IN THE MATTER OF AN ARBITRATION UNDER CHAPTER 11 OF THE NORTH AMERICAN FREE TRADE AGREEMENT AND THE UNCITRAL RULES (1976)

ICSID CASE NO. UNCT/20/1

ODYSSEY MARINE EXPLORATION, INC. (USA)

Claimant

v.

THE UNITED MEXICAN STATES

Respondent

Claimant's Post-Hearing Brief

12 September 2022

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I. INTRODUCTION

1. Claimant Odyssey Marine Exploration, Inc. ("**Claimant**" or "**Odyssey**") hereby submits its Post-Hearing Brief in this arbitration brought by Odyssey on its own behalf and on behalf of Exploraciones Oceánicas S. de R.L. de CV ("**ExO**") against the United Mexican States ("**Respondent**" or "**Mexico**") under Chapter 11 of the North American Free Trade Agreement ("**NAFTA**").[1]

2. The specific questions asked by the Tribunal in its letter to the parties of 24 May 2022 are answered at the appropriate places in this submission (on each occasion noting the specific question that is addressed). The guide in Appendix One identifies the paragraphs where each question is answered. Appendix Two provides a chronology of key events with associated citations to the record as a reference aide for the Tribunal.[2]

3. Mexico accepts,[3] and the Tribunal should decide, that [redacted] directly participated in Mexico's review of Odyssey's application for an environmental permit for the Don Diego Project (**"MIA**") and would normally have determined whether the MIA would be approved.

4. The Tribunal should accept the first-hand testimony [redacted] that: (i) they had decided to approve the MIA on the condition that ExO's proposed mitigation measures would be implemented;[4] (ii) this decision was overruled by Secretary

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1 Unless otherwise noted, terms defined in prior submissions retain those definitions and are reiterated here for convenience. To assist the Tribunal in its review of the evidence cited in this Post-Hearing Brief, Claimant has included cross-references to the English versions of documents and testimony that were originally presented in Spanish, including hearing transcripts.

2 Claimant includes Appendix 2 in lieu of a separate fact section given the extensive briefing and presentation on these issues over the course of these proceedings. *See* Claimant's Memorial, Section II; Claimant's Reply, Section II; **CD-0001**, Claimant's Opening Presentation, pp. 3-62.

3 *See, e.g.*, Respondent's Counter-Memorial, ¶¶ 187-198, 365-374; Respondent's Rejoinder, ¶¶ 122-123, 127-134; Pacchiano WS1, ¶¶ 20, 34-36; Second Witness Statement of Rafael Pacchiano Alamán, dated 11 October 2021 ("**Pacchiano WS2**"), ¶¶ 8-16.

4 *See* Transcript of Day 7 of Hearing ("**Hrg. Day 7 Tr.**"), [redacted], 10 May 2022, pp. 1806:17-1807:5, 1807:22-1809:16, 1811:21-1812:17 (Spanish Tr.), pp. 1624:15-22, 1625:14-1626:19, 1628:12-1629:3 (English Tr.); Transcript of Day 2 of Hearing ("**Hrg. Day 2 Tr.**"), [redacted], 25 January 2022, pp. 314:14-315:7 (Spanish Tr.), pp. 370:10-271:2 (English Tr.); [redacted]

Pacchiano, who ordered them to "find a reason to deny the MIA"[5] for his own personal and political reasons, rather than because he disagreed with the substance of their decision; and (iii) Secretary Pacchiano's intervention resulted in the ultimate denial of ExO's MIA in breach of NAFTA.[6]

5. In doing so, the Tribunal should further reject Mexico's contentions that [redacted] the MIA should be denied (for which there is no evidence of any kind)[7] and that Secretary Pacchiano had nothing to do with the making of the decision.[8] This is not a case where a government minister disagreed with the substance of a decision recommended to him by his subordinates and lawfully exercised his authority to choose a different result. Rather, Mexico insists that no intervention ever occurred—wrongful or otherwise.

6. Mexico's defense is based entirely on the testimony of a solitary contemporary witness: Secretary Pacchiano, who maintains that he had no involvement whatsoever in the process for determining whether the MIA would be granted. Mexico should have been able to provide the Tribunal with any number of other witnesses who were (or still are) employed by SEMARNAT and possess contemporaneous, first-hand knowledge of the MIA determination processes, were there any truth to Secretary Pacchiano's testimony.

