second step makes it possible to compare distinct properties on a common basis.⁴³³
167. *Second*, contrary to Mr Mirones’ assertion, Ms Russo’s valuation does not mischaracterize the land on which the Antimony Smelter is located.⁴³⁴ Ms Russo explains that the growth of the city of Oruro over the last decade has increased the demand for land around the city and, as a result of this increased demand, property prices have increased for all types of land, including industrial land such as the land on which the Antimony Smelter is located.⁴³⁵ This explanation does not mean, as Mr Mirones suggests, that Ms Russo has valued the land as residential land.⁴³⁶ Consistent with its current use, Ms Russo values the land as industrial land.
168. *Third*, Mr Mirones’ allegation that Ms Russo based her valuation on unreliable sources of land prices is also incorrect.⁴³⁷ As Ms Russo explains, because Bolivia

⁴³² Second Expert Report of Ms Russo, para 2.10.

⁴³³ *Ibid*, para 4.4.2.

⁴³⁴ Expert Report of Mr Mirones, para 36.

⁴³⁵ Second Expert Report of Ms Russo, para 3.3. The growth in the City of Oruro and local land price has coincided with general economic growth. According to Bolivia’s INE, the gross domestic product per capita in the Oruro department (of which Oruro is the primary city and population center) increased from US\$2,392 in 2010 to US\$3,165 in 2016. Similarly, the economy of the Oruro department has increased steadily since 2005, with the construction and real estate industries increasing their value in 181% between 2005 and 2017. *See* “Oruro y su economía en el contexto nacional,” *La Patria*, 16 September 2018, **C-331**, p 2.

⁴³⁶ Expert Report of Mr Mirones, para 35.

⁴³⁷ *Ibid*, para 45.

does not have an official registry of real estate transactions, property appraisers in Bolivia typically rely, as she did, on realtors, land valuation experts and real estate publications as sources for land prices.⁴³⁸ In fact, the valuation manual on which Mr Mirones relies for his Expert Report endorses these sources as appropriate sources of property prices for real estate valuations in Bolivia.⁴³⁹

169. *Fourth*, Ms Russo’s moderate downward adjustments to the land value to account for the specific characteristics of the property (*ie*, access to roads and utilities, topography and size) are reasonable and were confirmed by a site visit she made on 23 August 2019 in the course of preparing her Second Expert Report.⁴⁴⁰ As noted above, Ms Russo applies a total adjustment factor of 0.924 to the land value, whereas Mr Mirones applies an adjustment factor of 0.7.⁴⁴¹ The delta between the two discounts is largely due to their different views on the value of the land’s access to utilities.⁴⁴² Ms Russo determined that the land value should not be adjusted downwards, because the land title includes easements for access to water, sewage and electricity services through the property of the neighboring Vinto Tin Smelter.⁴⁴³ Mr Mirones, however, applies a 0.2 discount for utilities because, at the time of his visit to the Antimony Smelter in 2017, the utilities were “disconnected.”⁴⁴⁴ As Ms Russo explains, the key factor is the access to utilities,

⁴³⁸ Second Expert Report of Ms Russo, paras 4.4.7-4.4.14.

⁴³⁹ *Ibid*, paras 4.4.9-4.4.10.

⁴⁴⁰ *Ibid*, paras 1.7, 3.4.1.

⁴⁴¹ Expert Report of Mr Mirones, para 70; First Expert Report of Ms Russo, para 5.15, Table 10.

⁴⁴² Mr Mirones’ also applies an adjustment factor on the basis of the allegedly irregular shape of the land on which the Antimony Smelter is located, which results in a 0.2 further discount. As Ms Russo explains, this type of adjustment is appropriate only when valuing small urbanized land on which the construction of buildings needs to be adapted to the shape of the land, and is therefore not applicable to industrial land such as the land on which the Antimony Smelter is located. Second Expert Report of Ms Russo, paras 4.30-4.32. In any event, Mr Mirones’ adjustment on the basis of the shape of the land is offset by Ms Russo’s proposed adjustment (also resulting in a 0.2 discount) on the basis of the size and use of the land on which the Antimony Smelter is located, which is an adjustment Mr Mirones does not apply in his valuation. Second Expert Report of Ms Russo, paras 4.4.6 and 4.29.

⁴⁴³ *Ibid*, paras 4.27-4.28.

⁴⁴⁴ Expert Report of Mr Mirones, paras 63-66.

- not whether the utilities are engaged at the moment.⁴⁴⁵ As a result, there should be no discount for utilities.⁴⁴⁶
170. *Fifth*, Mr Mirones is wrong to assert that any existing pollution in the land on which the Antimony Smelter is located reduces the land's value.⁴⁴⁷ Bolivia has failed to meet its burden to provide concrete evidence of the alleged pollution, nor has it proven that the pollution was caused by Glencore Bermuda. Indeed, because Colquiri never operated the Antimony Smelter, any pollution would have been caused by the State prior to the privatization or in the decade since Bolivia nationalized the Antimony Smelter.
171. Further, any pollution at the Antimony Smelter has not prevented the industrial use of the land or the land of the neighboring Vinto Tin Smelter over the past decades by its succession of owners—Comibol, Comsur, Glencore Bermuda and Comibol (again). It therefore is reasonable for Ms Russo to assume that any such pollution would not affect the continued industrial use of the land by another owner.⁴⁴⁸
172. *Finally*, the reasonableness of Ms Russo's valuation is corroborated by the purchase price of the Antimony Smelter. When it was privatized, the purchase price of the Antimony Smelter was US\$1.1 million.⁴⁴⁹ If it is only updated for inflation to the date of this Reply on Quantum, the Antimony Smelter's purchase price is worth US\$2.6 million today.⁴⁵⁰ This value does not even account for the

⁴⁴⁵ Second Expert Report of Ms Russo, para 4.28.

⁴⁴⁶ *Ibid*, para 4.28.

⁴⁴⁷ Expert Report of Mr Mirones, paras 36, 41, 43.

⁴⁴⁸ Second Expert Report of Ms Russo, para 3.4.9.

⁴⁴⁹ Antimony Smelter Purchase Agreement, 11 January 2002, C-9, p 9.

⁴⁵⁰ Colquiri paid US\$1.1 million for the Antimony Smelter in January 2002, which corresponds to US\$2.6 million as of today if adjusted by inflation in Bolivia. Bolivia's Consumer Price Index increased from 44.5 in January 2002 to 103.9 in December 2019, and there were no major changes in the USD/BOB exchange rate. *See* Bolivia National Statistics Institute (INE) website, Consumer Price Index, Statistics Tables, Table 1.1 "CPI Base 2016=100," available at:

rise in land values, which increased the value of the Antimony Smelter as described above.

C. THE FAIR MARKET VALUE OF THE TIN STOCK

173. In its First Expert Report, Compass Lexecon calculated the FMV of the Tin Stock to be US\$619,343 as of 30 April 2010 (the day before Bolivia nationalized the Tin Stock).⁴⁵¹ Bolivia's expert, Quadrant, does not dispute the valuation date, methodology that Compass Lexecon used to calculate this value or the quality or price per tonne of the concentrate.⁴⁵² However, Quadrant reduced the amount of the Tin Stock from 161 tonnes of tin concentrate to 157.6 tonnes, resulting in a value of US\$606,264.⁴⁵³
174. Quadrant is wrong to reduce the quantity of Tin Stock. For the amount of Tin Stock, Compass Lexecon relies on a contemporaneous letter dated 3 May 2010 (one day after the physical taking on 2 May 2010) from Colquiri to the Ministry of Mining in which Colquiri requested the return of the Tin Stock and stated that it consisted of "ONE HUNDRED AND SIXTY ONE TONNES of tin concentrate."⁴⁵⁴ Two days later, on 5 May 2010, the Ministry of Mining instructed EMV to return to Colquiri "one hundred and sixty one tonnes of tin concentrate."⁴⁵⁵ Between 5 May and 8 June 2010, Colquiri, the Ministry of Mining and EMV exchanged several letters regarding the Tin Stock and not once

<https://www.ine.gob.bo/index.php/indice-precios-consumidor/introduccion>; Bolivia Central Bank website, Exchange Rates, available at: https://www.bcb.gob.bo/?q=cotizaciones_tc.

