



May 29 | 2015

**Bear Creek Mining  
Corporation (“Claimant”)**

**v.**

**Republic of Peru  
 (“Respondent”)**

CRITICAL THINKING AT THE CRITICAL TIME™

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## **1. Introduction**

- 1.1 This report has been prepared by FTI Consulting Canada ULC (“**FTI Consulting**”) for Bear Creek Mining Corporation (the “**Claimant**” or “**Bear Creek**”) in connection with a dispute with the Republic of Peru (the “**Respondent**” or the “**Government**”) under the International Centre for Settlement of Investment Disputes (“**ICSID**”) arbitration rules. The Claimant and the Respondent are collectively referred to as the “**Parties**” in this report.
- 1.2 The dispute between the Parties arises out of the actions and omissions by the Respondent with respect to the Santa Ana silver project located in Peru (the “**Project**” or “**Santa Ana**”), which the Claimant alleges were in violation of the Canada-Peru Free Trade Agreement (the “**Treaty**”).
- 1.3 We have been asked by King and Spalding LLP (“**Counsel**”), on behalf of the Claimant, to provide our independent opinion as to the quantum of damages sustained by the Claimant, if any, as a result of the alleged breaches of the Treaty by the Respondent. Counsel has requested that our opinion also consider damages sustained by the Claimant, if any, as they relate to the Corani silver project (“**Corani**”), which is also located in Peru.
- 1.4 In preparing our opinion of damages, we have assumed that there will be a finding that the Claimant is entitled to an award of damages. Nothing in this report should be construed as an opinion with respect to the legal merits of the claim.
- 1.5 In preparing this report, we have been asked to rely upon the report of the independent mining engineering firm Roscoe Postle Associates (“**RPA**”) dated May 29, 2015 (the “**RPA Report**”). The RPA Report discusses the technical mining and engineering aspects of the Project as at June 23, 2011 (the “**Valuation Date**”). Where appropriate, we have cross referenced our report to the RPA Report.

### **Qualifications**

- 1.6 This report has two authors, Howard N. Rosen and Chris Milburn. Our qualifications are set out briefly below and our CVs are attached in **Appendix 1** and **Appendix 2** respectively.



**Howard N. Rosen**

- 1.7 My name is Howard N. Rosen. I am a Senior Managing Director of FTI Consulting and have been involved exclusively in business valuations, financial litigation, and corporate finance-related matters since 1981. I have acted as an advisor to private and public companies, regulatory bodies, and governments in a wide variety of industries. I have also acted as an advisor to buying and selling parties in numerous transactions. My work experience covers assignments across Canada, the United States, Europe, the Middle East, Africa, and Asia. I have been qualified as an expert witness in over 200 damages quantification and valuation matters in courts in Canada and the United States and also in International Tribunal Hearings in Canada, Europe, the United States, and Asia. I have acted as a court appointed administrator, monitor, inspector, and additionally as a member of an Arbitration Tribunal. My current role is the Practice Leader of FTI Consulting's International Arbitration group.
- 1.8 I have extensive experience in the valuation and quantification of damages relating to mineral properties at all stages of development including mining projects located in South America, North America, Africa, Asia and Eastern Europe and mineralization including silver, gold, copper, cobalt, iron ore, zinc, lead, nickel, uranium, molybdenum, coal and dimension stone. I am currently a member of the International Valuations Standards Committee ("IVSC") Working Group on the IVSC Extractive Industries Project which is involved with developing international valuation standards for mining and other extractive industries. I am a Qualified Valuator under the Standards and Guidelines for Valuation of Mineral Properties promulgated by the Special Committee of the Canadian Institute of Mining, Metallurgy and Petroleum on Valuation of Mineral Properties ("CIMVAL").
- 1.9 I am the co-author of two texts and numerous chapters in a book on the quantification of economic damages and business valuations and have lectured extensively to professional interest groups.
- 1.10 Prior to joining FTI Consulting, I practiced as a partner in specialty niche firms and also as the Canadian partner in charge of the business valuation and damages quantification practices for a large multi-national professional services firm.
- 1.11 My curriculum vitae is attached hereto as **Appendix 1**.



***Chris Milburn***

- 1.12 My name is Chris Milburn. I am a Managing Director of FTI Consulting and have been involved exclusively in business valuations, financial litigation, and corporate finance-related matters since 1997. I have acted as an advisor to private and public companies, regulatory bodies, and governments on a wide variety of industries. My work experience covers assignments across Canada, the United States, South America, Europe, Africa, and Asia. I have provided expert witness testimony relating to the quantification of damages.
- 1.13 I have extensive experience in the valuation and quantification of damages relating to mineral properties across all stages of development and involving mining projects located in North America, South America, Africa, Asia and Eastern Europe with mineralization including silver, gold, copper, cobalt, zinc, lead, molybdenum, nickel, coal and iron ore. I am a Qualified Valuator under the Standards and Guidelines for Valuation of Mineral Properties promulgated by CIMVAL.
- 1.14 My curriculum vitae is attached hereto as **Appendix 2**.

## 2. Summary of Damages Approach and Conclusions

- 2.1 We have calculated the damages to the Claimant resulting from the alleged breaches of the Treaty by the Respondent on the following bases:

### **Santa Ana Project – Damages**

- 2.2 We have proceeded on the basis that the alleged breaches, including the issuance of Supreme Decree No. 032-2-11-EM (“**Supreme Decree 032**”) on June 25, 2011 (the “**Expropriation Date**”), amounted to an illegal expropriation of the Project by the Respondent and constituted violations of additional obligations under the Treaty, including Fair and Equitable Treatment, and that the news of the impending expropriation became publicly known on June 24, 2011. We have calculated the damages under this head of damage as the fair market value (“**FMV**”) of the Project on the Valuation Date of June 23, 2011, the day immediately before the expropriation became known in the marketplace. We have determined the FMV of the Project based on a discounted cash flow (“**DCF**”) methodology as our primary approach, and have used market based indications of value as a secondary approach in order to assess the reasonableness of the conclusions reached under the DCF methodology.
- 2.3 Our calculations of the damages to the Claimant on the Project are described more fully below and are presented in **Schedule 1**.

### **Corani Project –Reduction in Value**

- 2.4 We understand that the alleged breaches of the Respondent have also negatively impacted the value of Corani in the marketplace as they have impaired the Claimant’s ability to raise financing for Corani, resulted in a delay in its development, and led to a higher perceived level of risk in the marketplace with regards to the development of Corani.
- 2.5 We have quantified the reduction in the value of Corani as the difference between the estimated value of Corani absent the alleged breaches and the value of Corani given the alleged breaches immediately after the date the Santa Ana Project was expropriated.

- 2.6 We have estimated the value of Corani absent the alleged breaches as the enterprise value (“EV”)<sup>1</sup> of Bear Creek on May 27, 2011 (i.e. the date prior to the first alleged breach), less the estimated value of the non-Corani assets. We then indexed this value to June 27, 2011, the first trading day after the Expropriation Date, by the change in the S&P/ TSX Global Mining Index over the period from May 27, 2011 to June 27, 2011.<sup>2</sup> We have thus assumed that the decrease in value above that of the change in the S&P/ TSX Global Mining Index over this period was attributable to the alleged breaches and represents a permanent reduction in value.
- 2.7 Our calculations of the reduction in the value of Corani are described more fully below.

#### **Pre-Award Interest**

- 2.8 We have calculated pre-award interest owing to the Claimant based on the above noted losses based on an interest rate of 5.0% per annum over the relevant period, on a compound basis to a calculation date of March 15, 2017 (the “**Calculation Date**”).

#### **Damages Conclusion**

- 2.9 We have provided a timeline in the figure below to illustrate the methodologies we used to quantify the heads of damage described above:

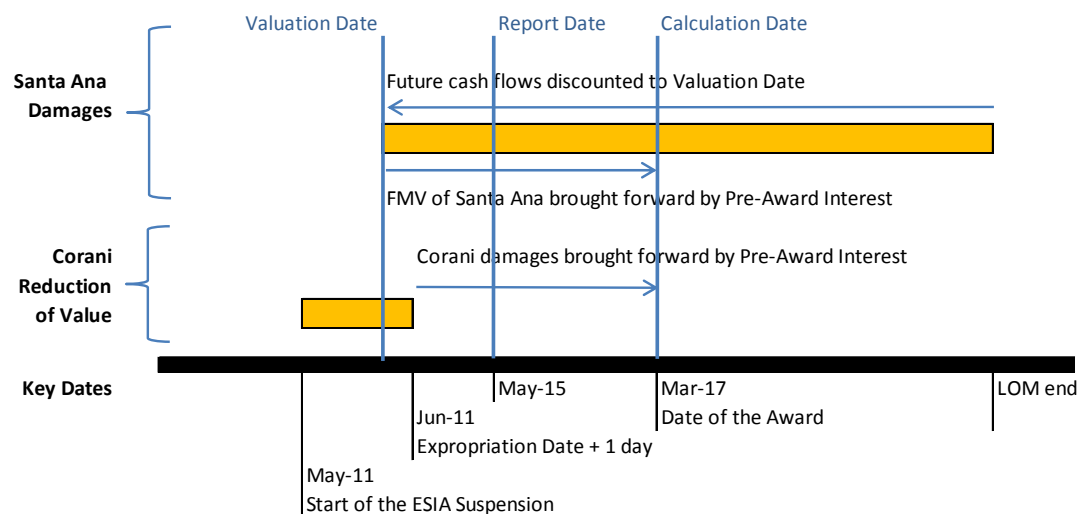
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<sup>1</sup> A firm’s enterprise value is the sum of its interest-bearing debt and equity components.

<sup>2</sup> Refer to **Paragraph 4.11**.

The first alleged breach of the Treaty was dated May 30, 2011.

**Figure 1 Damages Approaches Summary<sup>3</sup>**



2.10 Based on the scope of our review and the assumptions and restrictions noted herein, we have calculated the damages to the Claimant subsequent to the alleged breaches of the Respondent, as follows:

<sup>3</sup> A larger version of this chart has been included in this report as **Appendix 3**.



**Figure 2      Summary of Calculations<sup>4</sup>**

<b>Description (\$ millions)</b>	<b>Compensation</b>
Santa Ana Project - Damages	\$ 224.2
Pre-Award Interest	\$ 72.4
<b>Santa Ana Damages</b>	<b>\$ 296.6</b>
Corani Project - Reduction in Value	\$ 170.6
Pre-Award Interest	\$ 55.0
<b>Corani Reduction in Value</b>	<b>\$ 225.6</b>
<b>Total</b>	<b>\$ 522.2</b>

<sup>4</sup> All dollar figures presented herein are denominated in USD, unless otherwise noted.

Santa Ana damages presented in our conclusion are calculated using long term forecasted commodities prices based on a weighting of a number of sources of pricing (management estimates, consensus, forward prices, spot prices, historical prices) as described in **Paragraph 7.49**. Alternatively, if we apply the last futures contract price (**Paragraph 7.51**) as a proxy for the long term commodity price, the FMV of Santa Ana increases (before pre-award interest) to \$333.7 million.



### **3. Reporting Standards, Restrictions, and Declarations**

- 3.1 In preparing this report, we have been assisted by FTI Consulting staff working under our direction, supervision, and review. We have discussed issues relevant to the matter with Counsel and the Claimant. However, the opinions expressed in this report are our own.
- 3.2 We have acted independently and objectively in the preparation of this report and our compensation is not contingent on any action or event resulting from the use of this report.
- 3.3 This report was prepared in conformity with the Practice Standards of the Canadian Institute of Chartered Business Valuators (“CICBV”). The relevant Practice Standards of the CICBV include those governing the preparation of Expert Reports (CICBV Practice Standards 310, 320, and 330) and Valuation Reports (CICBV Practice Standards 110, 120, and 130).<sup>5</sup> CICBV Practice Standards 110 and 310 are included in our scope of review.
- 3.4 We have prepared this report to be an Expert Report under CICBV Standard 310, but as our estimate of the compensation owed to the Claimant includes determining the market value of specific assets, we have also prepared this report in accordance with the Practice Standards applicable to Valuation Reports as defined under CICBV Practice Standard 110.
- 3.5 Under CICBV Practice Standard 110 there are three types of Valuation Reports: Comprehensive, Estimate and Calculation. These reports are not only distinguished by the valuator’s scope of review and the amount of disclosure provided, but also by the level of assurance being provided in the conclusion, with a Comprehensive Valuation Report providing the highest assurance and the Calculation Valuation Report providing the lowest.

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<sup>5</sup> The CICBV standards are split into three sections with “10” being reporting standards and recommendations, “20” being scope of work standards and recommendations, and “30” being file documentation standards. All the standards are available at [www.cicbv.ca/practice-standards/](http://www.cicbv.ca/practice-standards/).

- 3.6 Whereas a Comprehensive Valuation Report "...contains a conclusion as to the value of shares, assets or an interest in a business that is based on a comprehensive review and analysis of the business, its industry and all other relevant factors, adequately corroborated and generally set out in a detailed Valuation Report", an Estimate Valuation Report "...contains a conclusion as to the value of shares, assets or an interest in a business that is based on limited review, analysis and corroboration of relevant information, and generally set out in a less detailed Valuation Report" and, a Calculation Valuation Report "...contains a conclusion as to the value of shares, assets or an interest in a business that is based on minimal review and analysis and little or no corroboration of relevant information, and generally set out in a brief Valuation Report."<sup>6</sup>
- 3.7 The valuation analysis in this report was prepared to be at the level of a Comprehensive Valuation Report under the CICBV Practice Standards.
- 3.8 We have also referred to the CIMVAL valuation and reporting standards and guidelines. Although this report was prepared to meet the main principles outlined in the CIMVAL standards and guidelines, it was not prepared in strict compliance with the CIMVAL reporting standards.
- 3.9 This report has been prepared solely for the benefit of the Claimant for use for the purpose described in this introduction. In all other respects, this report is confidential. It should not be used by any other party for any purpose or reproduced or circulated, in whole or in part, by any party without the prior written consent of FTI Consulting.
- 3.10 FTI Consulting accepts no liability or duty of care to any person other than the Claimant for the content of the report and disclaims all responsibility for the consequences of any person other than the Claimant acting or refraining to act in reliance on the report or for any decisions made or not made which are based upon the report.
- 3.11 We have provided our opinion of the damages to Claimant based on our assessment of various key parameters that impact the value of the Claimant's assets over time and the appropriate methodologies that should be applied thereto. In the event that the Tribunal's findings differ with respect to the parameters or methodologies derived or applied herein, we can update our calculations of the damages to the Claimants to reflect their findings.

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<sup>6</sup> CICBV, "Practice Standard 110" (FTI-01)



### **Sources of information**

3.12 In the preparation of this report we have relied upon the documents set forth in **Appendix 3**.

## 4. Overview of the Dispute, the Claimant and the Project

### Introduction

- 4.1 We are instructed that the background to this matter will be well known to the Arbitrators and the other parties to the dispute by the time that our report is considered by the Arbitral Tribunal. We therefore provide only a summary of our understanding of the matter below, to the extent relevant to the issues we have been asked to consider.
- 4.2 This background section makes reference to the Request for Arbitration filed by Counsel on behalf of the Claimant on August 11, 2014 (the “**RFA**”) and the Claimant’s Memorial on Merits dated May 29, 2015 (the “**Memorial**”).

### Overview of the Claimant

- 4.3 Bear Creek is a Canadian mining company with a focus on properties in Peru.<sup>7</sup> Bear Creek was incorporated in the province of British Columbia in 1999 and is publicly traded on the TSX Venture Exchange. On the Valuation Date, Bear Creek traded at a share price of \$6.28 (\$6.16 CAD) and had a market capitalization of approximately \$578.5 million.<sup>8</sup>
- 4.4 Bear Creek owns Santa Ana, and other prospective Mineral Properties through a wholly-owned subsidiary named Bear Creek Exploration Company Ltd. (“**Bear Creek Exploration**”), which has a branch office in Peru named Bear Creek Mining Company, Sucursal del Perú (“**Bear Creek Peru**”).<sup>9</sup> Bear Creek owns Corani through a second Peruvian subsidiary named Bear Creek Mining SAC.
- 4.5 An organizational chart illustration of Bear Creek’s ownership interests in the Santa Ana and Corani Projects is provided in the figure below:

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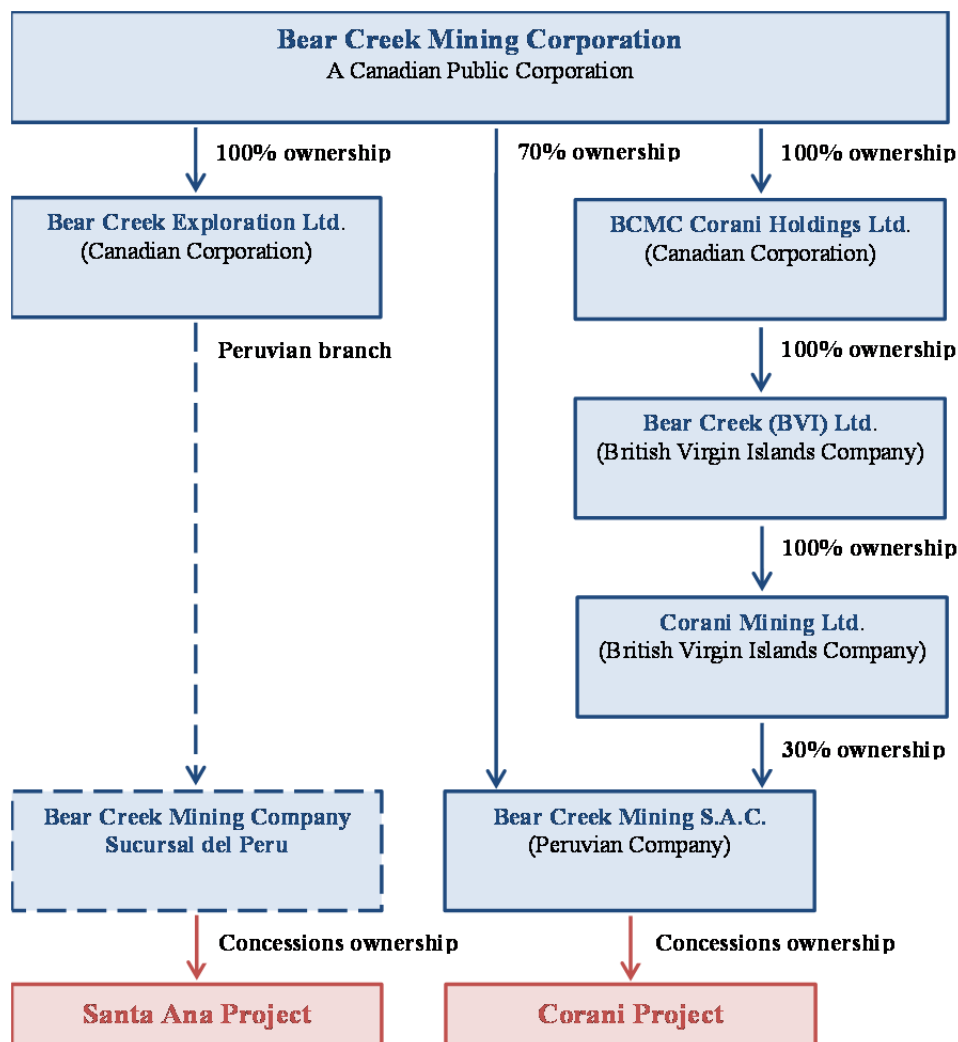
<sup>7</sup> Bear Creek, “Annual Information Form”, March 29, 2011, page 1 (**FTI-02**)

<sup>8</sup> Share price and market capitalization per Capital IQ. (**FTI-03**)

<sup>9</sup> Bear Creek, “Annual Information Form”, March 29, 2011, page 1, 51-53 (**FTI-02**)

Bear Creek’s other holdings include the La Yegua project and the Tassa Silver, Alejandra, and Sumi gold prospects.

**Figure 3 Bear Creek Organization Chart<sup>10</sup>**



<sup>10</sup> The Memorial, paragraph 104

## Overview of the dispute

- 4.6 Article 71 of the Peruvian Constitution prohibits foreign persons or companies from acquiring or possessing mines, lands, forests, waters, and energy resources located within 50 kilometres of the Peruvian border, with the exception of investments deemed as public necessity by executive decree.<sup>11</sup> Ms. Jenny Karina Villavicencio Gardini, a Peruvian national, filed six mining petitions corresponding to the Santa Ana project area (Karina 9-A, Karina 1, Karina 2, Karina 5, Karina 6 and Karina 7, together the “**Santa Ana Mining Concessions**”). Since these concessions were located approximately 30 kilometers from the border between Peru and Bolivia, the Project was subject to the provisions of Article 71. Ms. Villavicencio obtained mining concessions over the Santa Ana Mining Concessions in 2006 and 2007.
- 4.7 In late 2004, Bear Creek entered into option agreements with Ms. Villavicencio to acquire the Santa Ana Mining Concessions if it was granted all requisite authorizations by the Government (the “**Option Agreements**”).<sup>12</sup>
- 4.8 On November 29, 2007, the President of Peru and the Council of Ministers of Peru enacted Supreme Decree No. 083-2007-EM (“**Supreme Decree 083**”), approving Bear Creek’s acquisition of the Santa Ana Mining Concessions.<sup>13</sup> On December 6, 2007, the acquisition was completed in accordance with the Option Agreements.
- 4.9 Between late 2007 and early 2011, Bear Creek explored and developed Santa Ana resulting in the confirmation of Proven and Probable Mineral Reserves containing 63.2 million ounces of silver as well as an additional 101.0 million ounces of Measured, Indicated, and Inferred Resources.<sup>14</sup>

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<sup>11</sup> RFA, page 4-5

<sup>12</sup> RFA, page 6

<sup>13</sup> RFA, page 7

<sup>14</sup> RFA, page 7-8

- 4.10 In late 2010, Bear Creek conducted an Environmental and Social Impact Assessment (the “**ESIA**”), which included consultation with local communities.<sup>15</sup> The ESIA plan was submitted to regulators on December 23, 2010 and regulators approved Bear Creek’s Community Participation Plan and Executive Summary of the ESIA on January 7, 2011. Final public hearings were held on February 23, 2011. On April 7, 2011, Bear Creek published a revised Feasibility Study for Santa Ana dated April 1, 2011 (the “**Updated Feasibility Study**” or “**FSU**”), which estimated that production would commence in Q4’2012, if not earlier.
- 4.11 On May 30, 2011 the Government ordered a 12-month suspension of mining activities, including the ESIA process for Santa Ana (the “**ESIA Suspension**”).<sup>16</sup>
- 4.12 On June 25, 2011, the Respondent issued Supreme Decree 032, which reversed Supreme Decree 083.
- 4.13 The Claimant alleges that the Government’s issuance of Supreme Decree 032, along with other acts and omissions including the ESIA Suspension and the filing of a civil lawsuit against Bear Creek, constitute violations of the Treaty, putting an end to the Santa Ana project, and negatively impacting the Corani project.<sup>17</sup>

#### **Overview of the Santa Ana Project**

- 4.14 The Project covers 5,400 hectares of mineral concessions that are located 135 kilometres south of Puno in south-eastern Peru and were held 100.0% by Bear Creek as of the Valuation Date.<sup>18</sup> Subsequent to the acquisition of the Santa Ana Mining Concessions from Ms. Villavicencio, Bear Creek carried out a substantial exploration program at the Santa Ana project site through its subsidiaries and confirmed the existence of Mineral Resources and Mineral Reserves.

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<sup>15</sup> RFA, page 8-9

<sup>16</sup> Memorial, paragraph 71

<sup>17</sup> RFA, page 2, 13

<sup>18</sup> RFA, page 4



4.15 Metals and minerals contained in a Mineral Property<sup>19</sup> are classified based on the level of geoscientific confidence available and the level of economic viability estimated by a Qualified Person. The Canadian Institute of Mining, Metallurgy and Petroleum (“**CIM**”) broadly defines mineral deposits by the level of certainty as either Mineral Resources or Mineral Reserves.<sup>20</sup>

4.16 A Mineral Resource is defined by the CIM as:<sup>21</sup>

*... a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.*

4.17 Mineral Resources can be further divided into three categories, according to CIM:<sup>22</sup>

*Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.*

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<sup>19</sup> CIMVAL, page 9-10. (**FTI-04**)

Under CIMVAL a Mineral Property is defined as, “...any right or interest to property held or acquired in connection with the exploration, development, extraction or processing of minerals which may be located on or under the surface of such property, together with all fixed plant, equipment and infrastructure owned or acquired for the exploration, development extraction and processing of minerals in connection with such properties...”

<sup>20</sup> As a Canadian company, Bear Creek was required to follow CIM standards in their mineral resource reporting and thus we have focussed on the CIM/ CIMVAL standards herein. These standards are broadly consistent with other internationally recognized mining and mining valuation standards including the South African Mineral Assets Valuation Working Group (“**SAMVAL**”) and the Australian Institute of Mining and Metallurgy (“**AusIMM**”).