⁴⁵¹ First Expert Report of Compass Lexecon, paras 98-99.

⁴⁵² Expert Report of Quadrant, paras 138-139.

⁴⁵³ *Ibid*, paras 138-139.

⁴⁵⁴ Letter from Colquiri (Mr Capriles Tejada) to Ministry of Mining (Mr Pimentel Castillo), 3 May 2010, **C-28**, p 1 (unofficial English translation from Spanish original) (emphasis in original).

⁴⁵⁵ Letter from Ministry of Mining (Mr Pimentel Castillo) to EMV (Mr Ramiro Villavicencio), 5 May 2010, **C-29** (unofficial English translation from Spanish original).

did the Ministry of Mining or EMV dispute that the Tin Stock was comprised of 161 tonnes of tin concentrate.⁴⁵⁶

175. Quadrant ignores the Parties' contemporaneous correspondence regarding the Tin Stock and instead relies on a report dated 23 September 2010 (five months after Bolivia seized the Tin Stock) that was prepared by EMV and stated that the Tin Stock consisted of only 157.6 tonnes of tin concentrate.⁴⁵⁷ The EMV report may have accurately recorded the amount of Tin Stock as of 23 September 2010, but it cannot guarantee that the Tin Stock was not reduced in the five months between when it was seized on 1 May 2010 and 23 September 2010. Colquiri's 3 May 2010 letter therefore is a more credible source of the amount of Tin Stock that was present on 1 May 2010.⁴⁵⁸

IV. GLENCORE BERMUDA IS ENTITLED TO COMPOUND INTEREST ACCRUING AT A COMMERCIAL RATE IN BOLIVIA

A. GLENCORE BERMUDA IS ENTITLED TO INTEREST ACCRUING AT A COMMERCIAL RATE IN BOLIVIA

176. In its Statement of Claim, Glencore Bermuda established that it is entitled to pre- and post-award interest at a rate at least as high as the rate required by Article V of the Treaty to compensate investors when their investments are taken pursuant to a lawful expropriation.⁴⁵⁹ That rate is a "normal commercial or legal rate [...] *in the territory of the expropriating Contracting Party.*"⁴⁶⁰ To award a lower rate

⁴⁵⁶ See Letter from Colquiri (Mr Hartmann) to the Minister of Mining (Mr Pimentel), 5 May 2010, **C-98**; Letter from Colquiri (Mr Capriles) to the Minister of Mining (Mr Pimentel), 10 May 2010, **C-99**; Letter from Colquiri (Mr Capriles) to EMV (Mr Villavicencio), 19 May 2010, **C-100**; Letter from Colquiri (Mr Capriles) to the Minister of Mining (Mr Pimentel), 7 June 2010, **C-101**; Letter from EMV (Mr Villavicencio) to Colquiri (Mr Capriles), 8 June 2010, **C-102**.

⁴⁵⁷ Expert Report of Quadrant, para 139 (citing Certificate of Verification of Tin Concentrates Deposited in the Warehouse of the Plant of the Vinto Metallurgical Company, 23 September 2010, **EO-17**, pp 3, 8-23).

⁴⁵⁸ See Second Expert Report of Compass Lexecon, para 82.

⁴⁵⁹ Statement of Claim, paras 287-290.

⁴⁶⁰ Treaty, **C-1**, Art 5(1) (emphasis added).

would be contrary to the international law principle of full reparation, which governs damages in this arbitration.⁴⁶¹

177. The common standard for “normal commercial” interest rates in Bolivia are the rates published by the Central Bank of Bolivia for commercial loans denominated in US dollars granted by banks to corporations in Bolivia.⁴⁶² As Claimant’s expert, Compass Lexecon, explains, these rates reflect the interest rates that are available to private, commercial enterprises in Bolivia that are not in financial distress.⁴⁶³
178. The applicable interest rates as published by the Central Bank of Bolivia are: (i) 8.6% as of February 2007 (for Vinto); (ii) 6.1% as of April 2010 (for the Tin Stock); (iii) 6.4% as of May 2012 (for Colquiri); and (iv) 6.7% as of 2019 (as a proxy for the date of the award, which is the valuation date for the Antimony Smelter).⁴⁶⁴ These rates apply equally for pre- and post-award interest.⁴⁶⁵
179. Ignoring the clear text of the Treaty, Bolivia asserts that the rates published by the Central Bank of Bolivia, which Compass Lexecon applies in its Reports, would unjustly enrich Glencore Bermuda and are punitive in nature.⁴⁶⁶ Bolivia advocates for the application of a risk-free rate equal to the six-month or the one-year US

⁴⁶¹ Statement of Claim, paras 287-289.

⁴⁶² Second Expert Report of Compass Lexecon, para 117; First Expert Report of Compass Lexecon, para 101.

⁴⁶³ Second Expert Report of Compass Lexecon, para 117; First Expert Report of Compass Lexecon, para 101.

⁴⁶⁴ Second Expert Report of Compass Lexecon, paras 120-122 and footnote 218. The dates of valuation for each Asset are as follow: Colquiri—29 May 2012; Vinto—8 February 2007; Antimony Smelter—22 January 2020 (as a proxy for the date of the award); Tin Stock—30 April 2010. With respect to the Antimony Smelter, which should be valued as of the date of the award, only post-award interest would apply, unless the Tribunal fixes an earlier valuation date. In that case, Claimant is entitled to pre-award and post-award interest on the damages awarded in compensation for the taking of the Antimony Smelter. For the interest rate as of the date of the award, Compass Lexecon provides the average of interest rates published by the Central Bank of Bolivia in 2019, which are the most recent available rates. Second Expert Report of Compass Lexecon, footnote 218.

⁴⁶⁵ Statement of Claim, para 292.

⁴⁶⁶ Statement of Defense, para 913.

Treasury bill rates, because the damages granted in an arbitral award allegedly are risk free.⁴⁶⁷ Alternatively, Bolivia requests a rate equal to US LIBOR plus 1%, because Claimant’s parent company, Glencore International, has previously secured loans at that rate.⁴⁶⁸ Without justification, Bolivia is seeking to pay a lower interest rate on damages caused by its *unlawful* expropriation of the Investments than it would have to pay for a *lawful* expropriation under the Treaty. Bolivia’s position cannot stand.

180. *First*, it is well established that the interest rates published by the Central Bank of Bolivia for commercial loans denominated in US dollars are indicative of “normal commercial rates” in Bolivia as mandated by the Treaty. The two other arbitral tribunals that have applied Article V of the Treaty—the tribunals in *South American Silver v Bolivia* and *Rurelec v Bolivia*—relied on the rates published by the Central Bank of Bolivia.⁴⁶⁹ These tribunals applied the Central Bank’s published rates with good reason—those rates are based on data collected by the Central Bank regarding the actual rates of commercial loans in Bolivia and therefore measure “normal” commercial interest rates in Bolivia as required by the Treaty.⁴⁷⁰

181. *Second*, contrary to Bolivia’s assertion, the interest rates published by the Central Bank of Bolivia would not unjustly enrich Glencore Bermuda and are not punitive. In addition to being the rates mandated by the Treaty, the interest rates published by the Central Bank are lower than the rates at which Bolivia could have borrowed funds had it promptly compensated Glencore Bermuda as required

⁴⁶⁷ *Ibid*, para 928.

⁴⁶⁸ *Ibid*, paras 928, 931.

⁴⁶⁹ *South American Silver Limited (Bermuda) v The Plurinational State of Bolivia* (PCA Case No 2013-15) Award, Dissenting Opinion, and Separate Opinion, 22 November 2018, **CLA-252**, paras 891-892; *Guaracachi America, Inc and Rurelec Plc v Plurinational State of Bolivia* (UNCITRAL) Award, 31 January 2014, **CLA-120**, para 615.

⁴⁷⁰ Second Expert Report of Compass Lexecon, para 117.

by the Treaty. Bolivia's expert, Quadrant, calculates Bolivia's borrowing rate at 13.69% for 2007 and 8.6% for 2012.⁴⁷¹

182. The interest rates published by the Central Bank also are modest as compared to the rate of return that Glencore Bermuda would have expected to receive from its Investments but for Bolivia's breaches of the Treaty.⁴⁷² For example, the Central Bank's published rates are low as compared to Colquiri's and Vinto's costs of debt (a potential measure of interest), which Bolivia's own expert, Quadrant, calculates as 12.6% for Colquiri (as of June 2012) and 15.7% for Vinto (as of February 2007).⁴⁷³ Similarly, the interest rates that would make Glencore Bermuda whole are equal to the discount rates that Compass Lexecon calculated for the Investments (*ie*, 12.3% for Colquiri and 15.7% for Vinto), which are materially higher than the Central Bank's published rates.⁴⁷⁴
183. Further, the reasonableness of the interest rates proposed by Glencore Bermuda is corroborated by the awards in *South American Silver v Bolivia* and *Rurelec v Bolivia*, which awarded interest rates published by the Central Bank of Bolivia of 6.5% (as of July 2012) and 5.63% (as of May 2010), respectively—*ie*, rates similar to those applicable in this arbitration.⁴⁷⁵ Likewise, the reasonableness of

⁴⁷¹ *Ibid*, para 123 and footnote 220. *See also* Expert Report of Quadrant, Table 5. For 2007, the 13.69% is calculated by adding the Risk-Free Rate (4.94%) to the Country Debt Risk Premium (8.75%). For 2012, the 8.61% is calculated by adding the Risk-Free Rate (1.59%) to the Country Debt Risk Premium (7.02%).

⁴⁷² As explained in Section II.A, several tribunals have held that the principle of full reparation justifies applying interest rates reflecting the claimant investor's lost opportunity/lost return on investment. *See, eg, Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, **CLA-70**, paras 9.2.3-9.2.8.

⁴⁷³ Second Expert Report of Compass Lexecon, paras 120-121.

⁴⁷⁴ *Ibid*, para 83. *See* M Abdala, PD López Zadicoff, and PT Spiller, "Invalid Round Trips in Setting Pre-Judgment Interest in International Arbitration" (2011) Vol 5 No 1 World Arbitration & Mediation Review 1, **CLEX-071**, p 4. *See also* M Abdala, PD López Zadicoff, and PT Spiller, "Prejudgment Interest and the Fallacy of the Invalid Round Trip: A Reply" (2016) Vol 10 No 3 World Arbitration & Mediation Review 445, **CLEX-072**.

⁴⁷⁵ *South American Silver Limited (Bermuda) v The Plurinational State of Bolivia* (PCA Case No 2013-15) Award, Dissenting Opinion, and Separate Opinion, 22 November 2018, **CLA-252**, paras 763, 892; *Guaracachi America, Inc and Rurelec Plc v Plurinational State of Bolivia* (UNCITRAL) Award, 31 January 2014, **CLA-120**, para 615.

Glencore Bermuda's proposed rates is also demonstrated by the cost of financing for corporations in Latin America from 2007 to 2019, which averaged between 5.5% and 9.4%—again, rates similar to the rates applicable here.⁴⁷⁶

184. *Third*, Bolivia's assertion that a risk-free or US LIBOR-based interest rate should apply misses the mark. These rates are not indicative of "normal commercial" rates in Bolivia. The risk-free rate relies on US Treasury bill rates, and the US LIBOR rate relies on the borrowing rate of Claimant's Swiss parent company, Glencore International.⁴⁷⁷ The risk-free rate also is inappropriate because it is based on rates for short-term debt (the six-month or one-year US Treasury bill rates), which garner lower interest rates than long-term debt, and Bolivia has owed Glencore Bermuda compensation for over a decade, requiring the higher interest rates that apply to long-term debt.⁴⁷⁸ Not surprisingly, Bolivia proposed similar interest rates in *South American Silver* and *Rurelec*, and those tribunals roundly rejected them as not reflecting the interest rates required by the Treaty.⁴⁷⁹
185. *Fourth*, Bolivia cannot justify the application of a risk-free rate on the basis that an arbitration award is risk free.⁴⁸⁰ The interest rate mandated by the Treaty does not hinge on whether Bolivia will pay an award; the Treaty rate is a proxy for an investor's expected return on its investment in Bolivia, and those returns are not risk free.⁴⁸¹ As Professors S  n  chal and Gotanda explain:

⁴⁷⁶ Second Expert Report of Compass Lexecon, footnote 214.

⁴⁷⁷ *Ibid*, paras 118-122, 128.

⁴⁷⁸ *Ibid*, paras 119, 124.

⁴⁷⁹ *South American Silver Limited (Bermuda) v The Plurinational State of Bolivia* (PCA Case No 2013-15) Award, Dissenting Opinion, and Separate Opinion, 22 November 2018, **CLA-252**, paras 794, 892 (rejecting Bolivia's contention that the interest rate to apply should be the risk-free U.S. Treasury rate (0.21%) or, in the alternative, an estimated risk-free annual interest rate of 2.9%); *Guaracachi America, Inc and Rurelec Plc v Plurinational State of Bolivia* (UNCITRAL) Award, 31 January 2014, **CLA-120**, paras 610, 615 (rejecting Bolivia's contention that the interest rate to apply should be US LIBOR + 2%).

⁴⁸⁰ Statement of Defense, para 928.

⁴⁸¹ Second Expert Report of Compass Lexecon, paras 119, 126.

[A]bove all, businesses do exist to generate shareholder value and positive net present values (NPVs) for investors. Therefore, it is not correct to assume that the claimant is not compensated for the returns generated in a consistent manner over the years. As such, interest should not be awarded at the risk-free interest rate. As a result, an investor is right in asking for a rate above the risk-free rate.⁴⁸²

186. For the same reason, Bolivia’s alternative proposal that the Tribunal peg the interest rate to US LIBOR plus 1% is inappropriate—it “ignores the reality that businesses typically invest in opportunities that have a significantly greater amount of risk than [...] LIBOR rates” as Professors Sénéchal and Gotanda explain.⁴⁸³ A LIBOR-based rate therefore is insufficient, because, as would be the case here, the rate would not reflect Glencore Bermuda’s true loss. Furthermore, Bolivia’s assertion that a rate of US LIBOR plus 1% is justified because Claimant’s parent company, Glencore International, has previously secured loans at that rate is misplaced.⁴⁸⁴ Glencore International’s borrowing rate has no bearing on the interest rate that should be applied under the Treaty.⁴⁸⁵ As explained in the prior paragraph, the Treaty rate is a proxy for *Glencore Bermuda’s* expected return on *its Investments* in Bolivia.