<sup>21</sup> CIM, “CIM Definition Standards for Mineral Resources and Mineral Reserves”, May 10, 2014, page 3 (**FTI-05**)

<sup>22</sup> CIM, “CIM Definition Standards for Mineral Resources and Mineral Reserves”, May 10, 2014, page 3 (**FTI-05**)

- 4.18 A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.<sup>23</sup>
- 4.19 The FSU was prepared for the Project by three engineering companies on behalf of Bear Creek, and issued on April 1, 2011. A Feasibility Study is defined by the CIM as:<sup>24</sup>
- ... a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of realistically assumed mining, processing, metallurgical, economic, marketing, legal, environmental, social and governmental considerations together with any other relevant operational factors and detailed financial analysis, that are necessary to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project.*
- 4.20 According to the FSU, Proven and Probable Mineral Reserves containing 63.2 million ounces of silver were defined, as were Measured, Indicated, and Inferred Resources containing 101.0 million ounces of silver.<sup>25</sup> A summary of the Reserves and Resources of the Project per the FSU is presented in the figure below:

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<sup>23</sup> CIM, "CIM Definition Standards for Mineral Resources and Mineral Reserves", May 10, 2014, page 4 (FTI-05)

<sup>24</sup> CIM, "CIM Definition Standards for Mineral Resources and Mineral Reserves", May 10, 2014, page 3 (FTI-05)

<sup>25</sup> FSU, page 3 (FTI-06)

**Figure 4 Santa Ana Reserve and Resource Estimate<sup>26</sup>**

Mineral Reserves (Cut-off Grade Variable 27 to 24 g/t Silver by Year)					
Category	kt	Silver (g/t)	Lead (%)	Zinc (%)	Contained Silver (oz millions)
Proven	8,951	57.6	0.37	0.66	16.6
Probable	28,126	51.5	0.33	0.55	46.6
Proven + Probable	37,077	53.0	0.34	0.58	63.2
Mineral Resources in Addition to Reserves (Cut-off Grade = 15 g/t Silver)					
Measured	13,386	34.6	0.30	0.51	14.9
Indicated	51,337	35.1	0.30	0.50	57.9
Measured + Indicated	64,723	35.0	0.30	0.50	72.8
Inferred	21,632	40.6	0.32	0.49	28.2

- 4.21 The FSU was based on production of a silver equivalent average grade of approximately 53.0 grams per tonne over an 11 year life of mine (“**LOM**”), by employing conventional, open pit hard rock mining techniques.<sup>27</sup> Over the LOM, the Project per the FSU was projected to yield 47.4 million ounces of silver. While by-product gold recovery is also included in the FSU, no economic considerations have been applied to the contained lead or zinc because they would not be recovered in the heap leach processing method utilized in the Project.<sup>28</sup>
- 4.22 Initial and sustaining capital costs were estimated to be \$70.8 million (\$71.6 million including \$0.8 million in spare parts) and \$15.0 million, respectively, including a contingency of 15.0%.<sup>29</sup> Operating costs consisting of mining costs, crushing, leaching and lab work costs, and general and administrative costs were estimated to be \$5.60, \$3.49, and \$1.17 per tonne of ore processed, respectively.<sup>30</sup>

<sup>26</sup> FSU, page 3 (**FTI-06**)

<sup>27</sup> FSU, page 1, 4 (**FTI-06**)

<sup>28</sup> FSU, page 1, 3 (**FTI-06**)

<sup>29</sup> FSU, page 7-8, 137 (**FTI-06**)

<sup>30</sup> FSU, page 137 (**FTI-06**)

- 4.23 Based on the economic analysis set out in the FSU, the Project's pre-tax net present value ("NPV") was approximately \$106.9 million based on a 5.0% discount rate, a silver price of \$14.50 per ounce, and a gold price of \$950.00 per ounce.<sup>31</sup> The silver price forecast used in the FSU, "... corresponds to an average forecasted long-term consensus price from 45 capital market analysts as of September 2010".<sup>32</sup>
- 4.24 According to the CIM a feasibility study is intended to demonstrate that "...extraction is reasonably justified (economically mineable)".<sup>33</sup> Accordingly, the economic analysis set out in the FSU is not a valuation but rather is an assessment of the economic viability of the Project as of the date it was prepared.
- 4.25 The FSU also includes a sensitivity analysis to various economic parameters, which is summarized below:

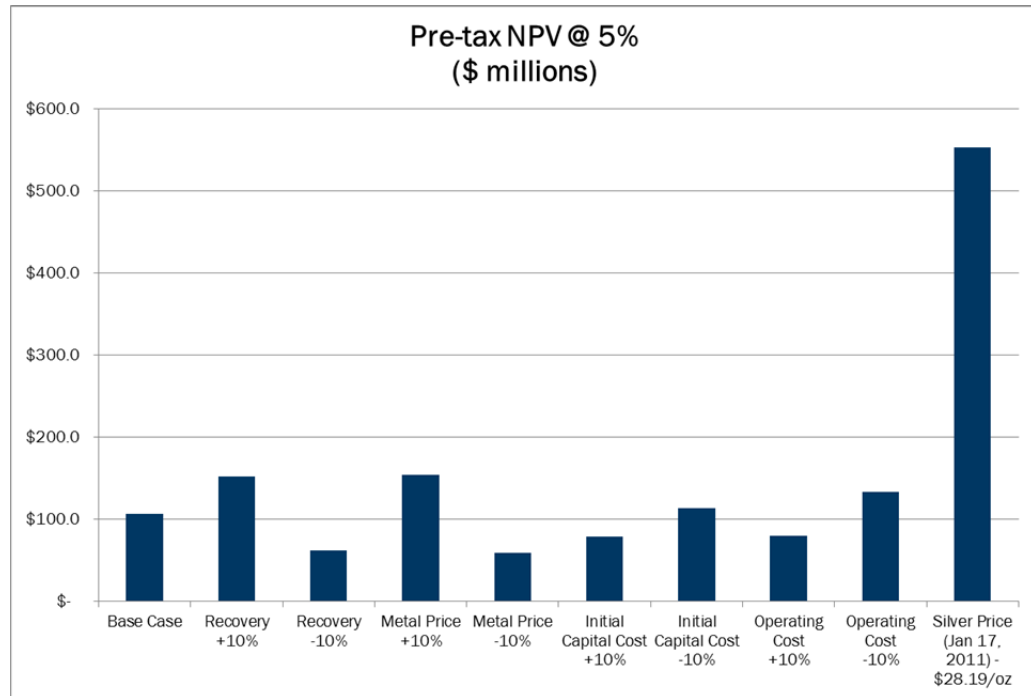
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<sup>31</sup> FSU, page 136-140 (FTI-06)

<sup>32</sup> FSU, page 127 (FTI-06)

<sup>33</sup> CIM, "CIM Definition Standards for Mineral Resources and Mineral Reserves", May 10, 2014, page 3 (FTI-05)

**Figure 5 Sensitivity Analysis<sup>34</sup>**



4.26 According to the sensitivity analysis included in the FSU, the Project is most sensitive to the metal price and recovery rate, and least sensitive to the capital cost. The FSU also identified opportunities that could potentially increase the value of the Project:<sup>35</sup>

- i) Positive exposure to upside silver price is presented, due to the gap between the base case price of \$14.50 per ounce and the London closing price on January 17, 2011 of \$28.19 per ounce;
- ii) Approximately 35.7 million ounces of silver Resources could be added to an extended mine life plan;

<sup>34</sup> FSU, page 9 (FTI-06)

<sup>35</sup> FSU, paragraph 1.1 (FTI-06)

- iii) The Project is well supported by favourable infrastructure, including good road access, premium location for heap leach, and sufficient water supply;
  - iv) Exploration upside is present in areas to the north and northwest of the Project, with an anomaly in the “North” being “under-explored”; and,
  - v) The operating costs may be further reduced once the Project commences operations.
- 4.27 After the issuance of the FSU, Bear Creek completed an equity issuance, raising \$129.9 million in financing.<sup>36</sup> The funds raised by this equity issuance were intended for the development of the Santa Ana project, the finalization of the acquisition of Corani from Rio Tinto, and further exploration.<sup>37</sup> At the Valuation Date, the Santa Ana project was fully financed to production. We understand that once Santa Ana was in construction Bear Creek planned on accessing debt financing which could have been used for the development of Corani.

#### RPA Report

- 4.28 RPA was retained by the Claimant to prepare a technical due diligence review of Bear Creek’s Santa Ana Silver Project and opine on the cost assumptions used in the feasibility study’s financial model. They were also asked to review the technical reports regarding Corani and to prepare a similar due diligence review thereof.<sup>38</sup>
- 4.29 With respect to Santa Ana, RPA reviewed the FSU, supporting documents and information, and previous technical reports.<sup>39</sup> RPA concluded that the FSU is a “...reasonable representation of the Project as planned, with some modifications...”<sup>40</sup> RPA made the following modifications to the FSU to arrive at the “**RPA Revised Base Case**”:
- i) Evaluated Mineral Reserves at a revised cut-off grade of 17.5 grams per tonne of silver “...to reflect a revised Ag price of \$16.50 versus \$13.00”;<sup>41</sup>

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<sup>36</sup> Bear Creek, “Annual Information Form”, March 29, 2011, page 3 (FTI-02)

<sup>37</sup> Bear Creek, “Annual Information Form”, March 29, 2011, page 6 (FTI-02)

<sup>38</sup> RPA Report, page 1-1

<sup>39</sup> RPA Report, page 1-1, 1-2

<sup>40</sup> RPA Report, page 3-1

<sup>41</sup> RPA Report, page 3-1

- ii) Applied dilution and extraction factors of 5% and 95% respectively for the Mineral Reserve estimate;<sup>42</sup>
  - iii) Increased the contingency for 'owner's costs' from 10% to 30%;<sup>43</sup>
  - iv) Increased contractor mining costs by 25% from \$1.68 per tonne moved to \$2.10 per tonne moved;<sup>44</sup> and,
  - v) Increased the contingency factor on General and Administrative costs from 5% to 30% "to reflect the level of uncertainty in the estimate".<sup>45</sup>
- 4.30 In addition to the RPA Revised Base Case which includes only the Mineral Reserves (as adjusted by RPA), RPA also prepared an "**Extended Life Case**" based on Mineral Reserves plus a portion of the Mineral Resources (including Inferred material).<sup>46</sup>
- 4.31 We understand that the information relied upon by RPA to prepare the Extended Life Case existed at the Valuation Date.
- 4.32 For the purposes of our calculation of the FMV of the Project, we have used the Extended Life Case presented in the RPA Report as it includes both Reserves and Resources, both of which have value and would be included in a notional transaction between a willing buyer and a willing seller on the Valuation Date.

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We note that the silver price applied by RPA is used to define new Mineral Reserves only. We discuss our metals pricing approach in **Section 7**.

<sup>42</sup> RPA Report, page 3-1

<sup>43</sup> RPA Report, page 3-2

<sup>44</sup> RPA Report, page 3-2

<sup>45</sup> RPA Report, page 3-2

<sup>46</sup> RPA Report, page 3-3

## Overview of the Corani Project

- 4.33 The Corani project was acquired by Bear Creek from Rio Tinto Mining and Exploration Ltd. through a series of transactions and payments that were initiated in early 2008 and finalized on February 3, 2011.<sup>47</sup> Following the final payment of \$23.0 million on February 3, 2011, Bear Creek acquired a 100.0% interest in Corani.
- 4.34 It is located in the Andes Mountains in the south eastern region of Peru, approximately 160 kilometres by air from the city of Cusco.<sup>48</sup> The Corani project is comprised of twelve mineral concessions which cover a total of 5,700 hectares.
- 4.35 Prior to the Valuation Date, Bear Creek completed a Pre-Feasibility Study for Corani dated October 14, 2009 (the “**Corani PFS**”) that defined Proven and Probable Mineral Reserves of silver, lead, and zinc as well as Measured, indicated, and Inferred Mineral Resources.<sup>49</sup> The Mineral Reserves and Mineral Resources defined in the Corani PFS are set out below:

**Figure 6 Corani PFS Reserve and Resource Estimate<sup>50</sup>**

Mineral Reserves (\$9.10 per tonne NSR Cut-off Grade)							
Category	kt	Silver (g/t)	Lead (%)	Zinc (%)	Contained Silver (oz millions)	Contained Lead (lbs millions)	Contained Zinc (lbs millions)
Proven	27,957	70.2	1.08	0.59	63.1	665.7	363.6
Probable	111,666	54.3	0.90	0.43	194.9	2,215.6	1,058.6
Proven + Probable	139,623	57.5	0.94	0.46	258.0	2,881.3	1,422.2
Mineral Resources in Addition to Reserves (\$7.85 per tonne NSR Cut-off Grade)							
Measured	10,791	16.7	0.43	0.45	5.8	102.3	107.1
Indicated	99,626	20.6	0.45	0.39	66.0	988.4	856.6
Measured + Indicated	110,417	20.2	0.45	0.40	71.8	1,090.7	963.7
Inferred	34,215	32.4	0.54	0.34	35.6	407.3	256.5

<sup>47</sup> Bear Creek, “Annual Information Form”, March 29, 2011, page 1-3, 19 (FTI-02)

<sup>48</sup> Bear Creek, “Annual Information Form”, March 29, 2011, page 18 (FTI-02)

<sup>49</sup> Bear Creek, “Annual Information Form”, March 29, 2011, page 14-38 (FTI-02)

<sup>50</sup> Bear Creek, “Annual Information Form”, March 29, 2011, page 16-17 (FTI-02)



- 4.36 The Corani PFS utilized metals prices of \$13.00 per ounce, \$0.70 per pound, and \$0.65 per pound for silver, lead, and zinc, respectively.<sup>51</sup> The Corani PFS calculated a base case after-tax NPV of \$348.0 million over a 27 year LOM and a discount rate of 5.0%.
- 4.37 Initial and sustained capital costs were estimated to be \$339.0 million and \$353.5 million, respectively, with an estimated level of accuracy of +/- 25.0%.<sup>52</sup> Corani's average operating cost was estimated to be \$12.25 per tonne of ore processed comprised of \$3.75 per tonne for mining, \$7.30 per tonne for processing, and \$1.20 per tonne for general and administrative costs.
- 4.38 As of the Valuation Date, Bear Creek was in the process of conducting a Feasibility Study for the Corani project and expected to have it completed "for the later part of 2011".<sup>53</sup>
- 4.39 Bear Creek announced the results of the Corani Feasibility study on November 9, 2011 (the "**Corani Feasibility Study**"), increasing Corani's after-tax NPV to \$463.0 million through both increases to the total defined Mineral Reserves and increases to the applied commodities prices.<sup>54</sup> Corani's revised Reserve and Resource statement is presented below:

**Figure 7 Corani Feasibility Study Reserves and Resources<sup>55</sup>**

Mineral Reserves (\$10.54 per tonne NSR Cut-off Grade)							
Category	kt	Silver (g/t)	Lead (%)	Zinc (%)	Contained Silver (oz millions)	Contained Lead (lbs millions)	Contained Zinc (lbs millions)
Proven	30,083	66.6	1.04	0.60	64.4	690.4	399.9
Probable	126,047	50.73	0.87	0.47	205.6	2,422.6	1,297.7
Proven + Probable	156,130	53.8	0.90	0.49	270.0	3,113.0	1,697.6
Mineral Resources in Addition to Reserves (\$9.20 per tonne NSR Cut-off Grade)							
Measured	10,878	17.5	0.38	0.33	6.1	91.1	79.1
Indicated	123,583	20.8	0.38	0.29	82.6	1,035.3	790.1
Measured + Indicated	134,461	20.5	0.38	0.29	88.7	1,126.4	869.2
Inferred	49,793	30.0	0.46	0.28	48.0	509.4	305.2

<sup>51</sup> Bear Creek, "Annual Information Form", March 29, 2011, page 15-16 (FTI-02)

<sup>52</sup> Bear Creek, "Annual Information Form", March 29, 2011, page 26-28 (FTI-02)

<sup>53</sup> Bear Creek, "Annual Information Form", March 29, 2011, page 14 (FTI-02)

<sup>54</sup> Bear Creek, "November 9, 2011 Press Release", page 1 (FTI-07)

<sup>55</sup> Corani Feasibility Study, page 17 (FTI-08)

- 4.40 The Corani Feasibility Study increased annual production from 5.3 million tonnes per annum to 7.9 million tonnes per annum and decreased Corani's LOM from 27 years to 20 years.<sup>56</sup> Initial and sustaining capital costs were estimated to be \$574.4 million and \$143.9 million, respectively.<sup>57</sup> Finally, the operating costs were expected to increase to approximately \$18.99 per tonne of ore processed, comprised of \$3.82 for mining, \$7.91 per tonne for processing, \$1.40 per tonne for general and administrative, and \$5.85 per tonne for smelting/ refining and transport.<sup>58</sup>

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<sup>56</sup> Bear Creek, "Annual Information Form", March 29, 2011, page 15 (**FTI-02**)

Corani Feasibility Study, page 16 (**FTI-08**)

<sup>57</sup> Corani Feasibility Study, page 232, 233 (**FTI-08**)

<sup>58</sup> Corani Feasibility Study, page 234 (**FTI-08**)

## 5. Commodity Market Overview

### Silver Market

- 5.1 Silver is a precious metal that has uses in the photographic materials, jewellery, and silverware industries as well as more general industrial uses as components of batteries or catalysts.<sup>59</sup>
- 5.2 According to the U.S. Geological Survey (“**USGS**”), global silver production in 2010 reached approximately 23,100 tonnes, an increase in global production of approximately 5.0% from 2009.<sup>60</sup> Global silver supply from mine production and secondary sources (i.e. scrap, coin melt), increased annually at a rate of 4.2% in both 2009 and 2010 to approximately 984.8 million ounces.<sup>61</sup>
- 5.3 In 2010, Mexico (4,411 tonnes) was the world’s leading producer of silver, followed closely by Peru (3,640 tonnes), China (3,500 tonnes), and Australia (1,864 tonnes).<sup>62</sup> Overall silver supply rose to approximately 32,870 tonnes in 2010, including government sales and recycling in addition to mine production.<sup>63</sup>
- 5.4 The following chart summarizes world silver production by country:

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<sup>59</sup> The Silver Institute. “World Silver Survey 2013”. Page 10, 11 (**FTI-09**)

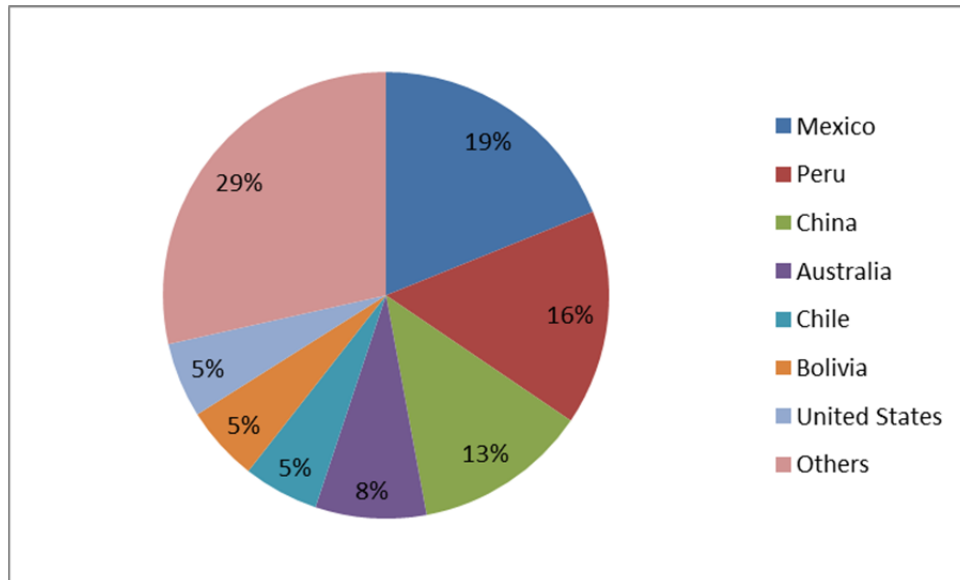
<sup>60</sup> USGS, “2010 Minerals Yearbook – Silver”, February 2012, page 68.1 (**FTI-10**)

<sup>61</sup> “The CPM Silver Yearbook 2011”, May 2011, page 7 (**FTI-11**)

<sup>62</sup> USGS, “2010 Minerals Yearbook – Silver”, February 2012, page 68.1, 68.14 (**FTI-10**)

<sup>63</sup> Silver Institute, “World Silver Survey 2011 – A Summary”, April 2011, page 6 (**FTI-12**)

**Figure 8 Silver Mine Production by Country in 2010<sup>64</sup>**



5.5 Rising silver prices and relatively low cash mining costs helped to increase silver mine production in the years 2004 to 2010.<sup>65</sup> The majority of silver is mined as a by-product, largely of gold and copper. However the proportion of primary silver mines increased from 19% of total mine supply in 2008 to 23% in 2010, partially due to the increase in silver price relative to production cost. The average cost of mining silver at a primary silver mine was \$5.16, while the average silver price was \$20.31 in 2010, yielding a healthy margin of \$15.15 per ounce in 2010.<sup>66</sup>

<sup>64</sup> Silver Institute, “World Silver Survey 2014”, May 2014, page 28, 29 (FTI-13)

<sup>65</sup> “The CPM Silver Yearbook 2011”, May 2011, page 8,9 (FTI-11)

<sup>66</sup> “The CPM Silver Yearbook 2011”, May 2011, page 10 (FTI-11)

- 5.6 Demand for silver comes from industrial fabrication including electronics and batteries, photography, jewellery and silverware, and other uses as well as investment demand.<sup>67</sup> Typically, investors look to precious metals, such as gold and silver, during times of economic uncertainty as a means of wealth preservation or ‘safe haven’.<sup>68</sup>
- 5.7 Global fabrication demand for silver peaked in 2005 at 958 million ounces and decreased in the years thereafter reaching a low of 804 million ounces in 2009 before increasing somewhat to 845 million ounces in 2010. The most significant decrease in silver fabrication demand over this period came from the photography sector due to the rise in digital photography.<sup>69</sup> Whereas demand for silver jewellery has been relatively constant between 250 to 300 million ounces from 2000 on, demand for electronic fabrication has increased significantly year over year over this same period as has the use of silver in the production of solar panels.<sup>70</sup>

### Silver Price

- 5.8 Globally, silver is traded on the London Bullion Market (physical market) and the Comex in New York (futures and options).<sup>71</sup> Silver is typically quoted in USD per troy ounce. The chart below summarizes silver’s spot price from June 2006 to the Valuation Date:

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<sup>67</sup> “The CPM Silver Yearbook 2011”, May 2011, page 6,7(**FTI-11**)

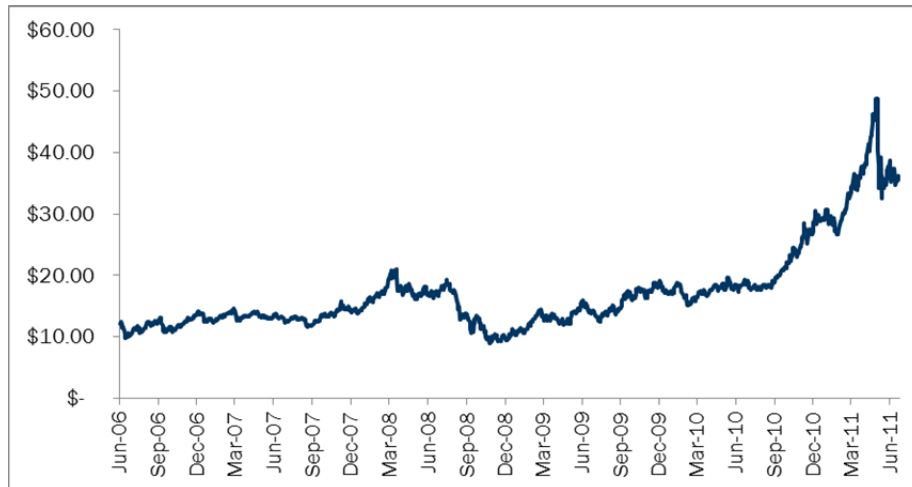
<sup>68</sup> Silver Institute, “World Silver Survey 2014”, May 2014, page 15 (**FTI-13**)

<sup>69</sup> “The CPM Silver Yearbook 2011”, May 2011, page 7,11 (**FTI-11**)

<sup>70</sup> “The CPM Silver Yearbook 2011”, May 2011, page 7,11 (**FTI-11**)

<sup>71</sup> Silver Institute, “World Silver Survey 2012 – A Summary”, April 2012, page 5 (**FTI-14**)

**Figure 9 Silver Spot Price from June 1, 2006 to June 23, 2011 (\$ per ounce)<sup>72</sup>**

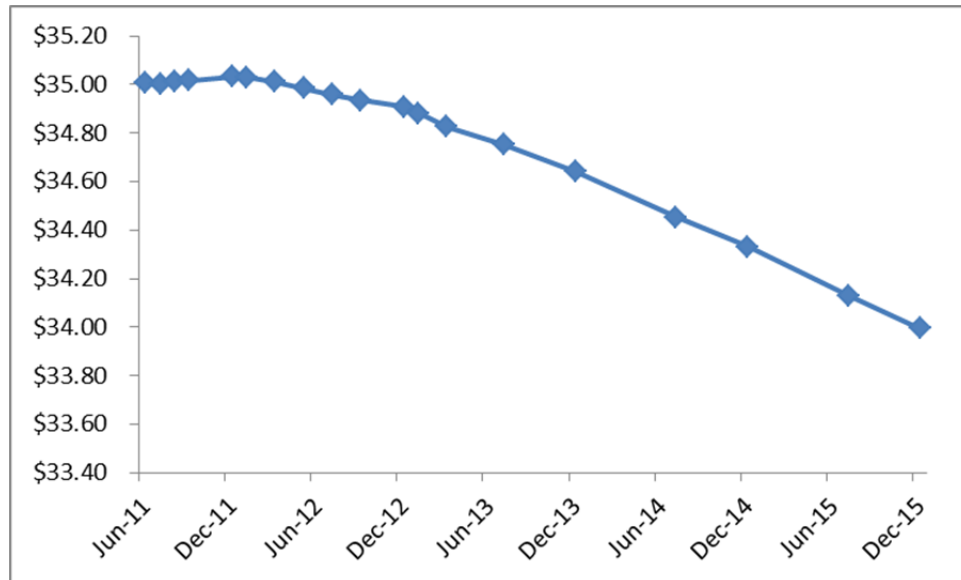


- 5.9 As shown in the chart above, the price of silver fluctuated between \$10 per ounce to \$20 per ounce from June 2006 to June 2010 and increased thereafter to a peak of \$48.70 on April 28, 2011. The price decreased in May 2011 to approximately \$35 per ounce and as of the Valuation Date, the spot price was \$36.01 per ounce.
- 5.10 The Comex market tracks contracts that are to be settled in the future which are typically referred to simply as “futures”. In the figure below we have presented the settlement price of futures contracts outstanding as at June 23, 2011:<sup>73</sup>

<sup>72</sup> Spot prices provided by SNL. (FTI-15)

<sup>73</sup> Futures prices provided by Bloomberg. (FTI-16)

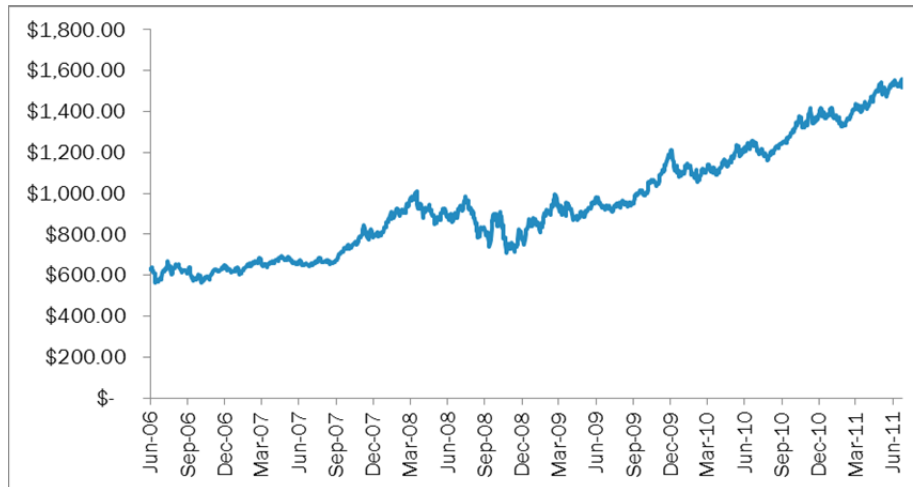
**Figure 10 Comex Silver Futures Settlement Price on June 23, 2011**



- 5.11 As shown in the chart above, the settlement prices of the silver futures listed in Comex declined over the 3 and a half year period over which they traded, relative to the spot price prevailing at the Valuation Date.
- 5.12 During 2011, the gold price rose to a high of \$1,563.70 per ounce on April 29th, 2011, which was its highest point in the previous ten years.<sup>74</sup> The figure below provides a summary of the gold spot price from June 2006 to the Valuation Date:

<sup>74</sup> Spot prices provided by SNL. (FTI-17)

**Figure 11 Gold Spot Price from June 1, 2006 to June 23, 2011<sup>75</sup>**



#### Peruvian Silver Market

- 5.13 As shown in the chart below, Peru is the world's second largest producer of silver, representing 15.8% of mine production in 2010, but experienced an overall decline in year-over-year mine production, producing 3,640 tonnes of silver in 2010 compared to 3,854 tonnes in 2009.<sup>76</sup> The largest three silver mines in Peru are Hochschild Mining's Pallancanta Mine, Compañía de Minas Buenaventura's Uchucchacua Mine, and Hochschild's Arcata Mine.<sup>77</sup>
- 5.14 The table below summarizes silver mine production in Peru between 2004 and 2010:<sup>78</sup>

<sup>75</sup> Spot prices provided by SNL. (FTI-17)

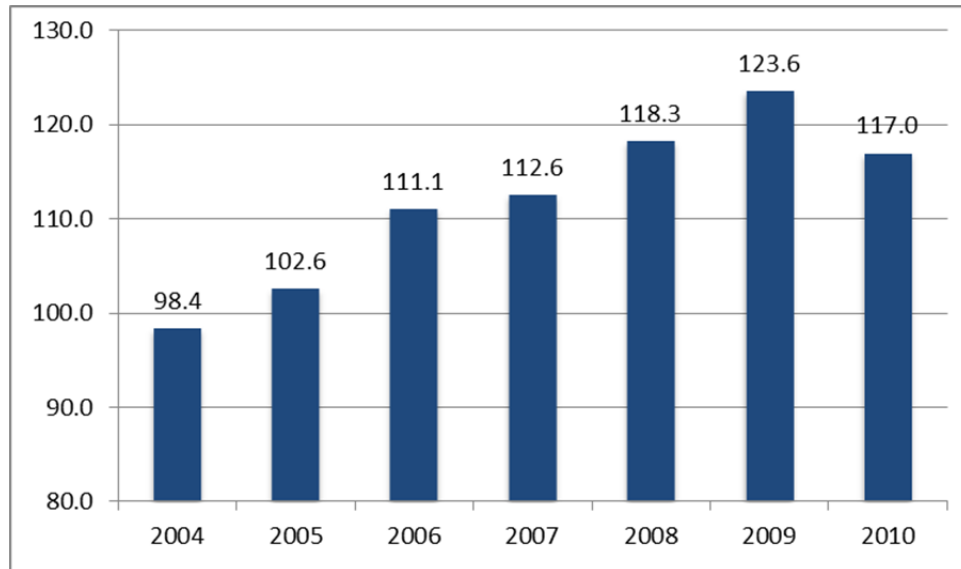
<sup>76</sup> USGS, "2010 Minerals Yearbook – Silver", February 2012, page 68.14-68.15 (FTI-10)

<sup>77</sup> USGS, "2010 Minerals Yearbook – Silver", February 2012, page 68.4 (FTI-10)

<sup>78</sup> Silver Institute, "World Silver Survey 2014", May 2014, page 28 (FTI-13)



**Figure 12 Silver Mine Production in Peru data 2004 to 2010 (millions of ounces)**



5.15 Peru has the largest defined Mineral Reserves of silver in the world.<sup>79</sup> According to the data from the USGS, mines in Peru are reported to contain approximately 120,000 tonnes of silver, which represents 23.5% of the world's defined Reserves.<sup>80</sup>

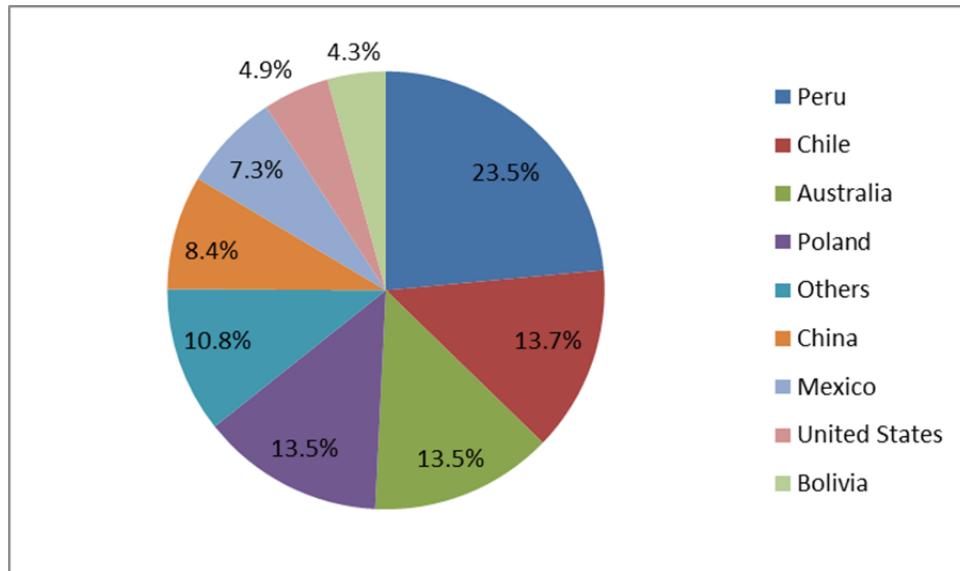
5.16 Silver reserves by country are summarized in the table below:<sup>81</sup>

<sup>79</sup> USGS, "2010 Minerals Yearbook – Silver", February 2012, page 68.4 (FTI-10)

<sup>80</sup> USGS, "Mineral Commodity Summaries", January 2011, page 147 (FTI-18)

<sup>81</sup> USGS, "Mineral Commodity Summaries", January 2011, page 147 (FTI-18)

**Figure 13**      **Silver Mine Reserve by Country**



5.17 Although Peru is one of the largest silver producers in the world, it is not a major silver exporter. In 2010, silver ranked 25<sup>th</sup> on a list of exports by Peru and comprised less than 1.0% of Peru's total export balance by dollar value in the year.<sup>82</sup>

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<sup>82</sup> Observatory for of Economic Complexity, "Products exported by Peru (2010)" (FTI-19)

## 6. Approach to Damages

### Introduction

- 6.1 In this section we discuss our general approach to determining the damages to the Claimant, the appropriate valuation date, and the methodologies considered and applied.
- 6.2 We have calculated the damages to the Claimant based on the principle set out in the judgment in the *Factory at Chorzow* case that damages are to “...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.”<sup>83</sup>
- 6.3 In our view, the quantification of damages sustained by a claimant following a wrongful act should, where possible, be based on objective information. For most businesses, specifically those not involved in the resource extraction industry, it would generally be necessary to establish historical sales and profits in order to quantify a loss of opportunity or reduction in value resulting from a wrongful act with a sufficient degree of precision (especially under an income-based approach). Mining, and other extractive businesses, are different than non-extractive businesses as the practices employed to assess mineral resources are well established, the time and costs required to develop and process the minerals can be estimated with a reasonable degree of precision, and, perhaps most importantly, well developed international markets exist for the processed or semi-processed metals products that will absorb a project’s entire production immediately.

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<sup>83</sup> Factory at Chorzow (Germ v. Pol), 1928 P.C.I.J (ser A), No 17 (Sept 13), page 47 (FTI-20)



### **Heads of Damage**

- 6.4 We have been asked to calculate the damages to the Claimant due to the alleged breaches of the Respondent as it relates to the Santa Ana Project on the basis that the alleged breaches resulted in the expropriation of the Santa Ana Project as of June 25, 2011. We have calculated the damages to the Claimant as the FMV of the Project as of the date immediately prior to the date on which the expropriation became known publicly (i.e. June 23, 2011). Our approach to the damages from the Santa Ana Project is set out in **Section 7** below; and,
- 6.5 As noted, we have also been asked to estimate the reduction in the value of Corani given the alleged breaches. We have based our calculations on the change in Bear Creek's EV over the period from immediately before the alleged breaches commenced (i.e. May 27, 2011) to June 27, 2011, the period immediately after the Expropriation Date. Our approach to determine the reduction in the value of Corani subsequent to the alleged breaches is set out in **Section 8** below

## 7. Santa Ana Damages

### Definition of Value

7.1 The Claimant claims that the Respondent's alleged breaches resulted in the unlawful expropriation of their rights in the Project without compensation.

7.2 Article 812 of the Treaty states that compensation for expropriated assets:<sup>84</sup>

*"...shall be equivalent to the fair market value of the expropriated investment immediately before the expropriation took place ("date of expropriation"), and shall not reflect any change in value occurring because the intended expropriation had become known earlier."*

7.3 FMV is not defined in the Treaty. We have defined FMV herein as follows:<sup>85</sup>

*"[T]he price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms-length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."*

### Valuation Date

7.4 One of the fundamental principles of the valuation of business interests is that the value of an asset or business interest is time specific. That is, it is a function of the conditions prevailing, facts known, and expectations held at a given point in time. Information that was not known at the Valuation Date or hindsight information should not be considered in the determination of FMV since market participants at that time would not have had the benefit of this information and would have transacted based only on the information available.<sup>86</sup>

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<sup>84</sup> "Canada-Peru Free Trade Agreement", August 2009, Article 812 (**FTI-21**)

<sup>85</sup> CICBV, "Practice Bulletin No. 2 – International Glossary of Business Valuation Terms", 2001, page 4 (**FTI-22**)

<sup>86</sup> Howard E. Johnson, "Business Valuation", 2012, page 34 (**FTI-23**)

- 7.5 Accordingly, the date on which the FMV of the Claimant's interest in the Project is assessed, absent the alleged breaches, is a key consideration in our analysis. Ultimately, the appropriate valuation date is a legal question that is decided by the Tribunal and as such we do not express an opinion thereon.
- 7.6 Although the Treaty is silent on compensation for unlawful expropriations, we are advised that in previous international arbitration cases involving unlawful expropriation some arbitral tribunals have considered whether an award should be made for any increase in the FMV of the asset taken from the date of taking to the date of the damages award in order to wipe out all consequences of the unlawful act and re-establish the situation which would, in all probability, have existed if that act had not been committed.
- 7.7 We have been instructed by Counsel to assume that the issuance of Supreme Decree 032 on June 25, 2011 by the Respondent constituted an act of expropriation under the Treaty and that the impending expropriation was disclosed publicly on June 24, 2011. Accordingly, we have used a Valuation Date of June 23, 2011, the date immediately prior to the date on which the expropriation became public knowledge.
- 7.8 Although the Claimant may be entitled to any increase in the FMV of the Project from the date of taking to the date of the damages award, as the hearing in this matter is scheduled for September 2016 (and we have estimated a six month period before the issuance of the award) we have not conducted a damages analysis as of this date to determine whether such an increase has occurred (i.e. absent the alleged wrongful acts).
- 7.9 If deemed necessary, our analysis may be updated prior to the hearing based on market conditions prevailing at that time to determine whether the FMV of the Mineral Properties at the hearing date, and any subsequent award, increased as compared to the FMV on the Valuation Date.

#### ***Valuation Approaches Considered and Applied***

- 7.10 In determining the primary valuation methodology to use to value the Project under the expropriation claim, the prospects of the Project must be assessed to determine whether the greater value is achieved under a liquidation approach or based on its value in use (i.e. a going concern approach). A liquidation approach would be used where it is determined that a business or group of assets is not viable as a going concern and would be determined as the net amount available, to its owners, if any, upon the liquidation of the assets.
- 7.11 Generally, where a group of assets is viable on a going concern basis, a going concern approach will yield the more appropriate value.

- 7.12 There are three main valuation approaches under a going concern approach:
- i) **Income-based approaches:** Generally in the valuation of a business interest, the discretionary after-tax cash flow is of primary importance. When applying a going-concern approach, methodologies such as the DCF or capitalized cash flow, where the present value of future cash flows that are expected to be generated by the business are determined, are preferred;
  - ii) **Market-based approaches:** Reference is made to information that is publicly available to the market at large. Value relationships can be inferred from information pertaining to publically traded business interests or transactions provided they are deemed sufficiently comparable to the subject business; and,
  - iii) **Cost-based approaches:** Cost-based approaches are based on the principle that cost contributes to future value. Often the historical book values of assets are revalued to market or net realizable values. Value may also be determined based on the principle that a notional purchaser would not spend more on an asset than it would cost them to construct the asset themselves.
- 7.13 The approach selected to value mining assets depends on the prospects of the subject Mineral Properties and is subject to the type and quality of information that is available upon which a valuation conclusion may be based. Multiple approaches are typically applied and compared. According to CIMVAL, the appropriate valuation approach(es) depends on the stage of exploration or development of the subject Mineral Property.
- 7.14 Mineral Properties can be categorized into the following four main types (although there are no clear-cut boundaries between types):<sup>87</sup>
- i) **Exploration Properties:** A Mineral Property that has been acquired, or is being explored, for mineral deposits but for which economic viability has not been demonstrated;

- ii) **Mineral Resource Properties:** A Mineral Property which contains a Mineral Resource that has not been demonstrated to be economically viable by a Feasibility Study or Prefeasibility Study. Mineral Resource Properties may include past producing mines, mines temporarily closed or on care-and-maintenance status, advanced exploration properties, projects with Prefeasibility or Feasibility Studies in progress, and properties with Mineral Resources which need improved circumstances to be economically viable;
- iii) **Development Properties:** A Mineral Property that is being prepared for mineral production and for which economic viability has been demonstrated by a Feasibility Study or Prefeasibility Study and includes a Mineral Property which has a current, positive Feasibility Study or Prefeasibility Study but which is not yet financed or under construction; and,
- iv) **Production Properties:** A Mineral Property with an operating mine, with or without a processing plant, which has been fully commissioned and is in production.



7.15 CIMVAL sets out the following valuation approaches that are generally considered appropriate to apply to a Mineral Property, by stage of development:<sup>88</sup>

**Figure 14 CIMVAL Valuation Approach Guidelines by Stage of Development**

<b><u>Valuation Approach</u></b>	<b><u>Exploration Properties</u></b>	<b><u>Mineral Resource Properties</u></b>	<b><u>Development Properties</u></b>	<b><u>Production Properties</u></b>
<b>Income</b>	No	In some cases	Yes	Yes
<b>Market</b>	Yes	Yes	Yes	Yes
<b>Cost</b>	Yes	In some cases	No	No

7.16 Based on our review of the FSU, the Project would be classified as a Development Property under CIMVAL as of the Valuation Date since it had established a Mineral Reserve, was in the process of completing the ESIA, and was readying for development of the site with expected production by the end of 2012.

7.17 Accordingly, we considered the application of income-based and market-based approaches for the purposes of determining the FMV of the Project at the Valuation Date.

#### **FMV of the Santa Ana Project Under the Income Approach**

7.18 The income-based approach is our primary valuation approach to determine the FMV of the Santa Ana project as at the Valuation Date. As discussed in the prior section, the DCF methodology takes forecasted future cash flows and discounts them to a present date by applying a risk adjusted discount rate.

7.19 Our DCF valuation analysis is based on the financial model provided to us by RPA.

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<sup>88</sup> CIMVAL, page 22. (FTI-04)

- 7.20 We have reviewed the financial models prepared by RPA in detail and have discussed the key assumptions and source data upon which they are based with RPA. It is our view that the RPA Extended Life Case, which includes production from both the Reserves and Resources of the Santa Ana project, is useful for determining the FMV of the Project as a whole. We discuss the RPA Extended Life Case further below.
- 7.21 It is our view that while it is appropriate for a Feasibility Study to include only Reserves in its economic analysis since the focus of that analysis is to demonstrate economic viability rather than determining the FMV of the project, Resources identified pursuant to internationally recognized mining standards also have value which must be included in a proper valuation. According to the CIMVAL standards, “All Mineral Reserves and Mineral Resources on a Mineral Property should be considered in its Valuation.”<sup>89</sup>
- 7.22 The value of the Resources can either be determined by adding the Resources to the DCF model or by using market-based methods such as comparable transactions of properties with Resources that are otherwise similar to the subject project. With respect to adding Resources to a DCF valuation analysis, the CIMVAL states,

*For the Income Approach methods, it is generally acceptable to use all Proven Mineral Reserves and Probable Mineral Reserves, and to use Measured Mineral Resources and Indicated Mineral Resources in the circumstances described below...Mineral Reserves and Mineral Resources used in the Income Approach must be estimated or confirmed by a Qualified Person and must be Current with respect to the Valuation Date. It is generally acceptable to use Mineral Resources in the Income Approach if Mineral Reserves are also present and if, in general, mined ahead of the Mineral Resources in the same Income Approach model, provided that in the opinion of a Qualified Person the Mineral Resources as depicted in the Income Approach model are likely to be economically viable.*

*Where Measured and Indicated Mineral Resources are used in the Income Approach, the technical and related parameters used must be estimated or confirmed by one or more Qualified Persons and a qualifying statement must be included in the Valuation Report about the confidence level of the technical and related parameters relative to Feasibility Study or Prefeasibility Study confidence level. Technical and related parameters must be Current with respect to the Valuation Date.*

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<sup>89</sup> CIMVAL, page 24 (FTI-04)

*Inferred Mineral Resources should be used in the Income Approach with great care, and should not be used if the Inferred Mineral Resources account for all or are a dominant part of total Mineral Resources. Any use of Inferred Mineral Resources in the Income Approach must be justified in the Valuation Report and treated appropriately for the substantially higher risk or uncertainty of Inferred Mineral Resources compared to Measured and Indicated Mineral Resources. Inferred Mineral Resources should only be used in the Income Approach if Mineral Reserves are present and if, in general, mined ahead of the Inferred Mineral Resources in the Income Approach model, and/or if Measured and/or Indicated Mineral Resources are used as specified in G4.3 to G4.7 and if, in general, mined ahead of Inferred Mineral Resources in the Income Approach model.*

- 7.23 Our valuation of the Project under the DCF methodology, under the RPA Extended Life Case is consistent with the above noted CIMVAL guidelines since the Measured and Indicated Resources (outside of the Reserve pit) and the Inferred Resources (within the Reserve pit) are based on RPA's assessment and are modelled to be mined after the Reserves. According to RPA, cumulative dilution and extraction factors of 25.0% were applied, resulting in a conversion rate of 75.0%.<sup>90</sup>

#### **RPA Models**

- 7.24 The FSU's cash flow model, the basis for the RPA Revised Base Case, included production of approximately 37.1 million tonnes of ore containing 63.2 million ounces of silver, effectively the entirety of the Project's Mineral Reserves.<sup>91</sup> The RPA Revised Base Case includes additional Reserves for a total of 45.9 million tonnes of ore processed containing 66.3 million ounces of silver. The RPA Extended Life Case includes additional mineable Resources, increasing total mill feed to 81.3 million tonnes containing 107.3 million ounces of silver.<sup>92</sup> The RPA Extended Life Case increased the LOM of the Project to approximately 24 years.<sup>93</sup>
- 7.25 The RPA Extended Life Case financial model prepared by RPA includes the following main parameters by year over the estimated LOM:

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<sup>90</sup> RPA Report, page 14-3

<sup>91</sup> FSU, page 136 (FTI-06)

<sup>92</sup> RPA Report, page 14-3

<sup>93</sup> RPA Report, page 15-1

- i) **Production Rates:** Mine and mill production volumes;
  - ii) **Recovery Rates:** Volumes of silver and gold recovered in processing;
  - iii) **Gross Revenue:** Calculated as recovered metal volume multiplied by the payable percentage, multiplied by the price. We have provided the prices to RPA to include in the RPA models based on the price forecasting methodology set out below;
  - iv) **Net Revenue:** Calculated as gross revenue less transport and treatment charges (which equals the 'Net Smelter Return'), less royalties;
  - v) **Operating Costs:** Mining costs, processing costs and general and administrative costs; and,
  - vi) **Capital Costs:** Initial and ongoing capital costs for the mine, processing plant, infrastructure, tailing facilities, other capital costs (i.e. pre-production, indirect costs, spare parts etc.), working capital and reclamation and closure costs. The amounts presented include appropriate contingencies.
- 7.26 We have adopted the pre-tax cash flows provided in the RPA Extended Life Case for each year of the LOM and calculated the after-tax cash flow which we then discounted to the Valuation Date by an appropriate risk-adjusted rate of return as discussed below.

#### **Commodities Price Forecast**

- 7.27 One of the key variables in the DCF model is the price that will be received over the life of the Project from the sale of silver (and gold). To determine the FMV of the Project we must determine the price that a notional buyer and seller for the Project would arrive at for the purpose of a transaction as at the Valuation Date. Thus, it is less important to arrive at an empirically accurate forecast of silver prices than it is to determine the information and data that would inform the parties involved in completing a transaction for the Project at the Valuation Date.

### **Short Term to Medium Term Commodities Prices**

- 7.28 A silver producer can use futures contracts to sell its production forward to 'lock-in' the price received as a hedge against the risk of future declines in the silver price. We have been advised that absent the alleged breaches, Bear Creek would have used futures contracts to hedge its commodity price risk.<sup>94</sup>
- 7.29 In our view the futures prices over the periods they are available provide actual market prices that could have been obtained at the Valuation Date for sales of silver in the period from the Valuation Date through to December 2015. Accordingly, we have applied the futures prices for this period in our DCF analysis.
- 7.30 As shown in **Figure 10**, the contract price for silver futures decreased in each year to \$33.90 per ounce for December 2015 contracts. At an estimated inflation rate of 2.4%<sup>95</sup> the December 2015 contract price was \$30.57 per ounce in real (2011) dollars as at the Valuation Date.

### **Long-Term Commodities Prices**

- 7.31 Market actors look to various different sources when forecasting long-term commodity prices. According to a PWC publication in which PWC surveyed silver miners about their reliance on different data sources in preparing their long term silver price estimates, the principal sources of information used include:<sup>96</sup>
- i) Historical prices;
  - ii) The spot price which reflects the current state of the market but had been volatile in the period leading up to the Valuation Date;
  - iii) The price of silver futures contracts, i.e. contracts for the delivery of silver at future dates, which reflects the market's expectation of the silver price over the next 2 to 3 years;

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<sup>94</sup> Witness statement of Andrew Swarthout, paragraph 35

<sup>95</sup> Federal Reserve Bank of Philadelphia, "Survey of Professional Forecasters: Second Quarter 2011", May 13, 2011, page 1 (**FTI-24**)

<sup>96</sup> PWC, "Gold, silver and copper price report 2014", December 2013, page 15 (**FTI-25**).

PWC, "Gold, silver and copper price report 2015", November 2014, page 9 (**FTI-26**).

- iv) Management's estimates used to value the Project Reserves and Resources; and,
- v) Analyst forecasts as of the Valuation Date relating to the short, medium and long term.

7.32 We have presented a summary of the results of the surveys conducted by PWC with respect to the reliance placed on each of the above noted sources of pricing information in the figure below.

**Figure 15 Results of PWC surveys of data relied on by silver miners to estimate the long term price<sup>97</sup>**

Indicator	Nov 2014 PWC Survey	Dec 2013 PWC Survey	Average
Spot price	0.0%	6.0%	3.0%
Forward curve	0.0%	3.0%	1.5%
Management's internal estimates	40.0%	55.0%	47.5%
Consensus pricing	50.0%	19.0%	34.5%
Historical curve	10.0%	16.0%	13.0%

7.33 We note that survey data regarding silver miners' long term price estimate was not made available prior to the 2014 PWC report (dated December 2013) and confirmed with the authors of the report that such information was not collected during earlier time periods. Therefore, we have assumed that market actors would behave in a manner consistent with the average of the two surveys.

7.34 We discuss each of the various sources of pricing further below:

#### **Spot Price**

7.35 Over the preceding year, the silver spot price demonstrated considerable volatility having increased 163% from \$18.30 on June 1, 2010 to its peak of \$48.70 on April 28, 2011, and then decreased by 28.7% thereafter to \$36.01 on the Valuation Date.<sup>98</sup> In the six months preceding the Valuation Date, daily price volatility increased with fluctuations of as much as \$6.00 per ounce in the daily fix price, as shown in the chart below:

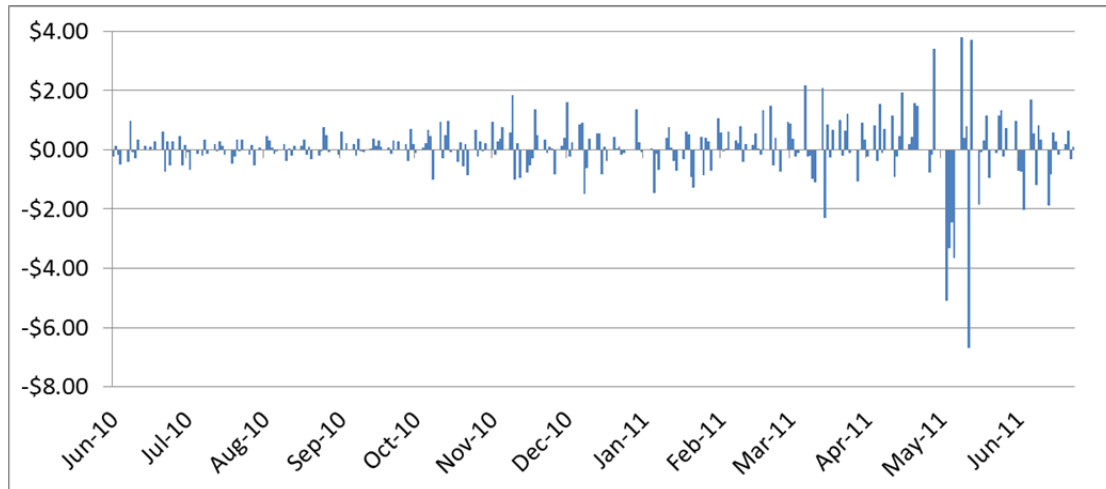
<sup>97</sup> PWC, "Gold, silver and copper price report 2014", December 2013, page 15 (FTI-25).

PWC, "Gold, silver and copper price report 2015", November 2014, page 9 (FTI-26).

Percentages do not add to 100%, likely due to rounding.

<sup>98</sup> Silver prices provided by SNL. (FTI 15).

**Figure 16 Daily Change in Silver Price from June 1, 2010 to June 23, 2011**



7.36 The volatility in the silver spot price in the months leading up to the Valuation Date makes it more difficult for market participants to estimate the price going forward. According to surveys conducted by PWC, spot price was not relied upon to set long term expectations in 2014 and was only afforded a weighting of 6.0% by those surveyed in 2013.<sup>99</sup> However, we note that spot prices inform management's internal expectations which, as noted above, is the highest category relied upon by those surveyed.

#### **Futures Contracts**

7.37 Similar to the spot prices, whereas future prices also may not have been used on their own by silver companies to estimate forward looking prices, they would serve to inform management's internal expectations.

7.38 Thus, we have applied the average weighting of 1.5% to futures prices per the PWC surveys in determining the silver price applicable to the period from 2016 onwards (i.e. the long-term).

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<sup>99</sup> In our discussions with the authors of the PWC study they indicated that they had not asked the questions relating to the reliance placed on various sources of pricing data in their surveys in years prior to 2013 but felt that the types of data and weightings would remain relatively constant over time and thus the results obtained in 2013 and 2014 would apply to 2011.