187. *Finally*, the Tribunal should reject the low interest rates proposed by Bolivia, because they would reward it for illegally expropriating Glencore Bermuda’s Investments. Bolivia’s proposed rates would reward it for its wrongdoing, because the rates are materially lower than the rates at which Bolivia could have borrowed funds had it promptly compensated Glencore Bermuda as required by the Treaty. As explained above, Quadrant calculates Bolivia’s borrowing rate at 13.69% for

⁴⁸² TJ Sénéchal and JY Gotanda, “Interest as Damages” (2008-2009) Vol 47 Columbia Journal of Transnational Law 491, **CLA-75**, pp 36-37.

⁴⁸³ *Ibid*, p 20.

⁴⁸⁴ Statement of Defense, para 931.

⁴⁸⁵ Second Expert Report of Compass Lexecon, para 123 and Expert Report of Quadrant, Table 5. For 2007 the 13.69% is calculated by adding the Risk-Free Rate (4.94%) to the Country Debt Risk Premium (8.75%) and for 2012, the 8.61% is calculated by adding the Risk-Free Rate (1.59%) to the Country Debt Risk Premium (7.02%).

2007 and 8.6% for 2012—*ie*, rates that are several multiples higher than the interest rates that Bolivia asserts should apply to Glencore Bermuda’s losses.⁴⁸⁶

B. INTERNATIONAL LAW RECOGNIZES GLENCORE BERMUDA’S RIGHT TO COMPOUND INTEREST

188. The Tribunal’s award of pre- and post-award interest should accrue on a compound basis in order to reflect fully the time value of Glencore Bermuda’s losses.⁴⁸⁷ While it was not always the case, as explained in Section II.A above, the practice of awarding compound interest is now so widely accepted as necessary to fulfill the full reparation principle that arbitral tribunals have described it as “*jurisprudence constante*” in investment-treaty cases.⁴⁸⁸ Similarly, commentary on arbitral awards has been “unified in its criticism of the simple interest rule,” and confirms that a survey of international investment tribunal awards leads to the unavoidable conclusion that “compound interest has come to be treated as the default solution.”⁴⁸⁹

189. In the face of the weight of this legal authority, Bolivia can cite only a few inapposite arbitral decisions, including a number of clearly ageing awards. One of these decisions—the award in *Yukos v Russia*—in fact supports Claimant’s position that the award of compound interest is now the norm in investment-treaty arbitrations.⁴⁹⁰ In the remaining cases, the tribunals either held that no treaty

⁴⁸⁶ Second Expert Report of Compass Lexecon, para 127.

⁴⁸⁷ Statement of Claim, para 291.

⁴⁸⁸ *Gemplus SA and others v United Mexican States, and Talsud SA v United Mexican States* (ICSID Case Nos ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, **CLA-98**, paras 16-26; *OKO Pankki Oyj and others v. Republic of Estonia*, ICSID Case No. ARB/04/6, Award, 19 November 2007, **RLA-79**, para 349.

⁴⁸⁹ S Ripinsky and K Williams, *Damages in International Investment Law* (1st edn 2008), **CLA-74**, pp 383, 387. *See also* J Gotanda, “A Study of Interest” (2007) Villanova Law Working Paper Series, **CLA-65**, p 35; TJ Sénéchal and JY Gotanda, “Interest as Damages” (2008-2009) Vol 47 Columbia Journal of Transnational Law 491, **CLA-75**, pp 18-19.

⁴⁹⁰ *Yukos Universal Limited (Isle of Man) v Russian Federation* (PCA Case No AA 227) Final Award, 18 July 2014, **CLA-122**, para 1689 (recognizing that the awarding of compound interest under international law now represents a form of *jurisprudence constante* in investor-state expropriation cases, but concluding that, in the specific circumstances of the case, only post-award

breach had occurred or followed the now outdated practice of awarding simple interest.⁴⁹¹

190. What is more, Bolivia's assertion that a prohibition on compound interest contained in the Bolivian Civil Code applies in this arbitration is wrong.⁴⁹² This is an international dispute in which Glencore Bermuda seeks compensation for the violations of its rights under international law. The law governing damages is customary international law, not Bolivian law.⁴⁹³
191. In at least three investment treaty arbitrations to date, including the two other arbitrations under the Treaty (*South American Silver* and *Rurelec*), Bolivia has made this same argument under Bolivian law, and in each case the tribunal rejected Bolivia's argument.⁴⁹⁴ As the tribunal in *Quiborax v Bolivia* explained, Bolivian law does not apply in BIT arbitrations:

The Tribunal is not persuaded that it is appropriate to apply national law to the issue of compound interest. Reparation for expropriation is governed by international law and full reparation includes interest for late payment. The application of national law may be appropriate for contract claims, but not for a claim of breaches of the BIT [...].⁴⁹⁵

interest should be compounded annually following the expiration of the grace period granted to the respondent to pay the claimant's damages in full).

⁴⁹¹ *Archer Daniels Midland Company and Tate & Lyle Ingredients Americas, Inc. v. The United Mexican States*, ICSID Case No. ARB(AF)/04/05, Award, 21 November 2007, **RLA-114**, para 296; *Mr Franck Charles Arif v. Republic of Moldova*, ICSID Case No. ARB/11/23, Award, 8 April 2013, **RLA-69**, paras 421, 510, 556, 607, 614; *CME Czech Republic BV v Czech Republic* (UNCITRAL) Final Award, 14 March 2003, **CLA-42**, para 644.

⁴⁹² Statement of Defense, paras 945-946.

⁴⁹³ See Section II.A; Statement of Claim, Section VI.A.1.

⁴⁹⁴ *Quiborax SA and Non Metallic Minerals SA v Plurinational State of Bolivia* (ICSID Case No ARB/06/2) Award, 16 September 2015, **CLA-127**, para 520; *South American Silver Limited (Bermuda) v The Plurinational State of Bolivia* (PCA Case No 2013-15) Award, Dissenting Opinion, and Separate Opinion, 22 November 2018, **CLA-252**, para 894; *Guaracachi America, Inc and Rurelec Plc v Plurinational State of Bolivia* (UNCITRAL) Award, 31 January 2014, **CLA-120**, paras 611, 616-617.

⁴⁹⁵ *Quiborax SA and Non Metallic Minerals SA v Plurinational State of Bolivia* (ICSID Case No ARB/06/2) Award, 16 September 2015, **CLA-127**, para 520.

192. Moreover, as the tribunals in *South American Silver* and *Rurelec* held, even if Bolivian law applied, it would allow the award of compound interest since Bolivian law does not prohibit compound interest in commercial matters.⁴⁹⁶

193. Accordingly, all interest awarded to Glencore Bermuda should be subject to reasonable compounding. Pursuant to the standards in economics and finance, the appropriate periodicity of the compounding is annual.⁴⁹⁷

V. GLENCORE BERMUDA IS ENTITLED TO AN AWARD EXEMPT FROM TAXATION BY BOLIVIA

194. In its Statement of Claim, Glencore Bermuda requested that the Tribunal declare that: (i) its Award is made net of all applicable Bolivian taxes; and (ii) Bolivia may not tax or attempt to tax the Award.⁴⁹⁸ This is because Glencore Bermuda's valuations were prepared net of Bolivian taxes on the award.⁴⁹⁹ Consequently, any taxation by Bolivia of the Tribunal's award would result in Glencore Bermuda being taxed twice for the same income.⁵⁰⁰ Bolivia has not contested this request thus accepting that the award should be exempt from taxation by Bolivia.