7.39 We have also considered long-term commodity prices based on the last available futures price since this methodology was accepted by the Tribunal in a recent arbitration case involving mineral assets (*Gold Reserve Inc. v. Bolivarian Republic of Venezuela*).<sup>100</sup>

#### **Management Price Estimates**

7.40 In the period prior to the Valuation Date, Bear Creek management estimated forward-looking silver price as the average of historical annual prices over the previous three years and two years of forward price data.<sup>101</sup> This methodology was presented to investors and we understand that this also aligned with management's long-term view of commodities prices prior to the Valuation Date.<sup>102</sup> We have calculated the estimated prices as at the Valuation Date using Bear Creek management's methodology in the table below:

**Figure 17 Average of three year trailing and two year forward prices at the Valuation Date (\$ per ounce):**

	Three trailing years			Two forward years		Average
	Actual <sup>(1)</sup> 2008-2009	Actual <sup>(1)</sup> 2009-2010	Actual <sup>(1)</sup> 2010-2011	Forward 2011-2012	Forward 2012-2013	
Price estimate using historic and analyst forecast prices <sup>(2)</sup>	13.59	17.47	29.14	34.27	30.21	<b>24.94</b>
Price estimate using historic and future prices <sup>(3)</sup>	13.59	17.47	29.14	34.65	33.75	<b>25.72</b>

#### Notes

(1) Average daily LBM silver fix in (real \$ as at June 23, 2011) calculated from June 24 to June 23 of the following year.

(2) Forward price is the average of 10 forecasters' estimates produced during the month preceding the Valuation Date. See **Appendix 6**.

(3) Forward price is the average of the futures contracts for the July-June months in each period. Futures prices provided by Bloomberg.

(4) Historic prices were converted to June 2011 dollars using monthly CPI. Prices provided by SNL.

<sup>100</sup> *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1, paragraph 837 (FTI-27)

<sup>101</sup> Bear Creek Mining, "Presentation to Denver Gold Group – European Gold Forum", April 12-15, 2011, Regulatory Notes on slide 25 (FTI-28).

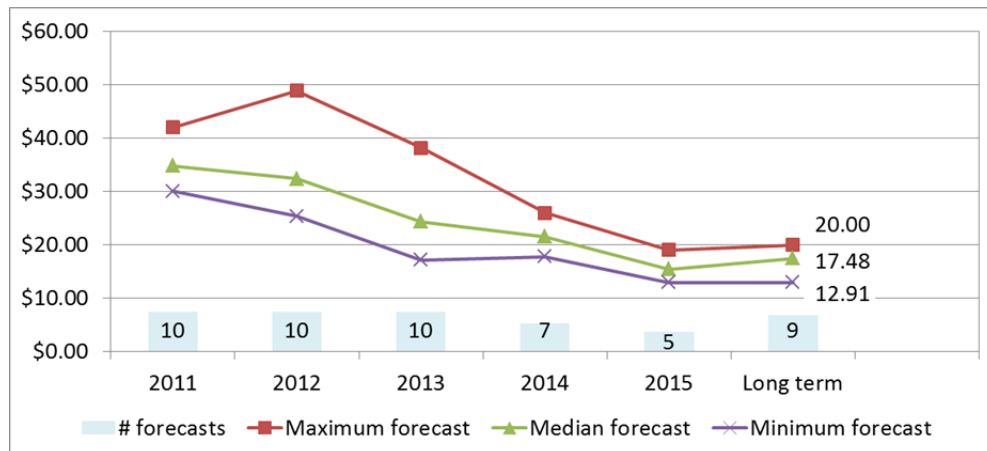
<sup>102</sup> Witness statement of Andrew Swarthout, paragraph 35



### Analyst Forecasts

- 7.41 We have also reviewed a summary of silver price forecasts prepared by various financial industry analysts in the period preceding the Valuation Date. We obtained a summary of silver price forecasts compiled by TD Bank for the period from February 2011 through June 2011.<sup>103</sup> In order to ensure that included forecasts that reflected market conditions at the Valuation Date, we only included forecasts that were produced in the month preceding the Valuation Date.
- 7.42 The figure below shows the high, low and median forecasts for the 10 silver price forecasts contained in the TD Bank summary that were prepared during June 2011:

**Figure 18 Silver price forecasts produced during June 2011 (Real 2011 \$ per ounce)<sup>104</sup>**



- 7.43 As shown in the figure above, the median forecasted silver prices declined in each year from 2012 to 2015, with a long-term real 2011 price after 2015 of \$17.48 per ounce.

<sup>103</sup> TD Bank, "Commodity Price Research Estimates", June 25, 2011, page 2 (FTI-29)

<sup>104</sup> Refer to **Appendix 6**.

### Silver Price Forecast - Conclusions

7.44 We have provided a summary of the silver price indicators described above in the following figure:

**Figure 19 Silver Price Indicators at the Valuation Date**

Indicator (Ag)	Value (June 2011 USD)
Spot price	36.01
Dec 2015 futures contract	30.57
Three year trailing, two year future average (management's methodology)	24.94 to 25.72
Consensus forecast (Median)	17.48
Historic (three year trailing average)	20.07
Feasibility study (April 2011)	14.50

7.45 As discussed above, we have applied futures contract prices from 2013 to 2015 as they represent actual market-based prices for the sale of silver during those years and in our view these contracts represent objective benchmarks of the prices that a willing buyer and a willing seller would consider when conducting transactions over this period.

7.46 From 2016 and onward, we have applied a long term price estimate based on the PWC surveys' price indicator percentages (**Figure 15**) to the price indicator values at the Valuation Date (**Figure 19**).

**Figure 20 Long Term Price Estimates based on PWC Survey (\$ per ounce)**

Weighted average long term price (Ag)	Value (June 2011 US dollars)
Average using Nov-2014 PWC survey ratios	20.72 to 21.03
Average using Dec-2013 PWC survey ratios	23.32 to 23.76
Average using average ratios of Nov-2014 and Dec-2013 surveys	22.02 to 22.40

7.47 As noted above, over the short and medium term where futures contract prices were available (i.e. to December 31, 2015), we have applied those prices restated into real 2011 dollars in our DCF analysis and have applied the long-term price of \$22.21 per ounce (in 2011 dollars) for periods thereafter.

- 7.48 For gold price forecasts, we have used a similar methodology as described above for silver. That is, we used gold price forecasts from analysts prepared in June 2011 as provided by TD Bank and spot, futures and Bear Creek management's methodology (average of three years of historical price data and two years of futures data). Based on this methodology we have used a forecasted price of \$1,315.64 per ounce of gold from 2017 onward.<sup>105</sup>
- 7.49 A summary of the commodity prices we have applied in our DCF analysis by year is provided in the figure below:

**Figure 21 Summary of Commodities Prices Applied (\$ per ounce)**

Prices Applied	2013	2014	2015	2016	Long-term
Silver	33.20	31.83	30.78	22.21	22.21
Gold	1,505.16	1,502.49	1,514.61	1,539.28	1,315.64

**Alternative Long-Term Price Methodology**

- 7.50 As noted, we have also calculated the FMV of the Project based on a long-term price equal to the last available silver futures contract price, in real terms, and applied this price to the period from 2016 onward (2017 onward for gold). This metals price forecasting approach was accepted and adopted as common industry practice by the Tribunal in the recent *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* case.<sup>106</sup>
- 7.51 In the event that arm's length parties would have used the methodology adopted in the recent *Gold Reserve* case, the prices applied to our DCF analysis would be as follows:

**Figure 22 Summary of Commodities Prices under the Gold Reserve Methodology (\$ per ounce)**

Prices Applied	2013	2014	2015	2016	Long-term
Silver	33.20	31.83	30.78	30.57	30.57
Gold	1,505.16	1,502.49	1,514.61	1,539.28	1,546.39

<sup>105</sup> Gold futures contracts were available through to the end of 2016.

<sup>106</sup> *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/09/1, paragraph 837 (FTI-27)

### **Discount Rate**

- 7.52 In order to calculate the value of a future stream of cash flows to a specific date (i.e. the Valuation Date), they must be discounted by an annual rate of return commensurate with the risk associated with receiving those cash flows in the amounts and within the time expected. Accordingly, we have independently derived an appropriate risk-adjusted discount rate based on first principles, to apply to the forecasted future after-tax cash flows from the Project.
- 7.53 The discount rate that we have applied in our income approach is a weighted average cost of capital (“WACC”) based on a CAPM<sup>107</sup> approach. We have discussed the components of the CAPM approach in **Appendix 5**. Based on our analysis, we have determined that the appropriate discount rate to convert future after-tax cash flows of the Project to a present value at the Valuation Date is 10.0%.

### **Income-Based Approach Conclusion**

- 7.54 Based on the methodology set out above, we have determined the FMV of the Santa Ana Project as at the Valuation Date under a DCF methodology to be \$224.2 million, before the addition of interest. Please see **Schedule 1**.
- 7.55 According to the RPA Revised Base Case, Reserves production would occur between 2013 and 2025. Based on our DCF model, this period represents a net present value of \$191.0 million, which implies that the Santa Ana Resources have a value of approximately \$33.2 million.
- 7.56 The last silver futures contract available at the Valuation Date was set to expire in December 2015 and priced, in real terms, at \$30.57 per ounce.<sup>108</sup> The last gold futures contract available at the Valuation Date was set to expire in December 2016 and was priced, in real terms, at \$1,546.39 per ounce.
- 7.57 Using an alternative long-term price forecast based on the last futures price as a proxy for the long-term price (as per the *Gold Reserve* case), results in a FMV under the DCF methodology of approximately \$333.7 million, before the addition of interest, for the Project. Please see **Schedule 2**.

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<sup>107</sup> The Capital Asset Pricing Model (“CAPM”) is a theoretical comparative risk model that relates risk and return.

<sup>108</sup> Futures prices provided by Bloomberg. (FTI-16)

### Sensitivity Analysis

7.58 We have also conducted an analysis of the impact of changes in key parameters on the conclusion of value of the Santa Ana Project under the DCF methodology. The key parameters we have assessed include changes in commodity prices, operating expenditures, capital expenditures, and discount rate. The results are shown in the table below:

**Figure 23 Income-based Approach Sensitivity**

Description	NPV (\$ millions)	Difference from Base Case (\$ millions)
Base Case	\$ 224.2	NA
Commodities Price + 10.0%	\$ 272.3	\$ 48.2
Commodities Price - 10.0%	\$ 175.7	\$ (48.5)
Discount Rate = 11.0%	\$ 206.6	\$ (17.6)
Discount Rate = 9.0%	\$ 243.8	\$ 19.7
CAPEX + 10.0%	\$ 217.6	\$ (6.6)
CAPEX - 10.0%	\$ 230.7	\$ 6.5
OPEX + 10.0%	\$ 203.8	\$ (20.3)
OPEX - 10.0%	\$ 244.5	\$ 20.3

### FMV Value of Santa Ana Project Under a Market-based Approach

- 7.59 Mining projects at all stages of development and the companies that own them are acquired in the open market on a regular basis. The parties involved in these transactions are often publicly listed on major stock exchanges as a means of accessing global financial markets and obtaining the financing necessary to explore and develop their Mineral Properties. The disclosures made by companies regarding these transactions and the daily trades of their shares provide the basis for an analysis under the market-based approach.
- 7.60 Under a market-based approach, information from market-based sources that provide a reasonable proxy for the value of the Project or to suitably comparable mining projects or companies is analysed and applied (with adjustments as necessary) to estimate the FMV of the Project at the Valuation Date.
- 7.61 As part of our valuation of the Project we have reviewed the following sources of market-based information:

- i) Market transactions for comparable projects and companies;
  - ii) Share price data for Bear Creek's shares over the period up to the Valuation Date; and,
  - iii) Analyst reports.
- 7.62 Based on our review of the above noted data, we have considered the following market based valuation methodologies:
- i) **Comparable transaction method:** Under this method, value metrics (i.e. price paid per ounce of silver Resources) observed in transactions involving suitably similar Mineral Properties proximate to the Valuation Date are applied to the Project to determine value. According to CIMVAL, this is a primary methodology that is "widely used with variations";<sup>109</sup> and,
  - ii) **Market capitalization method:** The value of the Project is determined with reference to the market capitalization of Bear Creek as at the Valuation Date. According to CIMVAL this is considered a secondary methodology, and is more applicable to the valuation of single property asset junior companies than to the underlying Mineral Properties they hold.<sup>110</sup>
- 7.63 We discuss each of these methodologies, the relative strengths and weaknesses of each and the extent to which we have relied on them in our conclusion of value below.

### Comparable Transactions

- 7.64 We have considered an analysis under a comparable transactions methodology based on information relating to transactions for comparable assets that are available in the public domain. In our view, it is important to understand and assess the technical attributes of each comparable Mineral Property observed.
- 7.65 We reviewed a database of mining project transactions provided by SNL Financial Inc. ("SNL") as well as press releases, analyst reports, and other sources to define the scope of relevant project and company-level transactions in an attempt to identify transactions involving suitably comparable projects to the Santa Ana Project.

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<sup>109</sup> CIMVAL, page 23 (FTI-04)

<sup>110</sup> CIMVAL, page 23 (FTI-04)

7.66 Our transactions screening analysis was based on the following criteria:

- i) Transactions announced between June 1, 2009 and June 23, 2011 (i.e. the Valuation Date);
- ii) Acquisitions including defined silver Mineral Reserves or Mineral Resources;
- iii) Transactions for a controlling interest (i.e. greater than 50.0% of the project or company acquired);
- iv) Transactions for cash or share consideration. We have excluded transactions with contingent consideration and option agreements since, in our view, they make the value of the underlying silver assets difficult to establish; and,
- v) Transactions for projects that intend to process target minerals through a heap leach process, similar to the Santa Ana project.

7.67 Based on the criteria set out above, we were unable to identify any transactions that we deemed to be sufficiently comparable to the Santa Ana Project for the purposes of determining FMV for various reasons including:

- i) None of the projects identified in the databases searched included Mineral Reserves. As discussed in **Paragraph 4.18**, Mineral Reserves constitute the economically mineable portion of defined Measured or Indicated Resources. As Mineral Reserves have been deemed to be economically viable, projects that contain Mineral Reserves are generally valued more highly than those that only contain Mineral Resources. As such, the comparability of the transactions reviewed to the Santa Ana Project's Mineral Reserves is limited;
- ii) The transactions identified related largely to gold dominant projects or projects with different mineralization, geology or stage of development;
- iii) The projects obtained in our screening analysis were located in different jurisdictions and none were located in Peru. The jurisdictional differences of these projects would tend to impact value due to differences in geology, legislative regimes (i.e. environmental regulations, royalties, and corporate taxes), political risk, etc.; and,

- iv) The transactions observed in our screening analysis occurred in periods of up to over a year and a half prior to the Valuation Date. Over this same period, silver prices increased from \$16.57 per ounce to \$36.01 per ounce.<sup>111</sup> As discussed in **Paragraph 7.58**, changing underlying commodity prices materially impacts the value of individual projects (and transactions for these projects).

#### **Bear Creek's Publicly Traded Share Price**

- 7.68 At or about the Valuation Date, the common shares of Bear Creek were publicly traded on the TSX Venture Exchange. The price at which its stock traded provides a point in time consensus of the view of stock market participants as to the value of a “normal sized” trading block of Bear Creek’s shares. Thus, we have also considered the price at which the Bear Creek shares traded over the period leading up to the Valuation Date (and thereafter) in our valuation analysis.
- 7.69 We have determined that the Bear Creek share price does not provide a sufficiently reliable measure to determine the FMV of the Project at the Valuation due to the following:
- i) Bear Creek had other assets including Corani and other exploration properties at the Valuation Date, the value of which would need to be determined and deducted to arrive at the FMV of the Project;
  - ii) Publicly traded share prices of junior mining companies like Bear Creek may not be representative of the FMV of the underlying mineral properties they own due to a number of factors including:
    - (1) Sentiment and momentum: they are driven by behavioural factors, such as panic, fear, greed, etc. and have been evidenced by striking volatilities around multiple events in the history of stock market, such as the Black Monday crash of October 1987, the Dot-com crash around 2000, and the most recent financial crisis in 2008.<sup>112</sup>
    - (2) Liquidity and trading ease: while the value of an asset may not change much from period to period, liquidity and ease of trading can, and as it does, so will the price.

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<sup>111</sup> Silver spot prices provided by SNL. (FTI-15)

<sup>112</sup> Aswath Damodaran, “Price and Value: Discerning the Difference”, May 2014, page 38 (FTI-30)



- iii) The Bear Creek traded share price may have reflected the impact from the Respondent's actions, or other factors (i.e. protests) prior to the Valuation Date, and therefore may not have reflected the value of the Project absent the alleged breaches.
- 7.70 Notwithstanding the fact that we have not relied upon the Bear Creek share price as an indication of the FMV of the Project, in our view the behaviour of Bear Creek's stock price over the period immediately prior to and after the alleged breaches is illustrative of the market's perception of the impact of the alleged breaches on the Claimant's investment.
- 7.71 We have examined the relationship between Bear Creek's stock price, the S&P/ TSX Global Mining Index, and the silver spot price prior to the alleged breaches and determined that there was a weak relationship prior to the expropriation.<sup>113</sup> During this period of time, Bear Creek was an exploration company, and as such we would expect a weak correlation between the price of its stock and the reference points listed above.
- 7.72 However, from Valuation Date onward, the Santa Ana project was entering the development stage with the expectation that, absent the alleged breaches, pre-production would begin within the year. Financing was also in place for the Santa Ana project,<sup>114</sup> and assuming no further impediments to production, it is reasonable to assume that the price of Bear Creek's shares would have been more closely aligned with the index (or commodity price) following the Valuation Date.
- 7.73 Accordingly, we have examined the historical silver price and compared it to the Bear Creek share price over the period from May 27, 2011 to June 30, 2011. Over this period the share price could be impacted by myriad factors including changes in commodity prices, silver supply/demand, macro-economic factors, investor speculation, and the actions of the Respondent.

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<sup>113</sup> Share prices and index prices provided by Capital IQ. **(FTI-03)**

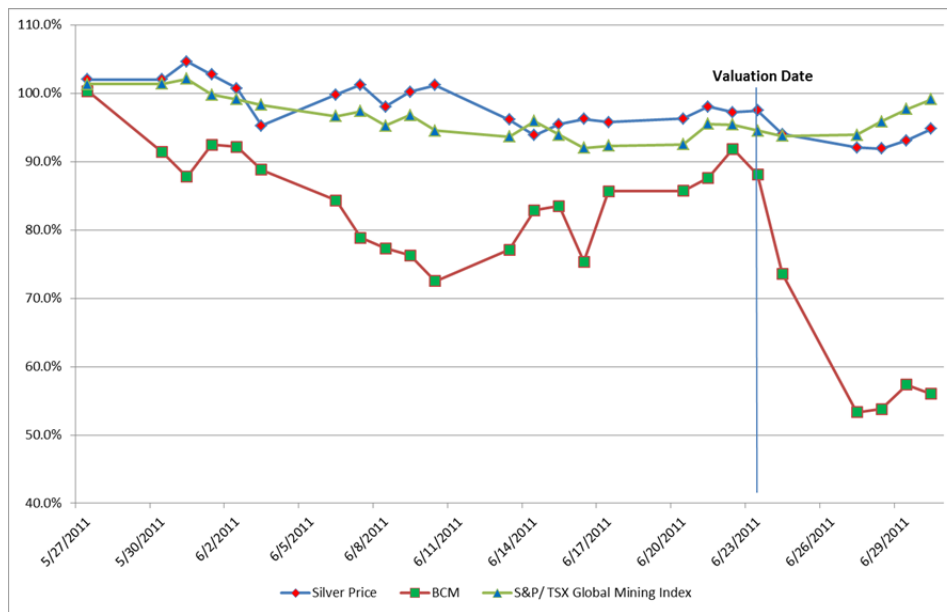
Silver spot prices provided by SNL. **(FTI-15)**

From January 2009 to the Valuation Date, Bear Creek's share price had a R squared factor, the degree that a given independent variable (i.e. the S&P/ TSX Global Mining Index) explains changes in a given dependent variable (i.e. Bear Creek's shares), of approximately 0.2 against the Global Mining Index and 0.5 against the silver price. R squared ranges between 0.0 and 1.0, with lower factors showing weaker correlations.

<sup>114</sup> Bear Creek, "Annual Information Form", March 29, 2011, page 6 **(FTI-02)**

7.74 The chart below illustrates the percentage change in Bear Creek's share price from May 27, 2011 through the passing of the ESIA Suspension to the Valuation Date and the period immediately thereafter (i.e. to June 30, 2011) relative to the percentage change in the silver price and the S&P/TSX Global Mining Index:

**Figure 24 Percentage Change in Bear Creek Share Price, Silver Price and S&P/TSX Global Mining Index from May 27, 2011 to June 30, 2011<sup>115</sup>**



7.75 Bear Creek's share price declined subsequent to announcement of the ESIA Suspension from \$7.15 on May 27, 2011 to \$5.17 on June 10, 2011.<sup>116</sup> Although Bear Creek's share price recovered prior to the Valuation Date, it fell sharply after the issuance of the Supreme Decree 032 on June 25, 2011. The stock traded at \$6.28 on the Valuation Date and fell to \$3.80 immediately after the Expropriation Date (i.e. June 27, 2011), a decrease of 39.5%.<sup>117</sup>

<sup>115</sup> Share prices and index values provided by Capital IQ. (FTI-03)

Silver spot prices provided by SNL. (FTI-15)

<sup>116</sup> Share prices provided by Capital IQ. (FTI-03)

<sup>117</sup> Share prices provided by Capital IQ. (FTI-03)

- 7.76 Bear Creek's market capitalization (i.e. share price multiplied by number of shares outstanding), decreased from \$658.6 million on May 27, 2011<sup>118</sup> to \$578.5 million by the Valuation Date. Immediately after the Expropriation Date, Bear Creek's market capitalization decreased to \$350.2 million. Thus, from the date just before the ESIA Suspension to immediately after the Expropriation Date, Bear Creek's market capitalization decreased by \$308.4 million, a decline of 46.8%. Over this same period, the price of silver declined from \$37.69 per ounce to \$34.01 per ounce, a decrease of 9.8%, while the S&P/ TSX Global Mining Index declined from 130.8 to 121.2, a decrease of 7.3%.
- 7.77 EV is related to market capitalization and provides a more relevant measure of the value of the company's operating assets, or in Bear Creek's case its Mineral Properties, as it accounts for the value of the company's net debt (total debt less cash and equivalents) in addition to its equity value as measured by its market capitalization. On April 25, 2011, Bear Creek's EV was \$724.8 million. Prior to the ESIA Suspension, (i.e. May 27, 2011) to June 27, 2011, Bear Creek's EV dropped by \$307.2 million or 56.5% (\$543.5 million to \$236.2 million) again as compared to a 7.3%-9.8% decline in market indicators (silver price, S&P/ TSX Global Mining Index) over the same period.<sup>119</sup>
- 7.78 Thus, Bear Creek's EV declined by approximately 48% (on average) more than the market indicators over this period, or by approximately \$260.9 million in dollar terms. Although the share prices or market capitalization over this period may not be indicative of the FMV of the Project, the reduction over this period relative to the change in the silver price or the S&P/ TSX Global Mining Index may be indicative of the order of magnitude of the damages sustained by the Claimant subsequent to the alleged breaches.<sup>120</sup>

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<sup>118</sup> Market capitalization provided by Capital IQ. **(FTI-03)**

<sup>119</sup> Enterprise value provided by Capital IQ. **(FTI-03)**

Calculations assume net debt of \$112.4 million based on Bear Creek's unaudited March 31, 2011 balance sheet.

<sup>120</sup> However, as noted in section 9 below, to the extent the Bear Creek share price did not reflect the value of the Project as at May 27, 2011, the subsequent decline may only relate the impact of the alleged breaches on Corani.

## Analysts

- 7.79 We have also reviewed reports prepared by investment analysts of Bear Creek over the period leading up to the Valuation Date. In our view, these analysts inform the market as to the value of Bear Creek and its underlying assets and many performed their own analyses of the value of the Project and Corani over the relevant time period (using income and market approaches to value). Accordingly, we have prepared a summary of their analyses of the net asset value (“**NAV**”) of the Santa Ana Project in the period prior to the Valuation Date.
- 7.80 We have reviewed reports published by the following analysts in the period preceding the Valuation Date:
- i) Bank of Montreal Capital Markets (“**BMO**”);
  - ii) Raymond James;
  - iii) Paradigm Capital (“**Paradigm**”);
  - iv) Canaccord Genuity (“**Canaccord**”);
  - v) Scotia Capital (“**Scotia**”);
  - vi) Haywood; and,
  - vii) Cormark Securities (“**Cormark**”).
- 7.81 We have provided a summary of the above noted analysts’ reports on Bear Creek in the period leading up to the Expropriation Date and have summarized their findings in the table below:

**Figure 25 Summary of Industry Analyst Santa Ana NAV Estimates<sup>121</sup>**

Analyst	Report Date	LT Silver Price (\$ per ounce)	Discount Rate (%)	Currency	NAV (LC millions)	USD: CAD Conversion	NAV (\$ millions)
BMO	6/1/2011	\$ 18.00	10.0%	USD	\$ 108.6	1.00	\$ 108.6
Raymond James	6/2/2011	\$ 25.00	N/A	CAD	\$ 193.0	0.98	\$ 196.8
Paradigm	6/8/2011	\$ 38.25	5.0%	USD	\$ 508.6	1.00	\$ 508.6
Canaccord	6/7/2011	\$ 47.50	15.0%	USD	\$ 352.2	1.00	\$ 352.2
Scotia	5/31/2011	N/A	N/A	CAD	\$ 179.0	0.97	\$ 184.8
Haywood	3/17/2011	\$ 18.50	5.0%	CAD	\$ 218.0	0.99	\$ 220.7
Cormark	1/20/2011	N/A	7.5%	USD	\$ 233.0	1.00	\$ 233.0
<b>Average</b>		<b>\$ 29.45</b>	<b>8.5%</b>				<b>\$ 257.8</b>

- 7.82 Converting the CAD-denominated analyst estimates to USD at the respective analyst report dates results in an average estimate of \$257.8 million. Removing the high and low estimates (Paradigm and BMO, respectively), the average estimate is \$237.5 million.
- 7.83 We note that the large disparity caused by the different valuation assumptions applied (specifically silver price and discount rate) means that the individual conclusions presented by the analysts may not be directly comparable. Although we have not reviewed the detailed valuation models relied upon by each analyst and thus we cannot comment on the appropriateness of the valuation assumptions employed by each analyst as these analyst inform the market we have considered them in our analysis.

#### Market-based Approach Conclusion

- 7.84 Given the limitations noted above for each of the market-based sources of information, we have not relied upon this information to determine the FMV of the Santa Ana Project but rather have used this data as a reasonableness check on the conclusions reached.

<sup>121</sup> Exchange rates provided by Capital IQ. (FTI-03)

CAD estimates converted to USD based on the prevailing exchange rate on each report date.



- 7.85 The decrease in the EV from the date of the suspension of the ESIA to the Valuation Date may be viewed as a measure of the impact of the alleged breaches on the Claimant. The reduction over this period of approximately \$260.9 million as noted above is also consistent with the order of magnitude of the damages calculated with respect to Santa Ana herein – although, as discussed above, the EV itself may not be reflective of the FMV of the Santa Ana Project at the Valuation Date. As discussed further in **Section 8** below, the total reduction in Bear Creek’s EV would also reflect the impact on the Corani Project.
- 7.86 Furthermore, the values indicated by the analysts prior the Valuation Date ranged from \$108.6 million to \$508.6 million, averaging \$257.8 million. As discussed above, removing the highest and lowest analyst estimates reduces the range of analyst estimates to \$184.8 million to \$352.2 million with an average of \$237.5 million. In our view, these figures are supportive of our conclusion under the income-based approach of approximately \$224.2 million for the Project at the Valuation Date.

## **8. Reduction in Corani Project Value**

### **Introduction**

- 8.1 We have been advised that, absent the alleged breaches, the Claimant would have developed the Santa Ana Project first and used the discretionary cash flow generated therefrom as a source of financing for the development of the much larger Corani Project. We have also been advised that, given the alleged breaches, the timeline for the development of Corani has been delayed and the Claimant will now have to raise more money at a higher cost of capital than it otherwise would have. Also, the Claimant may have difficulty proceeding with Corani at all due to the lack of financing options and the risk profile of Corani has increased in general. Based on the above, the value of Corani has been negatively impacted by the alleged breaches.
- 8.2 We have been asked to quantify the reduction, to date, in the value of Corani as a result of the alleged breaches. The full reduction in the value of Corani has not crystallized. In addition, the Claimant still holds Corani and may be able to sell or develop it in order to mitigate any loss. In the event that a full loss to the Claimant is crystallized by the date of the hearing, we can update our calculations at that time.
- 8.3 Furthermore, in the event that the Claimant receives an award for the damages sustained with respect to the Santa Ana Project, the Claimant may be able to use those funds to mitigate a loss due to incremental financing costs relating to Corani. Although Corani may experience incremental financing costs in the future, the precise terms and amounts of financing absent versus given the alleged breaches are uncertain. Accordingly, we have focused our analysis on the reduction in the value of Corani in the period immediately following the Expropriation Date.

### Reduction in the Value of Corani

- 8.4 We have analysed the impact of the alleged breaches on Corani's value with reference to Bear Creek's EV over the period from May 27, 2011, the last trading day before the first alleged breach occurred, to June 27, 2011, the first trading day after the Expropriation Date.<sup>122</sup>
- 8.5 We have estimated the reduction in the value of Corani as a result of the alleged breaches as follows:
- i) We estimated the value of Corani as of June 27, 2011 absent the alleged breaches as: Bear Creek's EV of as of May 27, 2011 (i.e. the date prior to the first alleged breach) of \$543.5 million, less the estimated value attributable to Santa Ana, adjusted for the 7.3% decline in the S&P/TSX Global Mining Index over the period from May 27, 2011 to June 27, 2011.<sup>123</sup>
- Less:**
- ii) The estimated value of Corani given the alleged breaches as: Bear Creek's EV on June 27, 2011 of \$236.2 million less the estimated value of Santa Ana on that date. We have assumed that the June 27, 2011 Bear Creek's EV reflected no value for the Santa Ana Project as a result of its expropriation, thus the full EV of \$236.2 million is attributable to Corani on this date.
- 8.6 We have assumed that absent the alleged breaches Bear Creek's EV would have experienced returns consistent with the S&P/ TSX Global Mining Index over the period, a 7.3% decline per **Paragraph 7.76**.

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<sup>122</sup> We have valued the reduction immediately after the date Santa Ana was expropriated to remove the potential impact of events in the intervening period from June 27, 2011 to the present.

<sup>123</sup> EV and index values provided by Capital IQ. **(FTI-03)**

We have assumed that the value of other assets, including cash, remained constant between May 27, 2011 and June 27, 2011 as Bear Creek did not produce updated balance sheet information during this period. We have also assumed that the Bear Creek's EV includes an immaterial balance for Bear Creek's other exploration properties, which is consistent with the view taken by the analyst reports that we have reviewed.



- 8.7 The portion of Bear Creek's EV which the market attributed to the Santa Ana Project in the period prior to the alleged breaches is not certain, which is a limitation to this approach. Whereas we have determined the FMV of the Project based on our DCF analysis to be \$224.2 million (which represents approximately 41.2% of Bear Creek's EV on May 27, 2011)<sup>124</sup> various industry analysts indicated around that time their view that the market was not reflecting the full value of the Santa Ana Project in the share price and observed that the stock was trading at a discount to NAV.
- 8.8 According to the analysts, their calculated NAV of Santa Ana ranged from 9.1% to 32.2% (19.2% average) of the combined NAV of the two projects as shown in the figure below:

**Figure 26 Relative Santa Ana NAV per Bear Creek Analysts<sup>125</sup>**

Analyst	Date	Currency	Corani NAV (\$ millions)	Santa Ana NAV (\$ millions)	Combined (\$ millions)	Santa Ana %
BMO	6/1/2011	USD	1,087.70	108.60	\$ 1,196.3	9.1%
Raymond James	6/2/2011	CAD	1,328.37	196.76	\$ 1,525.1	12.7%
Paradigm	6/8/2011	USD	1,073.00	508.60	\$ 1,581.6	32.2%
Canaccord	6/7/2011	USD	1,212.30	352.20	\$ 1,564.5	22.5%
Scotia	5/31/2011	CAD	1,181.87	184.76	\$ 1,366.6	13.1%
Haywood	3/17/2011	CAD	867.58	220.69	\$ 1,088.3	20.0%
Cormark	1/20/2011	USD	717.00	233.00	\$ 950.0	24.5%
<b>Average</b>			<b>\$ 1,066.8</b>	<b>\$ 257.8</b>		<b>19.2%</b>

- 8.9 The analysts also projected that Corani's NAV was approximately \$1.1 billion, approximately double Bear Creek's EV at May 27, 2011. As discussed in **Appendix 8**, shortly after the ESIA Suspension was announced, some analysts (i.e. Raymond James, Canaccord, and Scotia Capital) noted that Bear Creek's share price did not appear to include Santa Ana's implied NAV. If this was the case, Bear Creek's EV at May 27, 2011 represented the market's valuation of Corani at that date, and the full reduction of \$267.3 million represented the reduction in the value of Corani subsequent to the alleged breaches.

<sup>124</sup> \$224.2 million / \$543.5 million = 41.2%

<sup>125</sup> Per the analyst reports discussed in **Appendix 8**.

## Corani Reduction in Value - Conclusion

8.10 Our calculations with respect to the reduction in Corani's value as described above are presented in the following table:

**Figure 27 Corani Reduction in Value Summary<sup>126</sup>**

Description	Calculation	Santa Ana Allocation		
		FMV	19.2% of EV	0.0% of EV
May 27, 2011 BCM EV	[A]	\$ 543.5	\$ 543.5	\$ 543.5
Less: Santa Ana value	[B]	\$ (224.2)	\$ (104.3)	\$ -
May 27, 2011 Corani value	[C] = [A] - [B]	\$ 319.3	\$ 439.1	\$ 543.5
Less: Index decline @ 7.3%	[D] = [C] * [1 - 7.3%]	\$ (23.4)	\$ (32.2)	\$ (39.9)
June 27, 2011 Corani value	[E] = [C] - [D]	\$ 295.9	\$ 406.9	\$ 503.6
Less: June 27, 2011 BCM EV	[F]	\$ (236.2)	\$ (236.2)	\$ (236.2)
<b>Reduction in Corani value</b>	<b>[E] - [F]</b>	<b>\$ 59.6</b>	<b>\$ 170.6</b>	<b>\$ 267.3</b>

8.11 We have calculated the reduction in value of Corani immediately after the Expropriation Date to be in a range of \$59.6 million (deducting the full FMV of the Santa Ana Project) to \$170.6 million (deducting 19.2%, the average of the proportionate NAV of Santa Ana relative to the NAV of Corani per the analyst's at the time). In the event that the market was not placing value on Santa Ana in the period leading up to the Expropriation Date, the full reduction of \$267.3 million over this period would be attributable to the impacts of the alleged breaches on Corani.

8.12 We have selected the reduction in Corani's value of \$170.6 million based noted above as our point estimate of the reduction in the value of Corani as a result of the alleged breaches since, in our view, the market would have placed a value on Santa Ana but would not have attributed the full FMV calculated herein at that time.

<sup>126</sup> We have deducted Bear Creek's actual EV as of June 27, 2011 from our projected Corani value absent the breaches to determine the reduction in value suffered.

## **9. Pre-Award Interest**

### **Introduction**

- 9.1 Pre-award interest represents the amount associated with the deprivation of the use of the funds, equivalent to value of damages, lost by the Claimant from the date the damages were incurred to the date of an award of damages. In order to compensate the Claimant, interest is calculated by applying an appropriate rate of return from the Valuation Date to the estimated award issuance date (i.e. March 15, 2017).
- 9.2 The two principal issues in the calculation of interest include the rate of interest applicable to the damages and whether the interest is calculated on a compound or simple basis.

### **Interest Rate**

- 9.3 We have been instructed by Counsel that the applicable legal interest rate for judgements in Peru is determined based on a reference rate published by the Central Reserve Bank of Peru. On June 23, 2011, the legal interest rate was 5.0%.<sup>127</sup>
- 9.4 Based on the above, we have calculated pre-award interest at a rate of 5.0%.

### **Compound versus Simple Interest**

- 9.5 Interest can be calculated on a simple basis (interest is calculated on principal only) or a compound basis (interest is calculated on both principal and interest from previous periods). All other inputs being equal, compound interest calculations will exceed simple interest calculations and the magnitude of the difference is a function of the holding term and the frequency of compounding.

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<sup>127</sup> Central Reserve Bank of Peru, "Summary of Monetary and Exchange Operations", June 25, 2011, page 1 (FTI-31)

- 9.6 Considering the compensatory function of pre-award interest, in our view, compounding is the most appropriate method for the purposes of this calculation as almost all modern forms of commercial financing involve compound interest and the alleged actions and omissions of the Respondent caused the Claimant to forego investment opportunities that would have included compounding effects. Simple interest would fail to compensate the Claimant.

## Conclusion

- 9.7 We have calculated pre-award interest on a compound basis in the tables below:

**Figure 28 Pre-Award Interest for Santa Ana**

Beginning of Period	End of Period	Opening Balance	Damages	Interest	Closing Balance
6/23/2011	6/23/2012	\$ -	\$ 224.2	\$ 11.2	\$ 235.4
6/23/2012	6/23/2013	\$ 235.4	\$ -	\$ 11.8	\$ 247.2
6/23/2013	6/23/2014	\$ 247.2	\$ -	\$ 12.4	\$ 259.5
6/23/2014	6/23/2015	\$ 259.5	\$ -	\$ 13.0	\$ 272.5
6/23/2015	6/23/2016	\$ 272.5	\$ -	\$ 13.7	\$ 286.2
6/23/2016	3/15/2017	\$ 286.2	\$ -	\$ 10.4	\$ 296.6
<b>Total</b>			<b>\$ 224.2</b>	<b>\$ 72.4</b>	<b>\$ 296.6</b>

**Figure 29 Pre-Award Interest related to Corani Reduction in Value**

Beginning of Period	End of Period	Opening Balance	Damages	Interest	Closing Balance
6/27/2011	6/27/2012	\$ -	\$ 170.6	\$ 8.6	\$ 179.2
6/27/2012	6/27/2013	\$ 179.2	\$ -	\$ 9.0	\$ 188.1
6/27/2013	6/27/2014	\$ 188.1	\$ -	\$ 9.4	\$ 197.6
6/27/2014	6/27/2015	\$ 197.6	\$ -	\$ 9.9	\$ 207.4
6/27/2015	6/27/2016	\$ 207.4	\$ -	\$ 10.4	\$ 217.8
6/27/2016	3/15/2017	\$ 217.8	\$ -	\$ 7.8	\$ 225.6
<b>Total</b>			<b>\$ 170.6</b>	<b>\$ 55.0</b>	<b>\$ 225.6</b>

## 10. Conclusion

10.1 Based on the scope of our review as well as the procedures, analyses, assumptions, and restrictions noted herein, we have calculated the damages to the Claimant as follows:

**Figure 30 Summary of Calculations**

Description (\$ millions)	Compensation
Santa Ana Project - Damages	\$ 224.2
Pre-Award Interest	\$ 72.4
<b>Santa Ana Damages</b>	<b>\$ 296.6</b>
Corani Project - Reduction in Value	\$ 170.6
Pre-Award Interest	\$ 55.0
<b>Corani Reduction in Value</b>	<b>\$ 225.6</b>
<b>Total</b>	<b>\$ 522.2</b>



## **11. Assumptions**

- 11.1 The conclusions noted herein are based on the following key assumptions which we view to be reasonable and appropriate:
- i) The Claimant is entitled to an award of damages;
  - ii) The financial information provided by the Claimant is reliable for the purposes of our damages analysis;
  - iii) The financial models provided by RPA are reliable for the purposes of our DCF valuation analysis of the Project;
  - iv) The reduction in the value of Corani as measured by the change in Bear Creek's EV in the period immediately after the Expropriation Date represents a permanent decline in the value of Corani to a current date; and,
  - v) Other assumptions as they relate to specific calculations are provided in **Section 6** to **Section 9** above.

## **12. Expert Declaration**

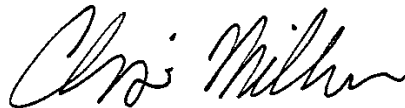
- 12.1 We confirm that we understand our overriding duty is to the Tribunal and that we must assist the Tribunal on matters within our expertise. We believe that we have complied with this duty.
- 12.2 The assumptions upon which our calculations are based are not, in our opinion, unreasonable or unlikely assumptions.
- 12.3 We have no present or past relationship with any of the Parties.
- 12.4 We have been retained by Counsel on previous occasions.
- 12.5 We confirm that insofar as the facts stated in our report are within our own knowledge we have made clear which they are and we believe them to be true, and that the opinions we have expressed represent our true and complete professional opinion.



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Howard N. Rosen

May 29, 2015



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Chris Milburn

May 29, 2015



## **Appendix 1 Curriculum Vitae of Howard N. Rosen**

Howard Rosen is a senior managing director at FTI Consulting and has been involved exclusively in business valuations, damages quantification, and corporate finance related matters since 1981. He has acted as an advisor to private and public companies, regulatory bodies, and all levels of government on a wide variety of industries. His work experience covers assignments across North and South America, Europe, the Middle East, Africa, and Asia. Howard has provided oral expert testimony in over 200 damages quantification and valuation matters in courts in Canada and the United States and also in International Arbitration hearings in North and South America, Asia, Africa, Europe and the Middle East.

Howard has acted as court appointed administrator, monitor and inspector and sat as a member of an Arbitral Tribunal and sole Arbitrator. He is the co-author of two texts on the quantification of economic damages and has lectured extensively to professional interest groups. Howard has acted as instructor at the NITA and FIAA Expert Witness Trial Practice Programs, the MIDS Program in Geneva, and as an MBA instructor at the Schulich School of Business in Toronto. Howard has been listed as one of the top valuation and damages experts in Canada by Lexpert, and Internationally by Who's Who Legal as one of the top experts in International Commercial Arbitration.

Howard has also acted as advisor on transactions in a wide variety of businesses, for both public and private equity investors, conducting strategic due diligence, valuations and deal structuring for both buyers and sellers. Howard has advised independent committees of boards of directors on non-arm's length transactions, and has also acted as the chair of independent committees of boards of directors for non-arm's length transactions.

Howard is also currently a member of the International Valuation Standards Council (IVSC) Working Group for the IVSC Extractive Industries Project which is concerned with the development of international standards for the mining and other extractive industries.

Howard currently sits on the board of directors and audit committee of one public company (Agriculture), and on the advisory committee of one institutional investor. Howard's past board positions have included a Junior resource company (Gas and Mining), a Medical Software and devices company where he served as Chair of the Audit Committee, as well as a specialty manufacturer.

Howard leads the global international arbitration practice and is the head of economic and financial consulting in North America and Asia for FTI Consulting.





## **EDUCATION**

Certified Fraud Examiner, 1992  
Accredited Senior Appraiser, 1988  
Chartered Business Valuator, 1984  
Chartered Accountant, 1981  
Bachelor of Business Administration, 1979

## **PRESENT POSITION**

FTI Consulting, Senior Managing Director,  
Practice Leader - International Arbitration, 2009

## **OTHER POSITIONS HELD**

LECG, Managing Director, 2004 - 2009  
Low Rosen Taylor Soriano, Principal, 1998-2004  
Arthur Andersen & Company, Partner, 1992-1998  
Berenblut & Rosen, Partner, 1982-1992  
Coopers & Lybrand 1979-1981

## **MEMBERSHIPS/AFFILIATIONS**

Swiss Arbitration Association  
Arbitrators Institute of Canada  
Canadian Institute of Chartered Accountants  
Canadian Institute of Chartered Business Valuators  
Institute of Chartered Accountants of Ontario  
National Association of Certified Fraud Examiners  
London Court of International Arbitration



### **International Mining Cases Worked on by Howard Rosen**

Howard has extensive experience in providing damages analysis and valuation in the mining industry. Below is a summary of recent and ongoing cases personally worked on by Howard Rosen:

#### ***Silver – South America***

ICSID case related to the alleged expropriation of mineral exploration properties in South America (2014). Retained by Counsel to the Claimants. Export report prepared.

#### ***Silver and Zinc and Lead – South America***

ICC case related to a dispute between a mine owner and a contract miner. Retained by Counsel to the Respondents. Expert Reports prepared. Arbitration hearing scheduled for December 2012.

#### ***Gold – South America***

International Centre for Settlement of Investment Disputes (ICSID) case related to the alleged expropriation of a gold and copper mining operation in South America (2009). Expert report on valuation and damages issues has been prepared. Case is ongoing.

#### ***Gold – South America***

ICSID case regarding the alleged Nationalization of operating gold mine in South America (2011). Retained by Claimant. Initial report prepared. Confidential, in progress.

#### ***Gold – South America***

ICSID case regarding the alleged Nationalization of exploration gold property in South America (2011). Retained by Claimant. Initial report prepared. Confidential, in progress.

#### ***Gold – South America***

ICSID case regarding the alleged Nationalization of exploration gold property in South America (2011). Retained by Claimant. Initial report prepared. Confidential, in progress.

#### ***Gold – Eastern Europe***

ICSID case related to the alleged expropriation of a gold mining operation by the government (2010). Prepared an expert report on valuation and damages issues. Case is ongoing.

#### ***Gold – Global***

US and Canadian litigation related to allegations of market manipulation of gold prices by a gold producer (2008). Prepared an expert report on the assessment of damages to a seller of gold bars. Case settled.

#### ***Gold – Eastern Europe***

ICSID case related to the alleged expropriation of a gold mining operation in Eastern Europe. Retained by Counsel to the Claimants (2009). Case settled.



***Copper and Gold – Mongolia***

Commercial arbitration dispute between two investors with respect to a large copper and gold mining project in Asia. Retained by Counsel to the Defendants (2011). Prepared an expert report on damages.

***Iron Ore – West Africa***

ICC case related to a dispute between an African multinational mining company and an agency of the government over an iron ore deposit mine. Prepared an expert report on damages and reply reports. Hearing was in Paris in September, 2009. Decision was confidential.

***Nickel – West Africa***

ICSID case related to a dispute related to the alleged expropriation of a nickel mining operation by the government (2010). Retained by Counsel to Claimants. Expert and reply reports prepared. Case settled.

***Dimension Stone – Africa***

ICSID case related to a change in government policy and the alleged effect on the value of a dimension stone mining operation. Retained by Counsel to the Respondents (2008). Prepared an expert report on valuation and damages. Case settled after production of our report.

***Copper – South America***

UNCITRAL case related to the alleged expropriation of a copper mining operation in South America. Retained by Counsel to the Claimants (2012). Case is in initial stages, and is confidential at this point.

***Copper and Cobalt – Africa***

ICC and ICSID cases related to alleged illegal acts by the government and their agencies related to the operation of copper and cobalt mining operations in Africa (2011). Retained by Counsel to the Respondent. Expert and reply report filed. Case settled.

***Uranium – Asia***

ICSID case related to the alleged expropriation of a Uranium mining operation in Asia (2011). Retained by Counsel to the Claimants. Initial report filed 2011. Parties are confidential at this stage.

***Uranium – Kazakhstan***

ICSID case regarding the alleged expropriation of Uranium mine in Eastern Europe (2011). Retained by Claimant. Confidential, in progress.

***Gold and Copper – Central America***

ICSID case related to the alleged expropriation of mineral exploration properties in Central America (2012). Retained by Counsel to the Claimants. Initial work just beginning.



***Zinc – South America***

ICSID case related to the alleged expropriation of mining property, smelter, exploration properties, and tailings pile in South America (2012). Retained by Counsel to the Claimants. Initial work underway.

***Zinc – South America***

ICSID case related to the alleged expropriation of mining property, smelter, exploration properties, and tailings pile in South America (2012). Retained by Counsel to the Claimants. Initial work underway.

***Zinc Ferrite Residue / Early Stage Exploration Properties – South America***

Performed an independent valuation of Zinc Ferrite Residue that was generated in the zinc concentrate roasting step at the client's existing smelting facility in Peru. The valuation was for internal management advisory purposes. Performed an independent valuation (Estimate Report) of various early stage mineral exploration properties in Peru.

## Appendix 2 Curriculum Vitae of Chris Milburn

**Chris Milburn** has provided expert damage quantification and business valuation consulting services since 1997. He has acted as an advisor to private and public companies, regulatory bodies and governments across a wide range of industries. Chris' work experience covers matters in Canada, the United States, Europe, Asia, South America, and Africa. His areas of specialty include quantifying economic damages for international arbitrations, business valuations, commercial litigation, and insurance litigation.

Chris has qualified as an expert witness and has provided testimony relating to the quantification of economic damages. In 2013 and 2014 Chris was recognized as a leading expert in the field of damages and valuation in the International Who's Who of Arbitration Expert Witnesses by Who's Who Legal.

### **Representative cases include:**

#### ***Recent Mining Experience***

- Quantification of damages in a bilateral investment treaty dispute under the International Centre for Settlement of Investment Disputes (ICSID) related to a thermal coal project in Asia. Prepared expert report on economic damages. Matter is ongoing;
- Quantification of damages in a treaty case under UNCITRAL rules related to a copper, silver, molybdenum project in South America. Prepared expert report quantifying damages to the claimant and provided testimony at the hearing. Matter is ongoing;
- Quantification of damages in a treaty arbitration relating to the alleged expropriation of a metallurgical processing facility in South America. Matter is ongoing;
- Quantification of damages in a matter before the Ontario Mining Commissioner relating to gold mineral concessions in Northern Ontario. Matter is ongoing;
- Assessment of damages claims in an ICC arbitration related to the contract mining costs of a zinc, lead and silver mine in South America. Led project team in the analysis of costing documents and comparable industry metrics with respect to open-pit mining costs. Prepared expert report and reply reports and attended hearing. Decision pending;
- Quantification of damages in a treaty case related to a silver project in South America. Prepared expert report. Matter ongoing;
- Quantification of damages related to an iron ore mining project in Western Africa: Managed multi-discipline project team including iron ore economists, corporate finance experts, mining engineers, and geologists and prepared expert report on economic damages sustained by the

claimant in an investor-state dispute under the ICC. Matter included detailed review of incremental costs incurred by mine operator. Matter resolved;

- Quantification of damages in a commercial dispute involving a large copper and gold deposit in Asia: Managed project team and prepared expert report calculating damages to the claimant under the British Columbia International Commercial Arbitration Act. Matter resolved;
- Quantification of damages related to a copper/cobalt mining project in Africa: Managed project team in the preparation of a critique report of the claimant's expert report in an investor-state dispute under the International Chamber of Commerce (ICC). Matter is ongoing;
- Valuation of gold mineral assets in South America at production/exploration stages prior to nationalization. Matter is ongoing;
- Valuation of gold mineral properties for two exploration and development companies with interests in South America prior to nationalization. Matter is ongoing;
- Valuation of a gold mineral property in Eastern Europe. Matter is ongoing;
- Consulting project analyzing the level of "government take" applicable to a potash and phosphate rock mining company in the Middle East relative to competitive companies and comparable countries in connection with a government review of mining tax policies;

#### ***Other Industry Experience***

- Quantum of damages in construction dispute relating to the construction of a luxury hotel regarding the reasonability of costs incurred by contractors. Matter resolved;
- Quantum of damages in construction dispute in food processing industry relating to reasonability of costs incurred by contractors and losses sustained by business owner due to sub-standard work by contractor. Matter resolved;
- Quantum of economic damages sustained by electricity generation companies in Eastern Europe: Prepared joint expert report with regulatory economists contributing opinion of lost profits to the claimant resulting from various actions of government regulatory agencies in a case with the International Centre for Settlement of Investment Disputes (ICSID). Work included a detailed review of incremental costs incurred by claimant. Matter is ongoing;
- Quantum of economic damages sustained by an insurance company's investments in a South American country: Prepared damages analysis and expert report as to economic damages sustained by the claimant following measures taken by the government during and subsequent to a national economic crisis in an investor-state dispute under ICSID. Matter resolved;
- Quantifying economic damages related to a textile company in Northern Africa: Prepared expert report quantifying damages sustained by the claimant following actions of governmental



agencies that resulted in the expropriation of various business interests in the country in an investor-state case with ICSID. Matter resolved;

- Quantifying economic damages related to the remediation of hazardous wastes in the United States. Prepared expert report quantifying the economic damages sustained by a US claimant against the Canadian government under the NAFTA. Matter resolved;
- Valuation of a business that provides human resource services to power generation projects in the Middle East;
- Valuation of a hotel and casino located in Western Asia;
- Valuation of the intangible assets related to a Canadian pharmaceutical company;
- Valuation of a financial transaction processing business located in Canada and the United States;
- Valuation of a Canadian network management software business;
- Valuation of a Canadian reinforcing steel company;
- Valuation of a Canadian asset management company; and,
- Valuation of an international optical media replication company based in Canada.