⁴⁹⁶ *South American Silver Limited (Bermuda) v The Plurinational State of Bolivia* (PCA Case No 2013-15) Award, Dissenting Opinion, and Separate Opinion, 22 November 2018, **CLA-252**, para 894 (finding that the limit on interests set out in the Civil Code would not apply to commercial matters); *Guaracachi America, Inc and Rurelec Plc v Plurinational State of Bolivia* (UNCITRAL) Award, 31 January 2014, **CLA-120**, paras 611, 616-617 (“[T]he Tribunal doubts that any prohibition of compound interest that may exist under Bolivian law is applicable to commercial loans, as opposed to consumer loans.”). Under Bolivian law, compound interest is authorized in commercial matters, because the Bolivian Commerce Code, rather than the Civil Code, governs in commercial matters subject to Bolivian law, and Article 800 of the Bolivian Commerce Code expressly allows the award of compound interest in commercial disputes. Bolivian Commerce Code, 25 February 1977, **C-307**, Art 800.

⁴⁹⁷ See Second Expert Report of Compass Lexecon, paras 129-130.

⁴⁹⁸ Statement of Claim, para 294.

⁴⁹⁹ *Ibid*, para 293.

⁵⁰⁰ *Ibid*, para 293.

VI. THERE IS NO BASIS TO REDUCE GLENCORE BERMUDA'S DAMAGES

195. Bolivia seeks to reduce the amount of damages it owes Glencore Bermuda with two affirmative defenses: (i) that Glencore Bermuda allegedly “contributed” to the losses it suffered with respect to Colquiri and Vinto,⁵⁰¹ and (ii) [REDACTED]
[REDACTED]
[REDACTED].⁵⁰² Bolivia’s affirmative defenses have no basis in either law or fact, and should thus be rejected.⁵⁰³

A. BOLIVIA HAS FAILED TO PROVE THAT GLENCORE BERMUDA'S DAMAGES CLAIMS SHOULD BE REDUCED FOR CONTRIBUTORY FAULT

196. Bolivia advocates that any compensation to Claimant for Colquiri and Vinto should be reduced by 75% and at least 50%, respectively, to reflect Claimant’s alleged contribution to its own damages.⁵⁰⁴ Bolivia’s argument has no basis in law or fact.

197. The threshold for finding contributory fault is high. As the Commentary to ILC Article 39 (on which Bolivia itself relies) explains:

Not every action or omission which contributes to the damage suffered is relevant for this purpose. Rather, article 39 allows to be taken into account *only* those actions or omissions which can be considered as *wilful or negligent, i.e. which manifest a lack of due care on the part of the victim of the breach for his or her own property or rights.*⁵⁰⁵

⁵⁰¹ Statement of Defense, Section 7.5.

⁵⁰² *Ibid*, para [REDACTED].

⁵⁰³ Bolivia has not raised any affirmative defenses in connection with either the Antimony Smelter or the Tin Stock.

⁵⁰⁴ Statement of Defense, para [REDACTED].

⁵⁰⁵ International Law Commission, “Draft articles on Responsibility of States for Internationally Wrongful Acts with commentary” [2001-II(2)] Yearbook of the International Law Commission, 2001, **CLA-30**, Art 39, Comment 5 (emphasis added).

198. Furthermore, as stated in *Occidental v Ecuador*, “it is not any contribution by the injured party to the damage which it has suffered which will trigger a finding of contributory negligence. The contribution must be material and significant.”⁵⁰⁶
199. In the rare instances where tribunals have reduced the amount of damages on the grounds of contributory fault, the investor has typically committed serious wrongdoing, such as breaching the laws of the host state.⁵⁰⁷ In contrast, when the investor engages in common business practices and the respondent’s measures are the primary cause of the investor’s injury, damages should not be reduced.⁵⁰⁸

⁵⁰⁶ *Occidental Petroleum Corporation and Occidental Exploration and Production Company v Republic of Ecuador* (ICSID Case No ARB/06/11) Award, 5 October 2012, **CLA-254**, para 670 (emphasis added). See also *Yukos Universal Limited (Isle of Man) v Russian Federation* (PCA Case No AA 227) Final Award, 18 July 2014, **CLA-122**, para 1600; *Burlington Resources, Inc v Republic of Ecuador* (ICSID Case No ARB/08/5) Decision on Reconsideration and Award, 7 February 2017, **CLA-134**, para 576.

⁵⁰⁷ In *Occidental v Ecuador*, the tribunal determined that the claimant’s failure to obtain proper ministerial authorization to transfer 40% of its rights under its Participation Contract with Ecuador to a third party had breached Ecuadorian law and forced Ecuador to terminate the contract by decree, and thus warranted a reduction in compensation awarded. *Occidental Petroleum Corporation and Occidental Exploration and Production Company v Republic of Ecuador* (ICSID Case No ARB/06/11) Award, 5 October 2012, **CLA-254**, para 680. Similarly, in *Yukos v Russian Federation*, the tribunal found that certain acts by Yukos “breached the legislation and abused the low tax regimes” through “sham-like” operations, and that “Yukos’ tax avoidance arrangements in some of the low-tax regions made it possible for Respondent to invoke and rely on that conduct as a justification of its actions.” *Yukos Universal Limited (Isle of Man) v Russian Federation* (PCA Case No AA 227) Final Award, 18 July 2014, **CLA-122**, paras 1611, 1614.

⁵⁰⁸ For example, in *Enron*, the tribunal rejected Argentina’s argument that the investor’s “aggressive leveraging policy” increased the company’s “vulnerability to changing economic conditions,” and instead found that the investor’s leveraging was “reasonable by industry standards and close to that advised by the regulator,” and that in the absence of the respondent’s economic policy measures, the investment would not have lost its value. *Enron Corporation and Ponderosa Assets LP v Argentine Republic* (ICSID Case No ARB/01/3) Award, 22 May 2007, **CLA-68**, paras 371-375. Likewise, in *CME v Czech Republic*, the tribunal recognized that by changing the Media Law, the Czech Republic destroyed “the legal basis of the Claimant’s investment.” It rejected the respondent’s allegation that the investor’s decision to give up a license agreement caused the destruction of the company, and instead stressed the heavy hand laid by the respondent in bringing about the situation, saying that without the respondent’s participation, the claimant’s license would not have been rendered useless. *CME Czech Republic BV v Czech Republic* (UNCITRAL) Partial Award, 13 September 2001, **CLA-32**, paras 575-579, 593. In *Yukos v Russian Federation*, the tribunal held that Yukos’s failure to pay off a loan was too remote to constitute contributory fault because the respondent would have found other grounds for “pushing Yukos into bankruptcy”⁵⁰⁸ regardless of the claimant’s action. *Yukos Universal Limited (Isle of Man) v Russian Federation* (PCA Case No AA 227) Final Award, 18 July 2014, **CLA-122**, para 1631.