#### **Education/Professional Designations**

Chartered Business Valuator (CBV) – 2004

Chartered Professional Accountant (CPA)/Certified Management Accountant (CMA) – 2000

B.A. (Economics) at the University of Western Ontario – 1992

#### **Positions Held**

Managing Director, FTI Consulting Canada ULC – April 2009 to Present

Senior Managing Consultant, LECG Canada Ltd. – April 2007 to March 2009

Senior Consultant, LECG Canada Ltd. – March 2004 to March 2007

Senior Consultant, Low Rosen Taylor Soriano – May 2001 to April 2004

Consultant, Low Rosen Taylor Soriano – April 1998 to April 2001

Consultant, Arthur Anderson – April 1997 to March 1998



### **Memberships**

Canadian Institute of Chartered Business Valuators

Certified Management Accountants of Ontario

Toronto Commercial Arbitration Society

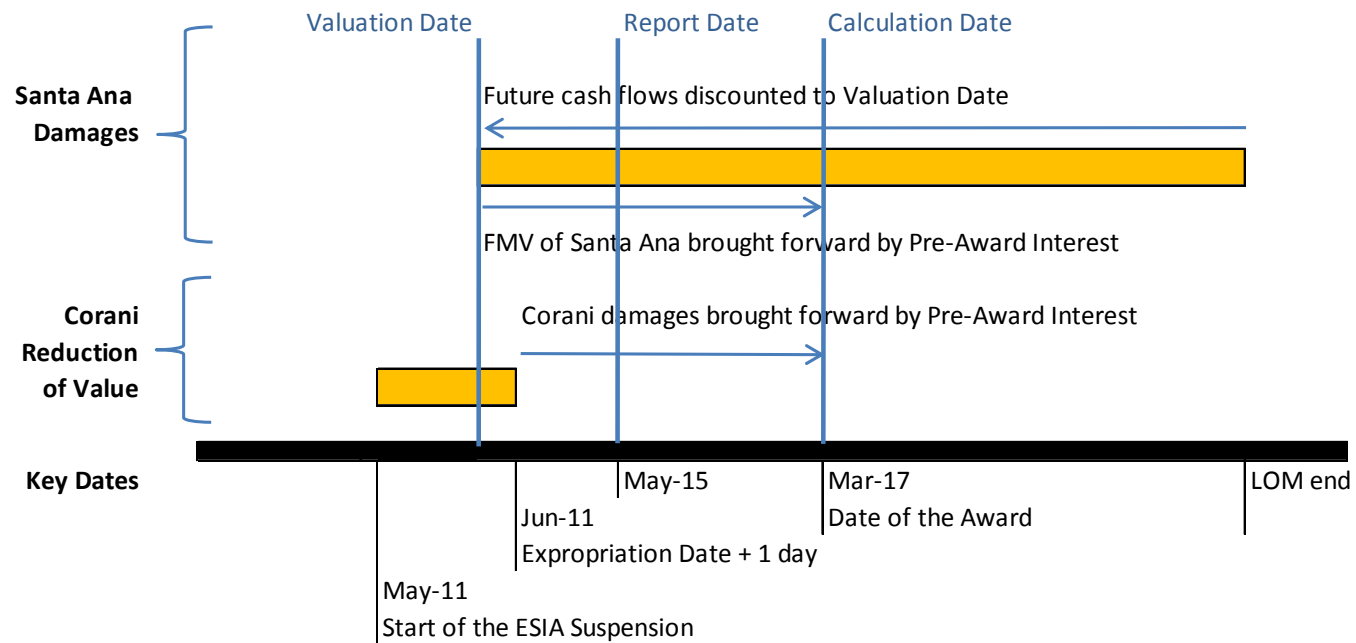
Young Canadian Arbitration Practitioners

### **Other**

- Speaker at PDAC Conference in March 2015, “Economic Damage and Technical Issues Faced in Mining Disputes” and “Evidentiary Issues in Presenting a Mining Claim”;
- Speaker at PDAC Conference in March 2014, “Assessing Risks in New Mining Ventures” and “Use of Technical Reports to Assess Value”;
- Speaker at CPA Conference on Financial Reporting Conference for the Mining Industry, “Disclosure of Financial and Economic Information under National Instrument 43-101”, December 2013;
- “The Valuation of Mineral Properties in Arbitration Disputes”, Arbitration Place Quarterly Newsletter, Summer 2013;
- Co-author, “Valuation of “Start-Up Oil and Gas and Mining Projects”. Global Arbitration Review, the Arbitration Review of the Americas 2011;
- Developed the course materials for and acted as an expert witness in mock hearings for the FIAA Expert Witness Trial Practice Programs held in Lausanne Switzerland in 2008-2009 and Paris 2011;
- Involved as a speaker and faculty member in various advocacy training programs in Canada; and,
- Author of educational materials for the Canadian Institute of Chartered Business Valuators.



### Appendix 3 Damages Approaches Summary





## **Appendix 4 Scope of Review**

A4.1 We have relied upon the following documents in the course of our review;

### ***Provided by Claimant***

- 1) Request for Arbitration dated August 11, 2014.
- 2) Claimant's Memorial on Merits dated May 29, 2015.
- 3) RPA Report dated May 29, 2015.
- 4) Witness statement of Andrew Swarthout dated May 28, 2015.

### ***Publicly Sourced***

- 1) CICBV, "CICBV Standards".
- 2) BCM, "Annual Information Form", Mar.29, 2011.
- 3) Data provided by Capital IQ.
- 4) CIMVAL, "Standards and Guidelines", Feb. 2003.
- 5) CIM, "Definition Standards for Mineral Resources and Mineral Reserves", May 10, 2014.
- 6) Updated Feasibility Study of Santa Ana, Apr. 1, 2011.
- 7) BCM, Press Release, Nov. 9, 2011.
- 8) Corani Feasibility Study, December 2011.
- 9) Silver Institute, "World Silver Survey 2013 – A Summary", Apr. 2013.
- 10) USGS, "2010 Minerals Yearbook – Silver", Feb. 2012.
- 11) The CPM Silver Yearbook 2011, May 2011.
- 12) Silver Institute, "World Silver Survey 2011 – A Summary", Apr.2011.
- 13) Silver Institute, "World Silver Survey 2014", May 2014.
- 14) Silver Institute, "World Silver Survey 2012 – A Summary", Apr. 2012.
- 15) Silver spot prices provided by SNL.

- 16) Silver and Gold futures prices provided by Bloomberg.
- 17) Gold spot prices provided by SNL.
- 18) USGS, “Mineral Commodity Summaries”, Jan. 2011.
- 19) Observatory of Economic Complexity, “Products exported by Peru (2010)”.
- 20) Factory at Chorzow (Germ v. Pol), 1928 P.C.I.J (ser A), No 17 (Sept 13), paragraph 125.
- 21) “Canada-Peru Free Trade Agreement”, August 2009, Article 812.
- 22) CICBV, “Practice Bulletin No. 2 – International Glossary of Business Valuation Terms”, 2001.
- 23) Howard E. Johnson, “Business Valuation”, 2012, page 34.
- 24) PWC, “Gold, silver and copper price report 2014”, Dec. 2013.
- 25) PWC, “Gold, silver and copper price report 2015”, Nov. 2014.
- 26) Federal Reserve Bank of Philadelphia, “Survey of Professional Forecasters: Second Quarter 2011”, May 13, 2011.
- 27) Gold Reserve Inc. v. Bolivarian Republic of Venezuela, ICSID Case No. ARB(AF)/09/1, paragraph 837.
- 28) Bear Creek Mining, “Presentation to Denver Gold Group – European Gold Forum”, Apr. 12-15, 2011.
- 29) TD Bank, Commodity Price Research Estimates, Jun. 25, 2011.
- 30) Aswath Damodaran, “Price and Value: Discerning the Difference”, May 2014.
- 31) Central Reserve Bank of Peru, “Summary of Monetary and Exchange Operations”, June 25, 2011.
- 32) United States Department of the Treasury, “Daily Treasury Yield Curve Rates”, 2011.
- 33) Morningstar, “2011 Valuation Yearbook”, 2011.
- 34) Aswath Damodaran, “Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – 2013 Edition”, Mar. 2013.
- 35) Aswath Damodaran, “Implied Equity Risk Premiums – United States”, Jan. 5, 2015.
- 36) Morningstar, “2011 Cost of Capital Yearbook”, 2011.

- 37) Enerteck Corporation, “Form 10-Q”, May 15, 2011.
- 38) Eternal Energy Corporation, “Form 8-K”, Dec. 14, 2011.
- 39) Nitro Petroleum, Inc., “Form 10-K 2011”.
- 40) Aswath Damodaran, “betas10”.
- 41) Aswath Damodaran, “betas11”.
- 42) Aswath Damodaran, “betaemerg11”.
- 43) Aswath Damodaran, “betaGlobal11”.
- 44) World Bank, “Doing Business 2011 - Peru”, 2011.
- 45) Morningstar, “International Cost of Capital Report 2011”.
- 46) Aswath Damodaran, “CRPs 2011-01 - ctryprem10.xls”, tab “Country premiums”.
- 47) Peru Ministry of Economics and Finance, “Daily Report”, June 23, 2011.
- 48) Wall Street Journal, “Cost to Insure U.S. Government Debt Soars”, Sep.26, 2013.
- 49) Credit default swap rates as provided by Capital IQ.
- 50) Damodaran, “The Small Cap Premium: Where is the beef?”, April 11, 2015.
- 51) BCM, “BCM Audited Financial Statements”, 2011.
- 52) Central Reserve Bank of Peru, “2011 Annual Report”, 2011.
- 53) BMO, “June 1, 2011 Report”.
- 54) Raymond James, “June 2, 2011 Report”.
- 55) Paradigm, “June 8, 2011 Report”.
- 56) Canaccord, “June 7, 2011 Report”.
- 57) Scotia, “May 31, 2011 Report”.
- 58) Haywood, “March 17, 2011 Report”.
- 59) Cormark, “January 20, 2011 Report”.
- 60) PWC, “Doing Deals in Peru 2011”.

## Appendix 5 Weighted Average Cost of Capital

- A5.1 To calculate the value of a future stream of cash flows to a specific date (i.e. the Valuation Date), these must be discounted by an annual rate of return reflecting the risk associated with receiving those cash flows in the amounts and within the time expected.
- A5.2 Using the approach described below, we have independently derived the appropriate risk-adjusted discount rate, based on first principles to apply to the forecasted future after-tax cash flows from the Project.
- A5.3 The discount rate we estimate is the weighted cost of capital of the different sources of capital through which a business is funded, i.e. the WACC. Specifically, the cost of capital is the expected return on equivalent alternative investments – those investments with similar relevant risks - in the capital markets.
- A5.4 In this appendix we discuss the inputs that we have used to estimate the WACC of the Santa Ana project at the Valuation Date. The approach that we have used to calculate the WACC is based on the CAPM approach.

### Risk-Free Rate

- A5.5 The risk-free rate is the baseline rate of return for an asset that can be considered essentially “riskless”. Yield rates on government bonds of countries with mature, stable economies for which default risk is minimal are typically used as a proxy for a risk-free investment. This long-term interest rate is a pre-tax rate of return.
- A5.6 We determined the appropriate risk-free rate to be 3.8% based on the yield on 20-year US treasury bonds as at the Valuation Date.<sup>128</sup> We determined bonds with a 20-year life to be the most appropriate match for the 24 year LOM of the Extend Life Case.<sup>129</sup>

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<sup>128</sup> United States Department of the Treasury, “Daily Treasury Yield Curve Rates”, 2011, page 3 (FTI-32)

<sup>129</sup> RPA Report, page 15-1

### Equity Risk Premium

- A5.7 The CAPM calculation includes a measure of the rate of return on an equity investment required by well-diversified investors over and above the risk-free rate described above, i.e. the equity risk premium (“**ERP**”). By adding the ERP to a pre-tax rate of return, the return is effectively converted into an after-tax rate of return.
- A5.8 The three generally accepted methods used to estimate ERP are:
- i) Analysis of historical returns;
  - ii) Prospective estimate based on current returns; and,
  - iii) Survey of investors.
- A5.9 The third of these methods, a survey of investors, is inherently subjective and as such we do not rely upon this method.
- A5.10 A useful source of historical returns are the ERP estimates published by Morningstar Inc. (“**Morningstar**”) which calculates the differential between the S&P 500 Index’s total returns and long term government bond yields from 1926 to present.<sup>130</sup> Morningstar calculates these rates on an arithmetic basis, a practice cited by Professor Aswath Damodaran of New York University’s Stern School of Business as being effective in cases where the “...objective was to estimate the risk premium for the next year”.<sup>131</sup> However, to determine appropriate discount rates into the future, as we are doing here, Professor Damodaran suggests the use of geometrically calculated rates due to arithmetic averaging’s tendency to overstate premiums for a long term forecast period. Morningstar also provides custom reports calculating geometric ERP’s over time.
- A5.11 We agree with Professor Damodaran’s point of view and calculate historical ERP’s on the basis of geometric growth.

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<sup>130</sup> Morningstar, “2011 Valuation Yearbook”, 2011, page 122 - 127 (**FTI-33**)

<sup>131</sup> Aswath Damodaran, “Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – 2013 Edition”, March 2013, page 26 (**FTI-34**)

- A5.12 An important consideration when examining historical ERP is consideration of the appropriate historical period. While the Morningstar report includes data from 1926 to a current date, the significant evolution of capital markets over time could be considered to have reduced the relevance of much earlier periods.<sup>132</sup>
- A5.13 Typically, we look to match our retrospective period of review to the period of forecasted cash flows (i.e. 24 years given the LOM of the Santa Ana project).
- A5.14 However, Professor Damodaran notes that, “[h]istorical risk premiums are very poor predictors of both short-term movements in implied premiums or long term returns on stocks”.<sup>133</sup> As such, projected ERP based on current market conditions and analyst price forecasts can be used as an alternative. Some valuation practitioners favor this approach due to its forward-looking nature which matches the timeframe for the application of the discount rate.
- A5.15 Professor Damodaran is a proponent of this prospective approach, stating, “[i]f predictive power is critical or if market neutrality is a pre-requisite, the current implied equity risk premium is the best choice.”<sup>134</sup> Testing the predictive power of an implied premium versus a historical premium, he noted that current implied premiums had a correlation with actual risk premiums over the following 10 years of 0.425, compared to a negative correlation of - 0.480 for historical premiums.<sup>135</sup>

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<sup>132</sup> Among other factors, globalization has increased the flow of information and capital around the world, breaking previously self-contained geographic hubs and enabling investors the ability to diversify their holdings to a much greater extent than in the earlier part of the twentieth century.

<sup>133</sup> Aswath Damodaran, “Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – 2013 Edition”, March 2013, page 100 (**FTI-34**)

<sup>134</sup> Aswath Damodaran, “Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – 2013 Edition”, March 2013, page 100 (**FTI-34**)

<sup>135</sup> Aswath Damodaran, “Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – 2013 Edition”, March 2013, page 99 (**FTI-34**)

- A5.16 To calculate implied ERP's, Professor Damodaran considers the relationship between closing S&P 500 data, estimated long term growth rates, and forecast S&P 500 cash flows related to expected dividend issuances and buybacks.<sup>136</sup> The implied ERP as at December 31, 2010, Professor Damodaran's nearest estimate to the Valuation Date, was 5.2%.<sup>137</sup>
- A5.17 In our view, a prospective estimate of ERP is more appropriate because historical returns included in retrospective ERP's do not reflect market expectations as at the Valuation Date (for example the mining industry before and after the global financial crisis). Moreover, as this estimate's prospective nature is consistent with our forward looking income-based approach, we estimated the appropriate ERP at the Valuation Date to be 5.2%.

### Industry Beta

- A5.18 Beta is an estimate of the volatility of an investment compared to the market as a whole. Beta is calculated through regression analysis of a particular security's historical returns against a particular market's (i.e. a blue chip stock's returns versus the S&P 500's). This regression analysis returns a beta value that indicates the tendency of a security's returns to move relative to the subject market. A beta of 1.0 would indicate that a security moves perfectly with the market, while a beta of 2.0 means that the security is twice as volatile as the market. As a measure of volatility, the beta coefficient is often used as a measurement of a security's riskiness.
- A5.19 Beta is used in the CAPM to add an investment-specific dimension to the selected ERP. In this case, we use an industry beta to account for the risk that a silver project, such as Santa Ana, would have relative to the market at large. Silver companies, such as the Claimant through their interest in the Project, belong to the Standard Industrial Classification ("SIC") code 10.<sup>138</sup> Subdivisions exist within the SIC system that allow for more specific classifications of companies. For example, while SIC 10 contains metal mining companies in general, SIC 104 contains gold and silver mining companies. Therefore, a silver project can be said to belong within SIC 104.

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<sup>136</sup> Aswath Damodaran, "Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – 2013 Edition", March 2013, page 67 – 88 (FTI-34)

<sup>137</sup> Aswath Damodaran, "Implied Equity Risk Premiums – United States", January 5, 2015, page 1 (FTI-35)

<sup>138</sup> Morningstar, "2011 Cost of Capital Yearbook", 2011, SIC 10 (FTI-36)



- A5.20 Morningstar has created SIC 10 and SIC 104 composites comprising 23 and 10 companies, respectively, and has published regular financial statistics about those companies.<sup>139</sup> The median unlevered beta for the SIC 10 and SIC 104 composites were 1.39 and 1.40, respectively, as at March 31, 2011. Our confidence in these figures is undermined by the inclusion of three non-mining companies in the SIC 10 composite and two of these in SIC 104.<sup>140</sup>
- A5.21 Professor Damodaran calculates unlevered betas for a number of industries in January of each year. In January 2011, he calculated an unlevered beta corrected for cash for his composite of 73 U.S. precious metals companies of 1.16.<sup>141</sup> As at January 2012, Professor Damodaran also calculated values for other geographies to estimate unlevered betas corrected for cash for U.S., emerging market and global precious metal companies to be 1.14, 1.07 and 1.54, respectively.<sup>142</sup> Although these calculations post-date the Valuation Date, the result suggests that an emerging market beta would be broadly in line with a US beta for a precious metal company (i.e. 1.16).
- A5.22 Based on the limitations discussed above with respect to Morningstar's SIC 104 data, we have selected an unlevered beta of 1.16 based on the data provided by Professor Damodaran.
- A5.23 In order to account for the intended or optimal capital structure of the investment (i.e. the Project), unlevered betas are levered with the following formula:

**Figure 31 Levered Beta Formula**

$$\text{Levered Beta} = \text{Unlevered Beta} * (1 + (1 - \text{Tax Rate}) * \text{Debt/ Equity Ratio})$$

<sup>139</sup> Morningstar, "2011 Cost of Capital Yearbook", 2011, SIC 10 and SIC 104 (FTI-36)

<sup>140</sup> Enerteck Corporation and Eternal Energy Corporation are included in both SIC 10 and SIC 104. SIC 10 also includes Nitro Petroleum, Inc. Enerteck Corporation was formerly known as Gold Bond Resources, Inc. but acquired EnerTeck Chemical Corporation in 2003 through which it manufactures, markets and sells fuel borne catalytic engine treatment products. Enerteck Corporation, "Form 10-Q", May 15, 2011 (FTI-37). Eternal Energy Corporation operates in the oil and gas industry and is now known as American Eagle Energy. Eternal Energy Corporation, "Form 8-K", Dec 14, 2011 (FTI-38). Nitro Petroleum, Inc. also operated in the oil and gas industry. Nitro Petroleum, Inc., "Form 10-K 2011" (FTI-39).

<sup>141</sup> Aswath Damodaran, "betas10.xls" (FTI-40)

<sup>142</sup> Aswath Damodaran, "betas11.xls" (FTI-41). Aswath Damodaran, "betaemerg11.xls" (FTI-42). Aswath Damodaran, "betaGlobal11.xls" (FTI-43).

- A5.24 Professor Damodaran also publishes the debt to equity ratio for the companies in the precious metals composite. Using Professor Damodaran's data, the current debt to equity ratio for the precious metals composite as of January 2011 was 7.8%.<sup>143</sup>
- A5.25 According to the World Bank, the corporate tax rate in Peru was 30.0% in 2011.<sup>144</sup> Therefore, we have assumed a corporate tax rate of 30.0% for purposes of this report.
- A5.26 Based on these inputs, the levered beta of the Project is 1.22.

### Country Risk

- A5.27 In addition to the risks outlined above, an investment in a business in Peru has an increased risk profile as compared to that of an investment in more developed economies, such as the US, Germany, or the UK, due to political, macroeconomic, environmental, and other factors.
- A5.28 There are a number of different methodologies available to measure the country risk applicable to an investment in the Santa Ana project. One measure of country risk is the default risk on sovereign debt. Although a country's default risk applies to debt instruments rather than equity instruments, it considers many of the same risk factors facing equity investments in a given country including the stability of the currency, political uncertainty, trade balances, and other macro-economic factors. However, all things considered, the country risk relating to an equity investment would tend to be higher than default risk (assuming the investment is fully exposed to country risk).
- A5.29 With respect to the Project, we have reviewed the following quantitative country risk estimates:
- i) Morningstar estimates the cost of capital for a number of countries and publishes their findings annually in the International Cost of Capital report ("**Morningstar ICC Report**"). We note that of the models used in the Morningstar ICC Report to estimate cost of capital, four have been calculated for both Peru and the United States.<sup>145</sup> Taking the differential between the cost of capital estimates for Peru and the United States provides a measure of Peru's country risk.

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<sup>143</sup> Aswath Damodaran, "betas10.xls" (FTI-40)

<sup>144</sup> World Bank, "Doing Business 2011 - Peru", 2011, page 49 (FTI-44)

<sup>145</sup> Morningstar, "International Cost of Capital Report 2011", page 11 - 13 (FTI-45)

Morningstar's Country Risk Rating Model, uses logarithmic and linear models to estimate cost of capital, averaging 19.1% for Peru and 11.4% for the United States, yielding a country risk estimate of 7.7% for Peru.<sup>146</sup> According to the Morningstar ICC Report's methodology section, this model is predicated on the relationship between in-country market returns back to 1980 and country's credit ratings over that period.<sup>147</sup>

The third model is the International CAPM Model which modifies CAPM to a country-specific format such that *"the beta is specific to the country being analyzed and the equity risk premium is calculated on a worldwide basis"*.<sup>148</sup> This model's calculated cost of capital for Peru and the United States are 14.4% and 10.7%, respectively, yielding an approximate incremental country risk for Peru of 4.3%.<sup>149</sup>

The fourth Morningstar model which is calculated for both Peru and the United States is the Relative Standard Deviation Model in which *"the standard deviations of international markets are indexed to the standard deviation of the U.S. market"*.<sup>150</sup> The Relative Standard Deviation Model's estimated cost of capital for Peru is 18.9% and for the United States, 10.9%. Therefore, the incremental country risk for Peru estimated by the Morningstar Relative Standard Deviation Model is 8.0%.<sup>151</sup>

As the inputs used to calculate the cost of capital estimates above are not provided in the Morningstar ICC Report, we are unable to test the validity thereof for the purposes of this analysis. Further, the use of historical returns may not provide a meaningful forward-looking measure of country risk. Thus, we have not relied on the Morningstar Country Risk Rating Model in our estimate of country risk.

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<sup>146</sup> Morningstar, "International Cost of Capital Report 2011", page 13 (FTI-45)

<sup>147</sup> Morningstar, "International Cost of Capital Report 2011", page 3 - 4 (FTI-45)

<sup>148</sup> Morningstar, "International Cost of Capital Report 2011", page 6 (FTI-45)

<sup>149</sup> Morningstar, "International Cost of Capital Report 2011", page 13 (FTI-45)

<sup>150</sup> Morningstar, "International Cost of Capital Report 2011", page 9 (FTI-45)

<sup>151</sup> Morningstar, "International Cost of Capital Report 2011", page 13 (FTI-45)

- ii) In an annual report, Professor Damodaran estimates annual prospective risk ratings based on the Moody's country rating. Professor Damodaran's report for 2010, calculated as at January 2011, provides the closest estimate to the Valuation Date.<sup>152</sup> Based on the long-term rating of Peru of "Baa3", the country's default spread over the United States Treasury Bond rate is 2.0%. In the short term, Professor Damodaran suggests the use of a 1.5 multiple on the country risk rating to account for the global average of equity market volatility to the bond market, resulting in a Peruvian country risk estimate of 3.0%.

Given that these are prospective risk assessments predicated on objective Moody's ratings and observed short term equity market volatility, we believe that a country risk premium of 3.0% for Peru at the Valuation Date is reasonable.

- iii) On the Valuation Date the 10 year bond spread for Peru's government debt over comparable United States Treasury debt was 1.8%.<sup>153</sup>
- iv) The spread between Peru's credit default swap ("CDS") rates and those of the United States is indicative of the additional return required by investors to insure Peru's government debt. CDS provide actual market prices for default spreads as they are derivative financial instruments that parties purchase to hedge default risk. As at the Valuation Date, the US's 10-year CDS rate in EUR<sup>154</sup> was 0.6% (59.82 basis points), compared to Peru's 10-year CDS rate in USD of 1.9% (186.44 basis points), resulting in a net Peru premium of approximately 1.2%.<sup>155</sup> This compares to a long-term default spread of 2.0% estimated by Professor Damodaran as noted above.

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<sup>152</sup> Aswath Damodaran, "CRPs 2011-01 - ctryprem10.xls", tab "Country premiums" (FTI-46)

<sup>153</sup> Peru Ministry of Economics and Finance, "Daily Report", June 23, 2011, page 1 (FTI-47)

<sup>154</sup> Wall Street Journal, "Cost to Insure U.S. Government Debt Soars", September 26, 2013 (FTI-48)  
US CDS is quoted in EUR.

<sup>155</sup> Credit default swap rates as provided by Capital IQ (FTI-49)

As another measure of the default risk on sovereign debt we considered the JP Morgan Emerging Markets Bond Index (“**EMBI**”) Sovereign Spread which provides the EMBI portfolio’s spread over the theoretical US zero coupon yield curve. As at the Valuation Date the EMBI Plus Sovereign Spread on Peruvian sovereign debt at the Valuation Date was 2.0%.<sup>156</sup> Multiplying this figure by the volatility factor of 1.5 gives us an equity based country risk of 3.0% - the same value as that found by Professor Damodaran.

- A5.30 Another factor to consider is the extent to which an investment in the Project would be exposed to Peruvian country risk. One of the main factors that impact an investment’s exposure to country risk is the amount of its revenues it derives from the country. Given that most of the Project’s revenues would be received from foreign customers in USD, it is likely that an investment in the Project would only be exposed to a portion of Peru’s overall level of country risk.
- A5.31 Finally, we note that there is a quasi-legal issue with decreasing an investor’s future claim on account of country risks as this effectively rewards poor behaviour (i.e. illegal expropriation as alleged by the Claimant) on the part of governments towards foreign investors. However, as this is a legal issue, we have not made any adjustments to our estimate of country risk on account of this issue.
- A5.32 While these qualitative factors inform our overall country risk assessment, we have not made explicit adjustments to our country risk estimate to take these factors into account. Based on the foregoing, we have estimated the country risk premium for Peru that is applicable to an investment in the Santa Ana project as 3.0% based on the above considerations.

### **Size Premium**

- A5.33 A size premium can be added to a cost of equity estimate for companies with low market capitalizations and EV in order to address the fact that a majority of market observations used to forecast CAPM inputs (i.e. ERP, beta, and country risk) refer to large companies.

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<sup>156</sup> Peru Ministry of Economics and Finance, “Daily Report”, June 23, 2011, page 1 (FTI-47)

- A5.34 This premium seeks to account for the increased operating risks faced by small companies (i.e. difficulties in raising financing, low investor confidence in management, inability to make use of economies of scale available to larger companies, etc.). Where the subject company, or potential buyers, are large enough to overcome these difficulties, the size premium is not considered necessary.
- A5.35 In addition to the Santa Ana project the Claimant was in the process of developing the Corani project in Peru as well as other prospective sites that have yet to yield Mineral Reserves. Given the size of the Project, we expect that a notional purchaser would have been of a similar size to Bear Creek Mining Corporation or larger, and therefore a size premium may not be appropriate.
- A5.36 Professor Damodaran does not apply small cap premiums in his valuations and recently explained his concerns about the basis for adding these premiums to expected returns as follows:<sup>157</sup>
- i) A revisiting of the historical data used to show the existence of such a premium produced ambiguous results;
  - ii) Forward-looking risk premiums do not show that investors are demanding higher returns for small cap stocks; and
  - iii) A pure intuitive justification is unconvincing because the additional risk “is either diversifiable, better adjusted for in the expected cash flows (instead of the discount rate) or double counted”.
- A5.37 In the light of these considerations, we have not applied a size premium in this case.

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<sup>157</sup>

Damodaran, “The Small Cap Premium: Where is the beef?”, April 11, 2015 (FTI-50)

## Cost of Debt

- A5.38 We note that as at the Valuation Date, the Claimant had completed financing for the Santa Ana project through an issuance of equity and that the debts on its balance sheet prior to the Valuation Date only related to the acquisition (not the development) of the Corani project.<sup>158</sup>
- A5.39 In determining an assumed cost of debt, we have looked at other market indicators of debt for silver projects or mining projects located in Peru and debt raised by other Latin American and Canadian miners. Our review took account of the cost of Peruvian public debt as well and corporate debt for non-Peruvian entities:
- i) The 10 year bond spread for Peru's government debt was 1.8% on the Valuation Date over comparable United States Treasury debt at the time.<sup>159</sup> This is generally consistent with the EMBI Plus Sovereign Spread<sup>160</sup> on Peruvian sovereign debt at the Valuation Date of 2.0%.<sup>161</sup> Adding these spreads to the 10 year United States Treasury bond rate (our risk-free rate) of 3.8% results in an expected debt rate of approximately 5.6 to 5.8%.
  - ii) The Central Reserve Bank of Peru's reference interest rate in domestic currency was raised in steps from 3.0% in December 2010 to 4.3% in May 2011;<sup>162</sup>
  - iii) Between December 2010 and June 2011 the corporate prime rate in domestic currency increased from 3.6% to 5.6% before declining to 5.4% in December 2011;<sup>163</sup> and,
  - iv) According to Morningstar, the SIC 10 and SIC 104 composites had median costs of debt of 4.6% and 4.5%, respectively.<sup>164</sup>

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<sup>158</sup> Bear Creek, "Bear Creek Audited Financial Statements", 2011, page 20, note 10, 11 (FTI-51)

Bear Creek, "Bear Creek Audited Financial Statements", 2010, page 15, note 8 (FTI-51)

<sup>159</sup> Peru Ministry of Economics and Finance, "Daily Report", June 23, 2011, page 1 (FTI-47)

We have used a 10-year bond spread in this case as this is the longest term presented by the Peruvian Ministry of Economics and Finance.

<sup>160</sup> JP Morgan EMBI Sovereign Spread data provides the EMBI portfolio's spread over the theoretical US zero coupon yield curve.

<sup>161</sup> Peru Ministry of Economics and Finance, "Daily Report", June 23, 2011, page 1 (FTI-47)

<sup>162</sup> Central Reserve Bank of Peru, "2011 Annual Report", 2011, page 8, 141 (FTI-52)

<sup>163</sup> Central Reserve Bank of Peru, "2011 Annual Report", 2011, page 8 (FTI-52)

<sup>164</sup> Morningstar, "2011 Cost of Capital Yearbook", 2011, SIC 104 (FTI-36)



A5.40 Based on the preceding indicators, we believe that a pre-tax cost of debt estimate of 5.6% is reasonable.

#### **Corporate Tax Rate**

A5.41 As discussed at **Paragraph A5.25**, Peru's corporate tax rate in 2011 was 30.0% and we have applied this rate to calculate the after-tax cost of debt.

#### **Capital Structure**

A5.42 As discussed in **Paragraph A5.24**, the debt to equity ratio for the precious metals composite in January 2011 was 7.8%. This equates to a debt to total capital ratio of 7.2%, which we have assumed that this is an appropriate capital structure for the Santa Ana project.

#### **Inflation Rate**

A5.43 The assumptions used above, such as the risk-free rate, are based on nominal rates of return that include an implicit assumption of inflation. A discount rate denominated in real terms must therefore adjust for the implicit assumption of inflation during the forecast period.

A5.44 The Federal Reserve Bank of Philadelphia publishes quarterly surveys of professional forecasters focused on estimating general American economic indicators such as gross domestic product, unemployment rate, and payroll.<sup>165</sup> The survey published May 13, 2011 estimated that the long term annual average Consumer Price Index from 2011 through 2020 would be approximately 2.4%.<sup>166</sup> We have used this long term estimate as a proxy for the implicit inflation rate included in our WACC-related assumptions and have adjusted accordingly.

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<sup>165</sup> Federal Reserve Bank of Philadelphia, "Survey of Professional Forecasters: Second Quarter 2011", May 13, 2011, page 1 (**FTI-26**)

<sup>166</sup> Federal Reserve Bank of Philadelphia, "Survey of Professional Forecasters: Second Quarter 2011", May 13, 2011, page 4 (**FTI-26**)



## Conclusion

A5.45 The tables below combine the components described above to calculate our WACC estimate.

**Figure 32 Cost of Equity Calculation**

Component	Symbol	Value
Risk Free Rate	[A]	3.8%
Equity Risk Premium	[B]	5.2%
Industry Beta	[C]	1.2
Adjusted Equity Risk Premium	$[D] = [B] \times [C]$	6.4%
Country Risk Premium	[E]	3.0%
Size Premium	[F]	0.0%
<i>Nominal</i> Cost of Equity	$[G] = [A] + [D] + [E] + [F]$	13.2%
Less: US Inflation	[H]	2.4%
<b>Real Cost of Equity</b>	$[I] = [G] - [H]$	<b>10.8%</b>

**Figure 33 Cost of Debt Calculation**

Component	Symbol	Value
Cost of Debt	[J]	5.6%
Tax Rate	[K]	30.0%
Tax Adjusted <i>Nominal</i> Cost of Debt	$[L] = [J] \times (1 - [K])$	3.9%
Less: US Inflation	[M]	2.4%
<b>Real Cost of Debt</b>	$[N] = [L] - [M]$	<b>1.5%</b>

**Figure 34 Real WACC Calculation**

Component	Symbol	Value
Debt	[O]	7.2%
Equity	$[P] = [1 - O]$	92.8%
WACC	$[Q] = [I] \times [P] + [N] \times [O]$	10.1%
<b>WACC - Rounded</b>		<b>10.0%</b>



- A5.46 We have calculated a real cost of equity of 10.8% and a real after-tax cost of debt of 1.5% to be appropriate for the Project. Using the aforementioned debt to capital weighting, we have concluded that the appropriate WACC for the Santa Ana project at the Valuation Date is 10.0%
- A5.47 We have rounded our WACC estimate for the purpose of this report to the nearest full percentage point as to not imply that an estimated WACC rate is determined with perfect precision. The CAPM-based approach employed in this report is informed by multiple public financial and non-financial factors that are synthesized based on our professional judgment.

## Appendix 6 TD Bank set of silver price forecasts

A6.1 The following table presents a list of analyst forecasts for silver made proximate to the Valuation Date that was summarized by TD:

**Figure 35 TD Bank Summary of Silver Forecasts (2011 USD)<sup>167</sup>**

Silver (June 2011 \$ per ounce Ag)							
Forecaster	Date	2011	2012	2013	2014	2015	Long term
BMO Capital Markets	June 23, 2011	37.34	39.06	28.61	23.28	16.37	16.37
BoA / Merrill Lynch	June 20, 2011	32.78	34.77	34.05	25.98	n/a	17.90
Canaccord Genuity	June 20, 2011	42.00	40.04	33.38	25.61	n/a	20.00
Citigroup	June 15, 2011	33.03	25.39	21.34	17.82	14.55	n/a
Cormark	June 21, 2011	30.00	25.39	17.17	n/a	n/a	17.17
Credit Suisse	June 7, 2011	35.00	29.30	23.84	n/a	n/a	20.00
Deutsche Bank	June 10, 2011	38.55	48.83	38.15	n/a	12.91	12.91
JP Morgan	June 17, 2011	35.64	30.57	24.80	21.14	n/a	18.00
Morgan Stanley	June 20, 2011	31.39	27.64	23.84	21.49	19.02	17.48
Raymond James	June 14, 2011	34.52	34.18	23.84	20.95	15.46	15.46
# forecasts		10	10	10	7	5	9
Mean forecast		35.03	33.52	26.90	22.33	15.66	17.25
Maximum forecast		42.00	48.83	38.15	25.98	19.02	20.00
Median forecast		34.76	32.37	24.32	21.49	15.46	17.48
Minimum forecast		30.00	25.39	17.17	17.82	12.91	12.91
Average median forecast Jul-Jun		33.57	28.35	22.91	18.48	16.73	

A6.2 Annual estimates are assumed to be nominal. Long term estimates are assumed to be real except where the long term price equals the last annual estimate, in which case it is assumed to be nominal.

<sup>167</sup> TD Bank, "Commodity Price Research Estimates", June 25, 2011, page 2 (FTI-29)

As discussed in Paragraph 7.42, we have only relied upon analyst forecasts made in June 2011.



A6.3 We have converted the 2012 to 2015 and long term nominal price forecasts to 2011 U.S dollars using our long term inflation assumption.<sup>168</sup>

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<sup>168</sup> See **Paragraph A5.43** and **Paragraph A5.44** for a discussion of our inflation assumption.

## Appendix 7 TD Bank set of gold price forecasts

A7.1 The following table presents a list of analyst forecasts for gold made proximate to the Valuation Date that was summarized by TD:<sup>169</sup>

**Figure 36 TD Bank Summary of Gold Forecasts (2011 USD)**

Gold (June 2011 \$ per ounce Au)							
Forecaster	Date	2011	2012	2013	2014	2015	Long term
BMO Capital Markets	June 23, 2011	1,434	1,465	1,287	1,118	1,000	1,000
BoA / Merrill Lynch	June 20, 2011	1,423	1,429	1,268	1,127	n/a	1,080
Canaccord Genuity	June 20, 2011	1,524	1,489	1,335	1,164	n/a	1,000
Citigroup	June 15, 2011	1,443	1,294	1,168	1,048	782	n/a
Cormark	June 21, 2011	1,500	1,367	1,144	n/a	n/a	1,144
Credit Suisse	June 7, 2011	1,375	1,318	1,264	n/a	n/a	1,300
Deutsche Bank	June 10, 2011	1,572	1,953	1,717	n/a	773	850
JP Morgan	June 17, 2011	1,460	1,450	1,416	1,383	n/a	1,383
Morgan Stanley	June 20, 2011	1,401	1,299	1,192	1,118	1,046	1,031
Raymond James	June 14, 2011	1,425	1,416	1,383	1,257	1,000	1,000
# forecasts		10	10	10	7	5	9
Mean forecast		1,456	1,448	1,318	1,173	920	1,088
Maximum forecast		1,572	1,953	1,717	1,383	1,046	1,383
Median forecast		1,439	1,422	1,278	1,127	1,000	1,031
Minimum forecast		1,375	1,294	1,144	1,048	773	850

A7.2 Annual estimates are assumed to be nominal. Long term estimates are assumed to be real except where the long term price equals the last annual estimate, in which case it is assumed to be nominal.

A7.3 We have converted the 2012 to 2015 and long term nominal price forecasts to 2011 U.S dollars using our long term inflation assumption.<sup>170</sup>

<sup>169</sup> TD Bank, "Commodity Price Research Estimates", June 25, 2011, page 1 (FTI-29)

As discussed in Paragraph 7.42, we have only relied upon analyst forecasts made in June 2011.

## Appendix 8 Industry Analyst Summary

### **BMO**

- A8.1 BMO's last published report prior to the Valuation Date was issued on June 1, 2011, valuing Santa Ana at \$108.6 million at a discount rate of 10.0% using BMO Research metal prices.<sup>171</sup> BMO also presented a valuation based on the silver spot price of \$38.48 per ounce, which resulted in a NAV of \$396.8 million. These valuations considered a delay in Santa Ana's development of 18 months, estimating that production would begin in Q4'2013 due to the ESIA Suspension.

### **Raymond James**

- A8.2 Raymond James published a report dated on June 2, 2011 relating to Bear Creek's announcement of the ESIA Suspension.<sup>172</sup> Raymond James shifted the expected production date of Santa Ana from Q4'2012 to 2014, reducing the project's NAV as more of Santa Ana's silver output would generate revenue at a lower silver price. Raymond James proposed a valuation based on its long term silver price expectations of \$34.52 per ounce in 2011, climbing to \$35.00 per ounce in 2012, then remaining constant beyond 2012 at \$25.00 per ounce, resulting in a valuation of \$193.0 million CAD. The discount rate used was not explicitly indicated in the report.
- A8.3 Raymond James did not expect the social unrest to have a direct impact on the value of Santa Ana as they believed that the protesters were simply using the period leading up to the presidential elections as a platform to voice their views against mining and development, instead of any technical or environmental issues relating specifically to the Santa Ana project, especially given that Bear Creek received community support during the public hearing in February 2011.

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<sup>170</sup> See **Paragraph A5.43** and **Paragraph A5.44** for a discussion of our inflation assumption.

<sup>171</sup> BMO, "June 1, 2011 Report", page 1-9 (**FTI-53**)

<sup>172</sup> Raymond James, "June 2, 2011 Report", page 1-9 (**FTI-54**)

A8.4 Raymond James noted that Bear Creek's share price did not appear to reflect the value of Santa Ana, highlighting the following:<sup>173</sup>

*"Since the beginning of March, Bear Creek's share price has dropped ~40% vs. the silver price, which is up ~6% and the SPTSX Gold Index down ~5%."*

**Paradigm Capital**

A8.5 Paradigm's last issued report prior to the Valuation Date was published on June 8, 2011.<sup>174</sup> Per this report, Santa Ana's NAV was estimated to be \$508.6 million, at a discount rate of 5.0%, and a target silver price at \$38.25 per ounce. The valuation was based on the following conditions prevailing at that time:

- i) Ollanta Humala's victory in the Peruvian presidential election;
- ii) The anti-mining protests in Peru; and,
- iii) The announcement of the ESIA Suspension.

A8.6 Despite increasing volatility evidenced in the stock market the day after the election result was announced, given the historical performance of Peru's mining industry as well as President Humala's stated objective of enticing global investors to do more business in Peru, Paradigm expressed optimism that the Santa Ana development would proceed with a few adjustments to be made for valuation purposes. The ongoing anti-mining protests were expected to result in an increase of both the corporate tax and royalty rates faced by miners. As a result, Paradigm adjusted their financial model and assumed a corporate tax rate of 40.0% and a royalty rate of 6.0% NSR, from 30.0% and 3.0% NSR, respectively. Additionally, the announcement of the ESIA Suspension pushed the production start date to Q1'2014 from Q2'2013, further decreasing the valuation.

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<sup>173</sup> Raymond James, "June 2, 2011 Report", page 2 (FTI-54)

<sup>174</sup> Paradigm, "June 8, 2011 Report", page 1-4 (FTI-55)

### **Canaccord**

- A8.7 Canaccord published a research report on June 7, 2011 valuing the NAV of Santa Ana at \$301.1 million using a 15.0% discount rate and a peak silver price of \$47.50 per ounce.<sup>175</sup> Canaccord also estimated that the value of the “Santa Ana Exploration In Situ” was \$51.1 million under the same parameters discussed above.
- A8.8 A major change to the valuation was an increase of the discount rate used, from 10.0% to 15.0%, caused by a much higher perceived risk level resulting from the Peruvian elections. Canaccord believed that Ollanta Humala’s victory significantly increased the overall uncertainty over the Santa Ana project, especially given his previous nationalist pronouncements. Additionally, since Humala had previously hinted at establishing a windfall profits tax, Canaccord expected a 5.0% increase in corporate taxes to 35.0% from 30.0% and an increase in the royalty rate to 5.0%. Canaccord was especially concerned with the overall uncertainty in Peru’s investment climate, and thus pushed back the Santa Ana production date much further to 2015. Canaccord also noted that should President Humala’s policies prove to be moderate, their discount rate would likely drop to between 5.0% and 10.0% as the projects were de-risked.
- A8.9 Canaccord compared its valuation of Bear Creek to other silver producers who were trading at between 0.62x and 0.91x Price to NAV ratio (“**P/NAV**”) using a 5.0% discount rate and the spot silver price.<sup>176</sup> Canaccord noted that excluding any value for the Santa Ana project, and using a discount rate of 15.0% and the spot silver price, Bear Creek had a P/NAV ratio of 0.63x, which was comparable to its peers. However, if the discount rate was adjusted to 5.0% to be consistent with other silver producers, the P/NAV dropped to 0.35x, lower than its peers, implying that the stock was undervalued. Therefore, Canaccord concluded the following:

*“[A]t today’s share price, investors are paying essentially nothing for the Santa Ana Project with a compelling revaluation potential associated with de-risking the Corani project alone.”*

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<sup>175</sup> Canaccord, “June 7, 2011 Report”, page 1-8 (FTI-56)

<sup>176</sup> Canaccord, “June 7, 2011 Report”, page 2 (FTI-56)



### **Scotia**

A8.10 Scotia issued a research report on May 31, 2011 valuing the Santa Ana NAV at \$179.0 million CAD based on their estimated silver price of \$36.00 per ounce in 2011 and \$40.00 per ounce in 2012.<sup>177</sup> Scotia noted the wide-ranging pre-election protests contributed to the volatility of Bear Creek's share price; however they did not expect long-term permitting concerns as they anticipated the protest to dissipate following the presidential run-off.

A8.11 Furthermore, considering the \$179.0 million CAD (\$1.38 CAD per share) valuation based on the Scotia model, the Bear Creek share price at \$6.07 CAD as of May 31, 2011 and the larger scale of the Corani project, the Scotia analyst concluded by stating:<sup>178</sup>

*"We believe the share price no longer reflects Santa Ana, and we conclude Bear Creek is oversold."*

### **Haywood**

A8.12 Haywood published a research report on March 17, 2011 and did not issue subsequent reports between then and the Valuation Date.<sup>179</sup> The mid-March report valued the NAV of Santa Ana at \$218.0 million CAD using a 5.0% discount rate and assuming a production start in Q3'2012. Haywood forecasted the per ounce silver price to be \$27.00 in 2011, \$25.00 in 2012, \$22.75 in 2013, \$20.25 in 2014, \$19.25 in 2015 and \$18.50 in 2016. Haywood also proposed two alternative scenarios for Santa Ana using two different discount rates. The NAV was expected to be \$168.0 million CAD (approximately \$170.4 million) using a 10% discount rate and \$186.0 million CAD (approximately \$188.6 million) using an 8.0% discount rate.

### **Cormark Securities**

A8.13 Cormark published a research report on January 20, 2011 and did not issue subsequent reports between then and the Valuation Date.<sup>180</sup> This report valued the NAV of Santa Ana at \$233.0 million with a discount rate at 7.5%. The project was expected to start production in late 2012.

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<sup>177</sup> Scotia, "May 31, 2011 Report", page 1-6 (FTI-57)

<sup>178</sup> Scotia, "May 31, 2011 Report", page 1 (FTI-57)

<sup>179</sup> Haywood, "March 17, 2011 Report", page 1-47 (FTI-58)

<sup>180</sup> Cormark, "January 20, 2011 Report", page 1-5 (FTI-59)

**Schedule 1**
**Bear Creek Mining Corporation v. Republic of Peru  
Discounted Cash Flow of the Santa Ana Project  
(in \$ thousands unless noted otherwise)**

Description	Notes	Sum	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Silver Price (Real \$ per oz)	(1)				\$ 33.20	\$ 31.83	\$ 30.78	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21
Gold Price (Real \$ per oz)	(1)				\$ 1,505.16	\$ 1,502.49	\$ 1,514.61	\$ 1,539.28	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64
Payable Silver (oz)	(2)	80,297,686	-	-	3,849,783	4,529,072	4,456,481	4,344,621	4,423,159	4,211,755	4,015,493	3,768,149	3,558,692	3,388,672	3,368,399	3,355,472
Payable Gold (oz)	(2)	8,800	-	-	376	343	347	352	348	358	368	379	389	398	398	399
Silver Revenue		\$ 1,907,469	\$ -	\$ -	\$ 127,810	\$ 144,142	\$ 137,179	\$ 96,494	\$ 98,238	\$ 93,543	\$ 89,184	\$ 83,691	\$ 79,039	\$ 75,262	\$ 74,812	\$ 74,525
Gold Revenue		\$ 11,861	\$ -	\$ -	\$ 565	\$ 516	\$ 525	\$ 542	\$ 458	\$ 471	\$ 484	\$ 499	\$ 512	\$ 523	\$ 524	\$ 525
<b>Gross Revenue</b>		<b>\$ 1,919,330</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 128,375</b>	<b>\$ 144,658</b>	<b>\$ 137,704</b>	<b>\$ 97,036</b>	<b>\$ 98,697</b>	<b>\$ 94,015</b>	<b>\$ 89,668</b>	<b>\$ 84,190</b>	<b>\$ 79,551</b>	<b>\$ 75,785</b>	<b>\$ 75,336</b>	<b>\$ 75,050</b>
Transportation and Treatment	(2)	\$ (50,588)	\$ -	\$ -	\$ (2,425)	\$ (2,853)	\$ (2,808)	\$ (2,737)	\$ (2,787)	\$ (2,653)	\$ (2,530)	\$ (2,374)	\$ (2,242)	\$ (2,135)	\$ (2,122)	\$ (2,114)
<b>Net Smelter Return</b>		<b>\$ 1,868,743</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 125,950</b>	<b>\$ 141,804</b>	<b>\$ 134,896</b>	<b>\$ 94,299</b>	<b>\$ 95,910</b>	<b>\$ 91,361</b>	<b>\$ 87,138</b>	<b>\$ 81,816</b>	<b>\$ 77,309</b>	<b>\$ 73,651</b>	<b>\$ 73,214</b>	<b>\$ 72,936</b>
Peruvian Production Royalty	(3)	\$ (24,200)	\$ -	\$ -	\$ (1,979)	\$ (2,454)	\$ (2,247)	\$ (1,286)	\$ (1,318)	\$ (1,227)	\$ (1,143)	\$ (1,036)	\$ (946)	\$ (873)	\$ (864)	\$ (859)
<b>Net Revenue</b>		<b>\$ 1,844,543</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 123,972</b>	<b>\$ 139,350</b>	<b>\$ 132,649</b>	<b>\$ 93,013</b>	<b>\$ 94,592</b>	<b>\$ 90,134</b>	<b>\$ 85,995</b>	<b>\$ 80,780</b>	<b>\$ 76,363</b>	<b>\$ 72,778</b>	<b>\$ 72,350</b>	<b>\$ 72,077</b>
Operating Expenses	(2)	\$ (816,631)	\$ -	\$ (9,533)	\$ (41,212)	\$ (43,076)	\$ (43,680)	\$ (42,715)	\$ (43,767)	\$ (42,291)	\$ (40,338)	\$ (37,185)	\$ (36,779)	\$ (31,770)	\$ (28,295)	\$ (28,294)
Initial Capital Expenses	(2)	\$ (72,485)	\$ (11,329)	\$ (61,156)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sustaining Capital Expenses	(2)	\$ (28,308)	\$ -	\$ -	\$ (497)	\$ (6,525)	\$ (449)	\$ (298)	\$ (5,940)	\$ (278)	\$ (187)	\$ (200)	\$ (205)	\$ (429)	\$ (5,000)	\$ (300)
Reclamation Capital Expenses	(2)	\$ (18,512)	\$ -	\$ -	\$ (4)	\$ (8)	\$ (12)	\$ (16)	\$ (20)	\$ (24)	\$ (28)	\$ (32)	\$ (36)	\$ (1,062)	\$ (2,089)	\$ (3,601)
<b>Employee Profit Sharing</b>	(4)	<b>\$ (74,504)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ (5,748)</b>	<b>\$ (6,787)</b>	<b>\$ (6,161)</b>	<b>\$ (3,062)</b>	<b>\$ (3,067)</b>	<b>\$ (2,904)</b>	<b>\$ (3,360)</b>	<b>\$ (3,320)</b>	<b>\$ (3,062)</b>	<b>\$ (3,184)</b>	<b>\$ (3,380)</b>	<b>\$ (3,353)</b>
<b>Pre-tax Cash Flows</b>		<b>\$ 834,103</b>	<b>\$ (11,329)</b>	<b>\$ (70,689)</b>	<b>\$ 76,511</b>	<b>\$ 82,954</b>	<b>\$ 82,348</b>	<b>\$ 46,922</b>	<b>\$ 41,798</b>	<b>\$ 44,638</b>	<b>\$ 42,082</b>	<b>\$ 40,043</b>	<b>\$ 36,281</b>	<b>\$ 36,333</b>	<b>\$ 33,585</b>	<b>\$ 36,530</b>
<b>Net Tax Expense</b>	(5)	<b>\$ (238,422)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ (1,465)</b>	<b>\$ (23,144)</b>	<b>\$ (21,671)</b>	<b>\$ (11,610)</b>	<b>\$ (12,091)</b>	<b>\$ (11,504)</b>	<b>\$ (11,092)</b>	<b>\$ (10,791)</b>	<b>\$ (9,909)</b>	<b>\$ (10,458)</b>	<b>\$ (11,233)</b>	<b>\$ (11,024)</b>
<b>After-tax Cash Flows</b>		<b>\$ 595,682</b>	<b>\$ (11,329)</b>	<b>\$ (70,689)</b>	<b>\$ 75,045</b>	<b>\$ 59,811</b>	<b>\$ 60,677</b>	<b>\$ 35,312</b>	<b>\$ 29,707</b>	<b>\$ 33,133</b>	<b>\$ 30,990</b>	<b>\$ 29,252</b>	<b>\$ 26,372</b>	<b>\$ 25,875</b>	<b>\$ 22,352</b>	<b>\$ 25,506</b>
IGV Recovered/ (Paid)	(6)	\$ 7,886	\$ (2,153)	\$ (13,431)	\$ 24,026	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Working Capital	(2)	\$ (0)	\$ (440)	\$ (1,469)	\$ (13,746)	\$ (2,096)	\$ 864	\$ 4,962	\$ (338)	\$ 502	\$ 446	\$ 536	\$ 540	\$ 335	\$ (145)	\$ 150
<b>Net Cash Flows (Real)</b>		<b>\$ 603,568</b>	<b>\$ (13,922)</b>	<b>\$ (85,589)</b>	<b>\$ 85,325</b>	<b>\$ 57,714</b>	<b>\$ 61,540</b>	<b>\$ 40,274</b>	<b>\$ 29,369</b>	<b>\$ 33,635</b>	<b>\$ 31,436</b>	<b>\$ 29,788</b>	<b>\$ 26,911</b>	<b>\$ 26,210</b>	<b>\$ 22,208</b>	<b>\$ 25,656</b>
Discount factor	(7)		0.9754	0.9070	0.8244	0.7495	0.6813	0.6193	0.5629	0.5118	0.4652	0.4229	0.3844	0.3494	0.3177	0.2888
<b>Discounted Cash Flows (Real)</b>		<b>\$ 224,158</b>	<b>\$ (13,579)</b>	<b>\$ (77,626)</b>	<b>\$ 70,342</b>	<b>\$ 43,254</b>	<b>\$ 41,929</b>	<b>\$ 24,942</b>	<b>\$ 16,533</b>	<b>\$ 17,213</b>	<b>\$ 14,625</b>	<b>\$ 12,597</b>	<b>\$ 10,344</b>	<b>\$ 9,159</b>	<b>\$ 7,055</b>	<b>\$ 7,408</b>

**Notes:**

(1) See Figure 21.