200. Bolivia has failed to articulate any allegations that rise to the level of contributory fault, much less proven those allegations. With respect to Colquiri, Bolivia alleges that Glencore Bermuda contributed to its damages because it purportedly “mismanaged” social conflicts at the Mine, including by: (i) requesting the State’s protection at the “eleventh hour,” and (ii) entering into the Rosario Agreement, thereby “forcing” the State to expropriate Glencore Bermuda’s investment in the Mine.⁵⁰⁹ In relation to Vinto, Glencore Bermuda allegedly was “fully aware” when it acquired Vinto that the Tin Smelter “might be reverted to the State” because of purported “irregularities” in the privatization of the Smelter in 2001.⁵¹⁰
201. As explained above (in Section II.B.3), these allegations rest on factual assertions that Bolivia made and Glencore Bermuda disproved in relation to Bolivia’s defenses to the Tribunal’s jurisdiction and the merits of Glencore Bermuda’s claims.⁵¹¹ If the Tribunal has concluded that it has jurisdiction over Claimant’s claims and that Bolivia is liable on the merits of those claims, then the Tribunal has previously dismissed these factual allegations, and Bolivia cannot reargue them in its defense of Claimant’s damages.⁵¹²

⁵⁰⁹ Statement of Defense, para 956.

⁵¹⁰ *Ibid*, paras 958-959.

⁵¹¹ *Ibid*, paras 312-313, 471-477, 685; Reply on the Merits, paras 165-170, 295-297, 442-454; Rejoinder on the Merits, paras 287-320, 410-420; Rejoinder on Jurisdiction, paras 111-112; Opening Statement of Claimant, Day 1, Transcript (English) 34:1-8, 39:24 – 40:10, 43:15 – 45:10, 55:18 – 60:6 (Spanish translation at Opening Statement of Claimant, Day 1, Transcript (Spanish) 44:21 – 45:8, 53:11 – 54:1, 58:14 – 61:3, 73:20 – 78:22); Opening Statement of Respondent, Day 1, Transcript (English) 97:11-14, 113:5-15 (Spanish translation at Opening Statement of Respondent, Day 1, Transcript (Spanish) 127:15-18, 148:16-149:5); Closing Statement of Claimant, Day 4, Transcript (English) 818:8 – 820:15, 828:21 – 829:8, 834:16 – 836:6 (Spanish translation at Closing Statement of Claimant, Day 4, Transcript (Spanish) 1055:22 – 1059:5, 1069:22 – 1070:15, 1077:19 – 1079:22; Closing Statement of Respondent, Day 4, Transcript (English) 841:17-25, 874:9 – 875:6 (Spanish translation at Closing Statement of Respondent, Day 4, Transcript (Spanish) 1086:9-19, 1128:14 – 1129:18).

⁵¹² *CME Czech Republic BV v Czech Republic* (UNCITRAL) Final Award, 14 March 2003, **CLA-42**, paras 414-424; *Occidental Petroleum Corporation and Occidental Exploration and Production Company v Republic of Ecuador* (ICSID Case No ARB/06/11) Award, 5 October 2012, **CLA-254**, paras 291-296; *RREEF Infrastructure (GP) Limited and RREEF Pan-European Infrastructure Two Lux Sàrl v Kingdom of Spain* (ICSID Case No ARB/13/30) Decision on Responsibility and on the Principles of Quantum, 30 November 2018, **CLA-257**, paras 208-209; *CMS Gas*

202. Even if Bolivia could reopen these factual arguments (it cannot), the evidentiary record in this arbitration has proven that Bolivia’s allegations are false and that, at a minimum, Glencore Bermuda did not contribute to its damages—*ie*, it did not act in a willful or negligent manner that made a material contribution to its losses. With regard to Colquiri, Claimant has proven that the State had decided by at least 10 May 2012 to nationalize the Mine.⁵¹³ As a result, contrary to Bolivia’s theory of contributory fault, the State had decided to expropriate Colquiri several weeks before the blockade of the Mine by the *cooperativistas* on 30 May 2012 and the subsequent events that supposedly “forced” Bolivia to expropriate the Mine had even occurred.
203. Furthermore, Glencore Bermuda did not wait until the “eleventh hour” to request the State’s protection at the Colquiri Mine.⁵¹⁴ Glencore Bermuda was in regular communication with the State regarding relations with the *cooperativistas*. From the date that Glencore Bermuda acquired the Colquiri Lease in 2005 through 2011, Bolivia and Comibol collaborated with Glencore Bermuda to successfully manage the Mine and relations with the *cooperativistas*.⁵¹⁵ Indeed, as the owner of the Colquiri deposit, Comibol had final authority over any agreement that granted the *cooperativistas* rights to mine the deposit.⁵¹⁶ However, in the first

Transmission Company v Republic of Argentina (ICSID Case No ARB/01/8) Award, 12 May 2005, **CLA-57**, para 126.

⁵¹³ Reply on the Merits, paras 146-161; Rejoinder on Jurisdiction, para 129; Closing Statement of Claimant, Transcript, Day 4 (English) 828:20 – 831:13 (Spanish translation at Closing Statement of Claimant, Transcript, Day 4 (Spanish) 1069:22 – 1073:17).

⁵¹⁴ Statement of Defense, para 685.

⁵¹⁵ Opening Statement of Claimant, Day 1, Transcript (English) 42:21 – 43:14.

⁵¹⁶ See Colquiri Lease, **C-11**, Clause 12.1.6; Cross-Examination of Mr E Lazcano, Day 2, Transcript (English) 360:1-7, 386:10-14, 394:10-22 (Spanish original at Cross-Examination of Mr E Lazcano, Day 2, Transcript (Spanish) 428:2-11, 463:16 – 464:1, 475:7-20). See also Cross-Examination of Mr H Córdova, Day 2, Transcript (English) 435:13 – 436:5, 436:9-25, 449:6 – 451:2 (Spanish original at Cross-Examination of Mr H Córdova, Day 2, Transcript (Spanish) 533:4-19, 534:4 – 535:2, 552:2 – 553:5) (confirming that it was the responsibility of a dedicated team within Comibol to handle the relationship with *cooperativas*, and that any agreements concluded between Sinchi Wayra and the *cooperativas* would have to be approved by Comibol, as owner of the mine, before they became formalized). In the seven years that Sinchi Wayra operated the Colquiri Mine (from 2005 to May 2012), there was only one occasion in which Comibol assigned working areas to the cooperatives. In October 2009, Comibol granted the *Cooperativa 26*

quarter of 2012, as high mineral prices motivated the *cooperativistas* to seek access to new areas of the deposit,⁵¹⁷ Bolivia stopped collaborating with Glencore Bermuda. In response to increasingly aggressive behavior by the *cooperativistas* in early 2012, the Colquiri Workers' Union requested State intervention on 29 March 2012,⁵¹⁸ and Colquiri requested State intervention on 3 April⁵¹⁹ and 30 May 2012.⁵²⁰ Despite these repeated calls for assistance, the State failed to intervene to protect Glencore Bermuda's interests.⁵²¹

de Febrero rights to work at level -325 of the mine—an area of the Colquiri Mine in which Colquiri was no longer operating. Public Deed No. 0215/2009, amendment to the lease agreement between COMIBOL and the Cooperativa 26 de Febrero, 21 October 2009, **R-210**, pp 4, 6-7. In April 2004 (prior to Glencore Bermuda's acquisition of the Colquiri Lease), Comibol granted the *Cooperativa 21 de Diciembre* a working in a Colquiri tailings dam, which the Cooperative continued to exploit after Glencore Bermuda took over the Mine. Agreement between Fencomin, Fedecomín La Paz, Fedecomín Oruro, Workers of the Cooperativas 26 de Febrero and 21 de Diciembre, Colquiri, the Vice Ministry of Mining, and Comibol, 21 May 2004, **C-193**, p 2; Memorandum of Definitive Understanding between Comibol, Cooperativa 21 de Diciembre, Colquiri, Fencomin and Fedecomín La Paz, 15 June 2005, **C-212**, p 1; Letter from COMIBOL Technical Manager to the President of COMIBOL, 20 April 2005, **R-153**, pp 1-3; Public deed of sublease of tailings, subscribed by Compañía Minera Colquiri S.A. and the Cooperativa "21 de Diciembre Colquiri LTDA", 10 March 2006, **R-39** (while the public deed was obtained on 10 March 2006, the agreement itself is dated 6 December 2005). *See* Reply on the Merits, para 152, Footnote 415; Second Witness Statement of Eduardo Lazcano, para 23; Cross-Examination of Mr E Lazcano, Day 2, Transcript (English) 345:8-15 (Spanish original at Cross-Examination of Mr E Lazcano, Day 2, Transcript (Spanish) 407:12-21). *See also* Rejoinder on Jurisdiction, paras 121-124.