(2) Per the RPA Extended Life Case.

(3) Calculated as 1.0% on the first \$60.0 million of NSR, 2.0% up to \$120.0 million, and 3.0% beyond. See Revised Feasibility Study, page 144 (FTI-06).

(4) Calculated at 8% of accounting net income before taxes. See Revised Feasibility Study, page 144 (FTI-06).

Accounting depreciation calculated based on 15.0% annual straight-line depreciation (halved in the first year of addition). See Revised Feasibility Study, page 144 (FTI-06).

(5) Calculated based on a 30.0% corporate income tax rate. See Revised Feasibility Study, page 144 (FTI-06).

Depreciation for tax purposes calculated at a 20.0% depreciation rate on undepreciated capital cost. See PWC, "Doing Deals in Peru 2011", page 13 (FTI-60).

Tax losses from years prior to 2012 are assumed to be \$14.4 million. See Revised Feasibility Study, page 144 (FTI-06).

(6) IGV credits calculated at 19.0% of costs and recuperated at 19.0% of gross revenue. IGV credit prior to 2012 is assumed to be \$8.4 million. See Revised Feasibility Study, page 144 (FTI-06).

(7) Calculated based on a discount rate of 10.0%. See Appendix 5.

**Schedule 1 (Cont'd)**  
**Bear Creek Mining Corporation v. Republic of Peru**  
**Discounted Cash Flow of the Santa Ana Project**  
(in \$ thousands unless noted otherwise)

Description	Notes	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Silver Price (Real \$ per oz)	(1)	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21	\$ 22.21
Gold Price (Real \$ per oz)	(1)	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64	\$ 1,315.64
Payable Silver (oz)	(2)	3,155,070	3,127,329	3,127,329	3,127,329	3,127,329	3,127,329	3,127,329	3,127,329	3,127,329	3,008,016	1,664,871	181,344	-	-	-	-
Payable Gold (oz)	(2)	409	410	410	410	410	410	410	410	410	416	240	-	-	-	-	-
Silver Revenue		\$ 70,074	\$ 69,458	\$ 69,458	\$ 69,458	\$ 69,458	\$ 69,458	\$ 69,458	\$ 69,458	\$ 69,458	\$ 66,808	\$ 36,977	\$ 4,028	\$ -	\$ -	\$ -	\$ -
Gold Revenue		\$ 538	\$ 539	\$ 539	\$ 539	\$ 539	\$ 539	\$ 539	\$ 539	\$ 539	\$ 547	\$ 316	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Gross Revenue</b>		<b>\$ 70,612</b>	<b>\$ 69,997</b>	<b>\$ 69,997</b>	<b>\$ 69,997</b>	<b>\$ 69,997</b>	<b>\$ 69,997</b>	<b>\$ 69,997</b>	<b>\$ 69,997</b>	<b>\$ 69,997</b>	<b>\$ 67,355</b>	<b>\$ 37,293</b>	<b>\$ 4,028</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Transportation and Treatment	(2)	\$ (1,988)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,895)	\$ (1,049)	\$ (114)	\$ -	\$ -	\$ -	\$ -
<b>Net Smelter Return</b>		<b>\$ 68,624</b>	<b>\$ 68,027</b>	<b>\$ 68,027</b>	<b>\$ 68,027</b>	<b>\$ 68,027</b>	<b>\$ 68,027</b>	<b>\$ 68,027</b>	<b>\$ 68,027</b>	<b>\$ 68,027</b>	<b>\$ 65,460</b>	<b>\$ 36,244</b>	<b>\$ 3,913</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Peruvian Production Royalty	(3)	\$ (772)	\$ (761)	\$ (761)	\$ (761)	\$ (761)	\$ (761)	\$ (761)	\$ (761)	\$ (761)	\$ (709)	\$ (362)	\$ (39)	\$ -	\$ -	\$ -	\$ -
<b>Net Revenue</b>		<b>\$ 67,852</b>	<b>\$ 67,267</b>	<b>\$ 67,267</b>	<b>\$ 67,267</b>	<b>\$ 67,267</b>	<b>\$ 67,267</b>	<b>\$ 67,267</b>	<b>\$ 67,267</b>	<b>\$ 67,267</b>	<b>\$ 64,751</b>	<b>\$ 35,882</b>	<b>\$ 3,874</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Operating Expenses	(2)	\$ (29,312)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (31,821)	\$ (14,473)	\$ -	\$ -	\$ -	\$ -	\$ -
Initial Capital Expenses	(2)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sustaining Capital Expenses	(2)	\$ (300)	\$ (300)	\$ (5,000)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ -	\$ -	\$ -	\$ -	\$ -
Reclamation Capital Expenses	(2)	\$ (65)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (469)	\$ (741)	\$ (737)	\$ (733)	\$ (730)	\$ (726)
<b>Employee Profit Sharing</b>	(4)	<b>\$ (2,922)</b>	<b>\$ (2,493)</b>	<b>\$ (2,455)</b>	<b>\$ (2,416)</b>	<b>\$ (2,418)</b>	<b>\$ (2,478)</b>	<b>\$ (2,518)</b>	<b>\$ (2,516)</b>	<b>\$ (2,514)</b>	<b>\$ (2,535)</b>	<b>\$ (1,625)</b>	<b>\$ (227)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Pre-tax Cash Flows</b>		<b>\$ 35,252</b>	<b>\$ 29,642</b>	<b>\$ 24,981</b>	<b>\$ 29,720</b>	<b>\$ 29,718</b>	<b>\$ 29,657</b>	<b>\$ 29,618</b>	<b>\$ 29,620</b>	<b>\$ 29,621</b>	<b>\$ 29,274</b>	<b>\$ 19,014</b>	<b>\$ 2,907</b>	<b>\$ (737)</b>	<b>\$ (733)</b>	<b>\$ (730)</b>	<b>\$ (726)</b>
<b>Net Tax Expense</b>	(5)	<b>\$ (9,673)</b>	<b>\$ (8,375)</b>	<b>\$ (8,349)</b>	<b>\$ (8,331)</b>	<b>\$ (8,447)</b>	<b>\$ (8,523)</b>	<b>\$ (8,586)</b>	<b>\$ (8,646)</b>	<b>\$ (8,695)</b>	<b>\$ (8,629)</b>	<b>\$ (5,487)</b>	<b>\$ (690)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>After-tax Cash Flows</b>		<b>\$ 25,579</b>	<b>\$ 21,268</b>	<b>\$ 16,632</b>	<b>\$ 21,389</b>	<b>\$ 21,271</b>	<b>\$ 21,135</b>	<b>\$ 21,032</b>	<b>\$ 20,974</b>	<b>\$ 20,927</b>	<b>\$ 20,645</b>	<b>\$ 13,527</b>	<b>\$ 2,217</b>	<b>\$ (737)</b>	<b>\$ (733)</b>	<b>\$ (730)</b>	<b>\$ (726)</b>
IGV Recovered/ (Paid)	(6)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (140)	\$ (139)	\$ (139)	\$ (138)
Change in Working Capital	(2)	\$ 276	\$ 308	\$ (150)	\$ (9)	\$ (9)	\$ (9)	\$ (9)	\$ (9)	\$ (9)	\$ 227	\$ 2,642	\$ 3,102	\$ 3,450	\$ -	\$ 100	\$ -
<b>Net Cash Flows (Real)</b>		<b>\$ 25,855</b>	<b>\$ 21,575</b>	<b>\$ 16,482</b>	<b>\$ 21,380</b>	<b>\$ 21,262</b>	<b>\$ 21,126</b>	<b>\$ 21,023</b>	<b>\$ 20,965</b>	<b>\$ 20,918</b>	<b>\$ 20,872</b>	<b>\$ 16,169</b>	<b>\$ 5,318</b>	<b>\$ 2,573</b>	<b>\$ (873)</b>	<b>\$ (768)</b>	<b>\$ (864)</b>
Discount factor	(7)	0.2625	0.2386	0.2169	0.1972	0.1792	0.1629	0.1481	0.1346	0.1224	0.1113	0.1011	0.0919	0.0836	0.0760	0.0691	0.0628
<b>Discounted Cash Flows (Real)</b>		<b>\$ 6,786</b>	<b>\$ 5,148</b>	<b>\$ 3,575</b>	<b>\$ 4,216</b>	<b>\$ 3,811</b>	<b>\$ 3,442</b>	<b>\$ 3,114</b>	<b>\$ 2,823</b>	<b>\$ 2,560</b>	<b>\$ 2,322</b>	<b>\$ 1,635</b>	<b>\$ 489</b>	<b>\$ 215</b>	<b>\$ (66)</b>	<b>\$ (53)</b>	<b>\$ (54)</b>

**Notes:**

- (1) See **Figure 21**.
- (2) Per the RPA Extended Life Case.
- (3) Calculated as 1.0% on the first \$60.0 million of NSR, 2.0% up to \$120.0 million, and 3.0% beyond. See Revised Feasibility Study, page 144 **(FTI-06)**.
- (4) Calculated at 8% of accounting net income before taxes. See Revised Feasibility Study, page 144 **(FTI-06)**.  
Accounting depreciation calculated based on 15.0% annual straight-line depreciation (halved in the first year of addition). See Revised Feasibility Study, page 144 **(FTI-06)**.
- (5) Calculated based on a 30.0% corporate income tax rate. See Revised Feasibility Study, page 144 **(FTI-06)**.  
Depreciation for tax purposes calculated at a 20.0% depreciation rate on undepreciated capital cost. See PWC, "Doing Deals in Peru 2011", page 13 **(FTI-60)**.  
Tax losses from years prior to 2012 are assumed to be \$14.4 million. See Revised Feasibility Study, page 144 **(FTI-06)**.
- (6) IGV credits calculated at 19.0% of costs and recuperated at 19.0% of gross revenue. IGV credit prior to 2012 is assumed to be \$8.4 million. See Revised Feasibility Study, page 144 **(FTI-06)**.
- (7) Calculated based on a discount rate of 10.0%. See **Appendix 5**.

**Schedule 2**

**Bear Creek Mining Corporation v. Republic of Peru**

**Discounted Cash Flow of the Santa Ana Project - Applying Futures Prices to the Long Term Period**

(in \$ thousands unless noted otherwise)

Description	Notes	Sum	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Silver Price (Real \$ per oz)	(1)				\$ 33.20	\$ 31.83	\$ 30.78	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57
Gold Price (Real \$ per oz)	(1)				\$ 1,505.16	\$ 1,502.49	\$ 1,514.61	\$ 1,539.28	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39
Payable Silver (oz)	(2)	80,297,686	-	-	3,849,783	4,529,072	4,456,481	4,344,621	4,423,159	4,211,755	4,015,493	3,768,149	3,558,692	3,388,672	3,368,399	3,355,472
Payable Gold (oz)	(2)	8,800	-	-	376	343	347	352	348	358	368	379	389	398	398	399
Silver Revenue		\$ 2,471,306	\$ -	\$ -	\$ 127,810	\$ 144,142	\$ 137,179	\$ 132,805	\$ 135,206	\$ 128,744	\$ 122,745	\$ 115,184	\$ 108,781	\$ 103,584	\$ 102,965	\$ 102,569
Gold Revenue		\$ 13,565	\$ -	\$ -	\$ 565	\$ 516	\$ 525	\$ 542	\$ 539	\$ 554	\$ 569	\$ 587	\$ 602	\$ 615	\$ 616	\$ 617
<b>Gross Revenue</b>		<b>\$ 2,484,870</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 128,375</b>	<b>\$ 144,658</b>	<b>\$ 137,704</b>	<b>\$ 133,347</b>	<b>\$ 135,745</b>	<b>\$ 129,298</b>	<b>\$ 123,313</b>	<b>\$ 115,771</b>	<b>\$ 109,384</b>	<b>\$ 104,199</b>	<b>\$ 103,581</b>	<b>\$ 103,187</b>
Transportation and Treatment	(2)	\$ (50,588)	\$ -	\$ -	\$ (2,425)	\$ (2,853)	\$ (2,808)	\$ (2,737)	\$ (2,787)	\$ (2,653)	\$ (2,530)	\$ (2,374)	\$ (2,242)	\$ (2,135)	\$ (2,122)	\$ (2,114)
<b>Net Smelter Return</b>		<b>\$ 2,434,283</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 125,950</b>	<b>\$ 141,804</b>	<b>\$ 134,896</b>	<b>\$ 130,610</b>	<b>\$ 132,958</b>	<b>\$ 126,645</b>	<b>\$ 120,784</b>	<b>\$ 113,397</b>	<b>\$ 107,142</b>	<b>\$ 102,064</b>	<b>\$ 101,459</b>	<b>\$ 101,073</b>
Peruvian Production Royalty	(3)	\$ (35,666)	\$ -	\$ -	\$ (1,979)	\$ (2,454)	\$ (2,247)	\$ (2,118)	\$ (2,189)	\$ (1,999)	\$ (1,824)	\$ (1,668)	\$ (1,543)	\$ (1,441)	\$ (1,429)	\$ (1,421)
<b>Net Revenue</b>		<b>\$ 2,398,617</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 123,972</b>	<b>\$ 139,350</b>	<b>\$ 132,649</b>	<b>\$ 128,492</b>	<b>\$ 130,769</b>	<b>\$ 124,645</b>	<b>\$ 118,960</b>	<b>\$ 111,729</b>	<b>\$ 105,599</b>	<b>\$ 100,623</b>	<b>\$ 100,029</b>	<b>\$ 99,651</b>
Operating Expenses	(2)	\$ (816,631)	\$ -	\$ (9,533)	\$ (41,212)	\$ (43,076)	\$ (43,680)	\$ (42,715)	\$ (43,767)	\$ (42,291)	\$ (40,338)	\$ (37,185)	\$ (36,779)	\$ (31,770)	\$ (28,295)	\$ (28,294)
Initial Capital Expenses	(2)	\$ (72,485)	\$ (11,329)	\$ (61,156)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sustaining Capital Expenses	(2)	\$ (28,308)	\$ -	\$ -	\$ (497)	\$ (6,525)	\$ (449)	\$ (298)	\$ (5,940)	\$ (278)	\$ (187)	\$ (200)	\$ (205)	\$ (429)	\$ (5,000)	\$ (300)
Reclamation Capital Expenses	(2)	\$ (18,512)	\$ -	\$ -	\$ (4)	\$ (8)	\$ (12)	\$ (16)	\$ (20)	\$ (24)	\$ (28)	\$ (32)	\$ (36)	\$ (1,062)	\$ (2,089)	\$ (3,601)
<b>Employee Profit Sharing</b>	(4)	<b>\$ (118,830)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ (5,748)</b>	<b>\$ (6,787)</b>	<b>\$ (6,161)</b>	<b>\$ (5,901)</b>	<b>\$ (5,961)</b>	<b>\$ (5,665)</b>	<b>\$ (5,997)</b>	<b>\$ (5,796)</b>	<b>\$ (5,401)</b>	<b>\$ (5,411)</b>	<b>\$ (5,594)</b>	<b>\$ (5,558)</b>
<b>Pre-tax Cash Flows</b>		<b>\$ 1,343,852</b>	<b>\$ (11,329)</b>	<b>\$ (70,689)</b>	<b>\$ 76,511</b>	<b>\$ 82,954</b>	<b>\$ 82,348</b>	<b>\$ 79,563</b>	<b>\$ 75,081</b>	<b>\$ 76,388</b>	<b>\$ 72,410</b>	<b>\$ 68,517</b>	<b>\$ 63,178</b>	<b>\$ 61,950</b>	<b>\$ 59,051</b>	<b>\$ 61,898</b>
<b>Net Tax Expense</b>	(5)	<b>\$ (391,346)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ (1,465)</b>	<b>\$ (23,144)</b>	<b>\$ (21,671)</b>	<b>\$ (21,402)</b>	<b>\$ (22,076)</b>	<b>\$ (21,030)</b>	<b>\$ (20,190)</b>	<b>\$ (19,333)</b>	<b>\$ (17,978)</b>	<b>\$ (18,143)</b>	<b>\$ (18,873)</b>	<b>\$ (18,635)</b>
<b>After-tax Cash Flows</b>		<b>\$ 952,505</b>	<b>\$ (11,329)</b>	<b>\$ (70,689)</b>	<b>\$ 75,045</b>	<b>\$ 59,811</b>	<b>\$ 60,677</b>	<b>\$ 58,160</b>	<b>\$ 53,005</b>	<b>\$ 55,358</b>	<b>\$ 52,220</b>	<b>\$ 49,184</b>	<b>\$ 45,200</b>	<b>\$ 43,808</b>	<b>\$ 40,178</b>	<b>\$ 43,264</b>
IGV Recovered/ (Paid)	(6)	\$ 7,886	\$ (2,153)	\$ (13,431)	\$ 24,026	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Working Capital	(2)	\$ 0	\$ (440)	\$ (1,469)	\$ (13,746)	\$ (2,096)	\$ 864	\$ 486	\$ (429)	\$ 719	\$ 647	\$ 790	\$ 755	\$ 510	\$ (124)	\$ 163
<b>Net Cash Flows (Real)</b>		<b>\$ 960,391</b>	<b>\$ (13,922)</b>	<b>\$ (85,589)</b>	<b>\$ 85,325</b>	<b>\$ 57,714</b>	<b>\$ 61,540</b>	<b>\$ 58,646</b>	<b>\$ 52,576</b>	<b>\$ 56,078</b>	<b>\$ 52,867</b>	<b>\$ 49,974</b>	<b>\$ 45,955</b>	<b>\$ 44,317</b>	<b>\$ 40,054</b>	<b>\$ 43,427</b>
Discount factor	(7)		0.9754	0.9070	0.8244	0.7495	0.6813	0.6193	0.5629	0.5118	0.4652	0.4229	0.3844	0.3494	0.3177	0.2888
<b>Discounted Cash Flows (Real)</b>		<b>\$ 333,735</b>	<b>\$ (13,579)</b>	<b>\$ (77,626)</b>	<b>\$ 70,342</b>	<b>\$ 43,254</b>	<b>\$ 41,929</b>	<b>\$ 36,320</b>	<b>\$ 29,597</b>	<b>\$ 28,698</b>	<b>\$ 24,595</b>	<b>\$ 21,133</b>	<b>\$ 17,665</b>	<b>\$ 15,486</b>	<b>\$ 12,724</b>	<b>\$ 12,540</b>

**Notes:**

(1) See Figure 22.

(2) Per the RPA Extended Life Case.

(3) Calculated as 1.0% on the first \$60.0 million of NSR, 2.0% up to \$120.0 million, and 3.0% beyond. See Revised Feasibility Study, page 144 (FTI-06).

(4) Calculated at 8% of accounting net income before taxes. See Revised Feasibility Study, page 144 (FTI-06).

Accounting depreciation calculated based on 15.0% annual straight-line depreciation (halved in the first year of addition). See Revised Feasibility Study, page 144 (FTI-06).

(5) Calculated based on a 30.0% corporate income tax rate. See Revised Feasibility Study, page 144 (FTI-06).

Depreciation for tax purposes calculated at a 20.0% depreciation rate on undepreciated capital cost. See PWC, "Doing Deals in Peru 2011", page 13 (FTI-60).

Tax losses from years prior to 2012 are assumed to be \$14.4 million. See Revised Feasibility Study, page 144 (FTI-06).

(6) IGV credits calculated at 19.0% of costs and recuperated at 19.0% of gross revenue. IGV credit prior to 2012 is assumed to be \$8.4 million. See Revised Feasibility Study, page 144 (FTI-06).

(7) Calculated based on a discount rate of 10.0%. See Appendix 5.

**Schedule 2 (Cont'd)**

**Bear Creek Mining Corporation v. Republic of Peru**

**Discounted Cash Flow of the Santa Ana Project - Applying Futures Prices to the Long Term Period**

(in \$ thousands unless noted otherwise)

Description	Notes	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Silver Price (Real \$ per oz)	(1)	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57	\$ 30.57
Gold Price (Real \$ per oz)	(1)	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39	\$ 1,546.39
Payable Silver (oz)	(2)	3,155,070	3,127,329	3,127,329	3,127,329	3,127,329	3,127,329	3,127,329	3,127,329	3,127,329	3,008,016	1,664,871	181,344	-	-	-	-
Payable Gold (oz)	(2)	409	410	410	410	410	410	410	410	410	416	240	-	-	-	-	-
Silver Revenue		\$ 96,444	\$ 95,596	\$ 95,596	\$ 95,596	\$ 95,596	\$ 95,596	\$ 95,596	\$ 95,596	\$ 95,596	\$ 91,948	\$ 50,891	\$ 5,543	\$ -	\$ -	\$ -	\$ -
Gold Revenue		\$ 632	\$ 634	\$ 634	\$ 634	\$ 634	\$ 634	\$ 634	\$ 634	\$ 634	\$ 643	\$ 372	\$ -	\$ -	\$ -	\$ -	\$ -
Gross Revenue		\$ 97,075	\$ 96,230	\$ 96,230	\$ 96,230	\$ 96,230	\$ 96,230	\$ 96,230	\$ 96,230	\$ 96,230	\$ 92,591	\$ 51,263	\$ 5,543	\$ -	\$ -	\$ -	\$ -
Transportation and Treatment	(2)	\$ (1,988)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,970)	\$ (1,895)	\$ (1,049)	\$ (114)	\$ -	\$ -	\$ -	\$ -
Net Smelter Return		\$ 95,088	\$ 94,259	\$ 94,259	\$ 94,259	\$ 94,259	\$ 94,259	\$ 94,259	\$ 94,259	\$ 94,259	\$ 90,696	\$ 50,214	\$ 5,429	\$ -	\$ -	\$ -	\$ -
Peruvian Production Royalty	(3)	\$ (1,302)	\$ (1,285)	\$ (1,285)	\$ (1,285)	\$ (1,285)	\$ (1,285)	\$ (1,285)	\$ (1,285)	\$ (1,285)	\$ (1,214)	\$ (502)	\$ (54)	\$ -	\$ -	\$ -	\$ -
Net Revenue		\$ 93,786	\$ 92,974	\$ 92,974	\$ 92,974	\$ 92,974	\$ 92,974	\$ 92,974	\$ 92,974	\$ 92,974	\$ 89,482	\$ 49,712	\$ 5,375	\$ -	\$ -	\$ -	\$ -
Operating Expenses	(2)	\$ (29,312)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (34,011)	\$ (31,821)	\$ (14,473)	\$ -	\$ -	\$ -	\$ -	\$ -
Initial Capital Expenses	(2)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sustaining Capital Expenses	(2)	\$ (300)	\$ (300)	\$ (5,000)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ (300)	\$ -	\$ -	\$ -	\$ -
Reclamation Capital Expenses	(2)	\$ (65)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (820)	\$ (469)	\$ (741)	\$ (737)	\$ (733)	\$ (730)	\$ (726)
Employee Profit Sharing	(4)	\$ (4,997)	\$ (4,550)	\$ (4,511)	\$ (4,472)	\$ (4,474)	\$ (4,535)	\$ (4,575)	\$ (4,573)	\$ (4,571)	\$ (4,514)	\$ (2,732)	\$ (347)	\$ -	\$ -	\$ -	\$ -
Pre-tax Cash Flows		\$ 59,111	\$ 53,293	\$ 48,632	\$ 53,371	\$ 53,369	\$ 53,308	\$ 53,269	\$ 53,271	\$ 53,272	\$ 52,027	\$ 31,738	\$ 4,287	\$ (737)	\$ (733)	\$ (730)	\$ (726)
Net Tax Expense	(5)	\$ (16,831)	\$ (15,470)	\$ (15,444)	\$ (15,426)	\$ (15,542)	\$ (15,618)	\$ (15,681)	\$ (15,741)	\$ (15,790)	\$ (15,455)	\$ (9,304)	\$ (1,104)	\$ -	\$ -	\$ -	\$ -
After-tax Cash Flows		\$ 42,280	\$ 37,823	\$ 33,188	\$ 37,945	\$ 37,826	\$ 37,690	\$ 37,588	\$ 37,529	\$ 37,482	\$ 36,572	\$ 22,434	\$ 3,183	\$ (737)	\$ (733)	\$ (730)	\$ (726)
IGV Recovered/ (Paid)	(6)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (140)	\$ (139)	\$ (139)	\$ (138)
Change in Working Capital	(2)	\$ 483	\$ 336	\$ (150)	\$ (9)	\$ (9)	\$ (9)	\$ (9)	\$ (9)	\$ (9)	\$ 349	\$ 4,031	\$ 4,637	\$ 3,637	\$ -	\$ 100	\$ -
Net Cash Flows (Real)		\$ 42,763	\$ 38,159	\$ 33,038	\$ 37,936	\$ 37,817	\$ 37,681	\$ 37,579	\$ 37,520	\$ 37,473	\$ 36,922	\$ 26,465	\$ 7,820	\$ 2,760	\$ (873)	\$ (768)	\$ (864)
Discount factor	(7)	0.2625	0.2386	0.2169	0.1972	0.1792	0.1629	0.1481	0.1346	0.1224	0.1113	0.1011	0.0919	0.0836	0.0760	0.0691	0.0628
Discounted Cash Flows (Real)		\$ 11,224	\$ 9,105	\$ 7,167	\$ 7,480	\$ 6,778	\$ 6,140	\$ 5,566	\$ 5,052	\$ 4,586	\$ 4,108	\$ 2,677	\$ 719	\$ 231	\$ (66)	\$ (53)	\$ (54)

**Notes:**

- (1) See Figure 22.
- (2) Per the RPA Extended Life Case.
- (3) Calculated as 1.0% on the first \$60.0 million of NSR, 2.0% up to \$120.0 million, and 3.0% beyond. See Revised Feasibility Study, page 144 (FTI-06).
- (4) Calculated at 8% of accounting net income before taxes. See Revised Feasibility Study, page 144 (FTI-06).  
Accounting depreciation calculated based on 15.0% annual straight-line depreciation (halved in the first year of addition). See Revised Feasibility Study, page 144 (FTI-06).
- (5) Calculated based on a 30.0% corporate income tax rate. See Revised Feasibility Study, page 144 (FTI-06).  
Depreciation for tax purposes calculated at a 20.0% depreciation rate on undepreciated capital cost. See PWC, "Doing Deals in Peru 2011", page 13 (FTI-60).  
Tax losses from years prior to 2012 are assumed to be \$14.4 million. See Revised Feasibility Study, page 144 (FTI-06).
- (6) IGV credits calculated at 19.0% of costs and recuperated at 19.0% of gross revenue. IGV credit prior to 2012 is assumed to be \$8.4 million. See Revised Feasibility Study, page 144 (FTI-06).
- (7) Calculated based on a discount rate of 10.0%. See Appendix 5.