⁵¹⁷ Reply on the Merits, para 159; Second Witness Statement of Eduardo Lazcano, para 26.

⁵¹⁸ Colquiri Union General Assembly's Resolution, 14 March 2012, **C-248**; Letter from Colquiri Union (Mr Estallani) to the Ministry of the Presidency (Mr Romero), 29 March 2012, **C-251**. *See also* Reply on the Merits, paras 113-114, 123-124, 443-444.

⁵¹⁹ Letter from Colquiri (Mr Capriles Tejada) to Comibol (Mr Cordova Eguivar), 3 April 2012, **C-30**; *see also* Statement of Claim, paras 87-88, 93-97; Reply on the Merits, paras 113-114, 123-124. *See also* Cross-Examination of Mr E Lazcano, Day 2, Transcript (English) 378:18 – 379:16, 413:20 – 415:5 (Spanish original at Cross-Examination of Mr E Lazcano, Day 2, Transcript (Spanish) 453:13 – 454:19, 502:10 – 504:12).

⁵²⁰ Letter from Colquiri (Mr Capriles Tejada) to Comibol (Mr Cordova Eguivar), 30 May 2012, **C-31**; *see also* Statement of Claim, paras 94-95, 184(f). *See also*, Reply on the Merits, paras 113-114, 123-124, 443-444.

⁵²¹ Statement of Claim, para 184(g). *See also*, Reply on the Merits, paras 113-114, 123-124, 443-444. At the Hearing, Bolivia's witness, Mr Romero, admitted that he failed to intervene to protect Claimant's investments at the Mine even after he received requests for assistance from Colquiri and the Colquiri Workers' Union in March and April 2012. Direct Examination of C Romero, Transcript, Day 3 (English) 585:1 – 586:4, 586:18-25 (Spanish original at Direct Examination of C Romero Transcript, Day 3 (Spanish) 736:15 – 738:13, 995:6-15); Cross Examination of C

204. Likewise, rather than stoke conflict, the Rosario Agreement of 8 June 2012 between Colquiri, the *cooperativistas* and the Ministry of Mining, actually solved the conflict with the *cooperativistas*, who lifted the blockade of the Colquiri Mine, which they had initiated on 30 May 2012.⁵²² In addition, because the State was a party to and approved the Rosario Agreement,⁵²³ Bolivia cannot now allege

Romero, Transcript, Day 3 (English) 611:3 – 624:17 (Spanish original at Cross Examination of C Romero, Transcript, Day 3 (Spanish) 771:12 – 789:4).

⁵²² See Questions from Tribunal Directed to Mr E Lazcano, Day 2, Transcript (English) 407:10-20 (Spanish original at Questions from Tribunal Directed to Mr E Lazcano, Day 2, Transcript (Spanish) 492:18 – 493:8); Cross Examination of H Córdova, Transcript, Day 2 (English) 446:25 – 447:9 (Spanish original at Cross Examination of H Córdova, Transcript, Day 2 (Spanish) 549:3-14). See also Cross Examination of H Córdova, Transcript, Day 2 (English) 451:18 – 452:4 (Spanish original at Cross Examination of H Córdova, Transcript, Day 2 (Spanish) 555:13-556:7). As explained above, Glencore Bermuda never regained control of the Mine after the Rosario Agreement because, beginning the 10 June 2012, conflicting agreements that the State had entered into with the *cooperativas* and mine workers' unions caused violent clashes in Colquiri between those two groups. In short, the Government entered into the Rosario Agreement assuring the *cooperativistas* that they would have control over the exploitation of the Mine's Rosario vein, and a few days later the Government concluded a separate agreement with the union workers promising the nationalization of the entire Colquiri Mine including the Rosario vein. The situation turned violent when it became clear that the union workers opposed ceding working areas to the cooperatives and the *cooperativistas* were not willing to lose what they had just gained through the Rosario Agreement. Statement of Claim, paras 106-107, 110; Reply on the Merits, paras 132-143; "Rechazan preacuerdo para nacionalización de la mina Colquiri," *El Potosí*, 10 June 2012, **C-127**; "Mineros retomarán Colquiri y bloquearán los caminos," *Página Siete*, 10 June 2012, **C-126**; "Revertirán concesiones si no hay inversión," *La Razón*, 12 June 2012, **C-131**. Minutes of Agreement between COMIBOL, Federación Sindical de Trabajadores Mineros de Bolivia, Central Obrera Boliviana, Cooperativa 26 de Febrero and authorities of Colquiri, 8 June 2012, **R-345**; Minutes of Agreement among Fencomin, Fedecomín, Central Local de Cooperativas Mineras de Colquiri, Cooperativa Minera Collpa Cota, Cooperativa Minera Socavón Inca, Cooperativa 26 de Febrero, the Minister of Mining, the Vice Minister of Productive Mining and Metallurgic Development, Comibol, and the Legal Director of the Ministry of Mining, 12 June 2012, **C-129**; Letter from the SMTC to the Vice President of Bolivia (Mr García Linera), 14 June 2012, **R-279**.

⁵²³ Rosario Agreement, **C-35**, Art 1 (the cession of the Rosario vein was done with the "approval of [Comibol], as the administrator of the mining rights in the Colquiri mine, on behalf of the Bolivian State, and without objection from Colquiri S.A. as lessee of said mine [...]") (unofficial English translation from Spanish original). See also Cross Examination of H Córdova, Transcript, Day 2 (English) 502:12 – 503:14 (Spanish original at Cross Examination of H Córdova, Transcript, Day 2 (Spanish) 623:9 – 624:22) (confirming that Comibol approved the Rosario Agreement). See also Letter from the Minister of Mining (Mr Virreira) to Cooperativa 26 de Febrero (Mr Lima), 30 May 2012, **C-259** (confirming that Vice Minister Meneses was expressly authorized to negotiate with the *cooperativas* and Colquiri S.A. on behalf of the Ministry of Mining in June 2012); Cross Examination of E Lazcano, Transcript, Day 2 (English) 398:6 – 399:9, 416:19 – 417:5, 417:13-20 (Spanish original at Cross Examination of E Lazcano, Transcript, Day 2 (Spanish) 480:2 – 481:15, 507:4-18, 508:5-15); Cross Examination of H Córdova, Transcript, Day 2 (English) 496:19 – 501:6, 504:16-19 (Spanish original at Cross Examination of H Córdova, Transcript, Day 2 (Spanish) 615:20 – 621:15, 626:11-14).

that Glencore Bermuda was contributorily negligent in entering into the Agreement.

205. Bolivia’s allegations of contributory fault with regard to Vinto also fail. Bolivia did not nationalize Vinto as a result of the purported “irregularities” in the privatization of the Tin Smelter in 2001 (four years before Glencore Bermuda acquired Vinto).⁵²⁴ Bolivia’s reasons for seizing the Tin Smelter were stated in a Comibol Report issued days before the taking on 9 February 2007: “The transfer of Complejo Vinto to COMIBOL [would] give the latter the opportunity to close the tin production chain” and would be “profitable for the country and COMIBOL.”⁵²⁵ Thus, regardless of Glencore Bermuda’s conduct, Bolivia would have seized the Tin Smelter and there was no contribution by Glencore Bermuda.
206. Moreover, as previously explained, at the time Glencore Bermuda acquired Vinto in 2005, it had no reason to believe that Bolivia would nationalize Vinto due to “irregularities” in the privatization of the Tin Smelter in 2001.⁵²⁶ The evidence shows that the State carried out the privatization of the Tin Smelter in full compliance with the applicable legal framework.⁵²⁷ No authority had (or has) found irregularities in the privatization process,⁵²⁸ and, prior to Glencore Bermuda’s acquisition of Vinto, it had enjoyed several years of uninterrupted operations since the privatization.⁵²⁹ Furthermore, prior to Glencore Bermuda’s

⁵²⁴ Statement of Defense, paras 956-959.

⁵²⁵ COMIBOL, Report on the reversion of the Complejo Metalúrgico Vinto to the Bolivian State, 29 January 2007, **R-247**, p 3. *See also* H Córdova, “El desarrollo de la metalurgia: una asignatura pendiente” in: H Oporto et al (eds), *¿De vuelta al Estado minero?* (2013), **C-300**, p 17.

⁵²⁶ Reply on the Merits, paras 295-297; Rejoinder on Jurisdiction, paras 99-112; Opening Statement of Claimant, Day 1, Transcript (English) 55:18 – 60:6 (Spanish translation at Opening Statement of Claimant, Day 1, Transcript (Spanish) 73:20 – 78:22); Closing Statement of Claimant, Day 4, Transcript (English) 818:8 – 820:15 (Spanish translation at Closing Statement of Claimant, Day 4, Transcript (Spanish) 1055:22 – 1059:5).

⁵²⁷ Statement of Defense, paras 46-55, 73-75.

⁵²⁸ Rejoinder on Jurisdiction, paras 9, 194.

⁵²⁹ The privatization was backed by well-known private and public shareholders, including the UK government institution CDC and the World Bank affiliate IFC—neither of which would have invested in the Assets if there was any doubt as to their legitimacy. Furthermore, the price paid for

acquisition of the Investments, Bolivia’s Vice Minister of Mining not only failed to mention any purported irregularities in the privatization process for the Assets, but even encouraged Glencore to acquire Vinto and Colquiri.⁵³⁰ As Mr Eskdale testified at the Hearing, Glencore therefore did not foresee the nationalization of the Tin Smelter at the time it acquired it.⁵³¹ Had it been “fully aware”⁵³² of the risk of expropriation, as Bolivia contends, Glencore would not have acquired the Tin Smelter.⁵³³

B.

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the Tin Smelter, far from being low, was 40 percent higher than the minimum award price set by Paribas, Bolivia’s own financial consultant during the privatization. Second Witness Statement of Christopher Eskdale, para 58; Reply on the Merits, para 234. In addition, to date, no Bolivian court has recognized irregularities in the privatization process. *See also* Reply on the Merits, paras 49-55; Rejoinder on Jurisdiction, para 172.

⁵³⁰ In January 2005, Bolivia’s Vice Minister of Mining wrote to Glencore relaying “[his] favorable predisposition towards the development of new investments in the mining sector.” Letter from the Vice Minister of Mining (Mr Gutiérrez) to Glencore (Mr Capriles), 17 January 2005, C-63, p 1 (unofficial English translation from Spanish original). Reply on the Merits, paras 59-60.

⁵³¹ Questions from Tribunal Directed to Mr C Eskdale, Day 1, Transcript (English) 326:22-23 (“[T]here was no suggestion in our minds at all that we would have been expropriated.”) (Spanish translation at Questions from Tribunal Directed to Mr C Eskdale, Day 1, Transcript (Spanish) 383:16-18; Questions from Tribunal Directed to Mr C Eskdale, Day 1, Transcript (English) 327:8 – 328:4 (Spanish translation at Questions from Tribunal Directed to Mr C Eskdale, Day 1, Transcript (Spanish) 384:5 – 385:9).

⁵³² Statement of Defense, para 959.

⁵³³ Questions from Tribunal Directed to Mr C Eskdale, Day 1, Transcript (English) 327:8 – 328:4 (“[I]f you think you’re going to be expropriated, the Discount Rate is a hundred. [...] If you think you’re going to lose it, you don’t buy it.”) (Spanish translation at Questions from Tribunal Directed to Mr C Eskdale, Day 1, Transcript (Spanish) 384:12-16).

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VII. REQUEST FOR RELIEF

212. On the basis of the foregoing, without limitation and reserving Glencore Bermuda's right to supplement these prayers for relief, including without limitation in the light of further action which may be taken by Bolivia, Glencore Bermuda respectfully requests that the Tribunal:

- (a) ORDER Bolivia to compensate Glencore Bermuda for its losses resulting from Bolivia's breaches of the Treaty and international law for an amount of US\$439.6 million, which includes the sums of US\$381.1 million in respect of Colquiri, US\$56 million in respect of Vinto, US\$1.9 million in respect of the Antimony Smelter, and US\$0.6 million in respect of the Tin Stock;
- (b) ORDER Bolivia to pay pre-award interest on (a) above in the sum of US\$338.6 million, which includes for Colquiri, interest at a rate of 6.4% compounded annually from its date of valuation, 29 May 2012, until 22 January 2020; for Vinto, interest at a rate of 8.6% compounded annually from its date of valuation, 8 February 2007, until 22 January 2020; and for the Tin Stock, interest at a rate of 6.1% compounded annually from its date of valuation, 30 April 2010, until 22 January 2020, and pre- and post-award interest after the date of 22 January 2020 at the previously stated rates compounded annually for Colquiri, Vinto and the Tin Stock, and the rate of 6.7% compounded annually for the Antimony Smelter, or at such other rate and compounding period as the Tribunal determines will ensure full reparation;
- (c) DECLARE that: (i) the award of damages and interest in (a) and (b) is made net of all Bolivian taxes; and (ii) Bolivia may not deduct taxes in respect of the payment of the award of damages and interest in (a) and (b);

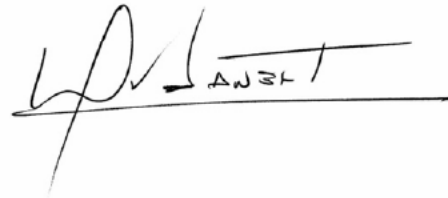
- (d) ORDER Bolivia to pay all of the costs and expenses of these arbitration proceedings;
- (e) ORDER Bolivia to pay all costs incurred by Glencore Bermuda resulting from the Section 1782 proceedings brought by Bolivia in the United States District Court for the Eastern District of Virginia; and
- (f) ORDER such other relief as the Tribunal considers appropriate.

Respectfully submitted on 22 January 2020



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FERRERE

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On behalf of the Claimant