7. Mexico has not, for example, proffered testimony from Undersecretary Martha Garcíarivas Palmeros, whom [redacted] as the person who relayed Secretary Pacchiano's instructions to deny the MIA.[9] Nor has it proffered evidence from Attorney Consuelo Juárez, who participated in the drafting of

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5 [redacted]

6 [redacted] Hrg. Day 7 Tr., [redacted] 10 May 2022, pp. 1806:17-1807:5, 1807:22-1809:16, 1811:21-1812:17 (Spanish Tr.), pp. 1624:15-22, 1625:14-1626:19, 1628:12-1629:3 (English Tr.); Hrg. Day 2 Tr., [redacted] 25 January 2022, pp. 314:14-315:7, 315:19-316:7, 316:18-317:15 (Spanish Tr.), pp. 370:10-271:2, 271:12-20, 272:9-273:1 (English Tr.).

7 Respondent's Counter-Memorial, ¶¶ 176-180, 196-198; Respondent's Rejoinder, ¶¶ 122-142.

8 Pacchiano WS1, ¶¶ 12-14, 21-36, 40, 46; Pacchiano WS2, ¶¶ 7, 13-14, 17, 19, 21-22.

9 Claimant's Memorial, ¶ 147, fn. 340; [redacted] Hrg. Day 2 Tr., [redacted] 25 January 2022, pp. 316:18-317:9 (Spanish Tr.), p. 272:9-19 (English Tr.); [redacted] Hrg. Day 7 Tr., [redacted] 10 May 2022, pp. 1809:3-16, 1811:21-1812:17 (Spanish Tr.), pp. 1626:11-19, 1628:12-1629:3 (English Tr.).

both the First and Second Denials and is currently Mr. Pacchiano's partner in his new firm.[10] Neither has Mexico proffered evidence from [redacted],[11] nor from any of the other officials involved in the evaluation and determination of the MIA. That is, Mexico failed to produce a single witness to corroborate Secretary Pacchiano's story. As discussed below, his testimony is riddled with contradictions and is simply not credible.

8. Moreover, Mexico has not produced any contemporaneous internal documentary evidence to support the purported integrity of SEMARNAT's evaluation of the MIA in either instance or the drafting of its Denials—whether of its own accord or in response to Odyssey's requests for production.

9. In sharp contrast to Mexico's meager evidentiary showing, [redacted] are corroborated by contemporaneous documents and events, including:

   a. Contemporaneous evidence from several witnesses, as well as contemporaneous documents confirming [redacted];[12]

   b. The Tribunal de Justicia Administrativa's ("**TFJA**") unanimous decision annulling the First Denial on the basis that SEMARNAT ignored or failed to evaluate key aspects of the MIA and the evidence filed in support of it;[13]

   c. SEMARNAT's "*tarjeta informativa*" (a press release) stating that the MIA would be denied for a second time, which was issued just three working days after SEMARNAT was notified of the TFJA's ruling quashing the First Denial and directing SEMARNAT to properly reevaluate the MIA.[14] It is obvious that no proper reevaluation could have been performed by SEMARNAT in just three days. This

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10 Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 348:19-349:16 (Spanish Tr.), pp. 299:12-300:7 (English Tr.); Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1811:21-1812:12 (Spanish Tr.), p. 1628:12-22 (English Tr.).

11 [redacted] *see* **C-0008**, SEMARNAT Denial Decision, 7 April 2016, p. 236 (Spanish), p. 235 (English); *and* **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 519 (Spanish), p. 516 (English) (showing [redacted]).

12 The testimonies of Dr. Lozano, Dr. Newell, and Mr. Gordon also corroborate several aspects [redacted]

13 *See infra,* Section II.B.6, ¶¶ 94-100; Claimant's Memorial, ¶¶ 165-166, 173; Claimant's Reply, ¶¶ 109, 120-121, 212; **C-0170**, TFJA Ruling, 21 March 2018. The press reported that SEMARNAT was not notified until mid-April 2018. **C-0171**, E. Méndez, "Negarán dragado de arena en Ulloa; resolución de la Semarnat," Excelsior, 19 April 2018.

14 *See infra,* Section II.B.6, ¶¶ 101-108; **C-0470**, Informational Note (Tarjeta Informativa), 18 April 2018.

press release supports [redacted] that there was no proper scientific reevaluation of the MIA following the TFJA ruling. Instead, SEMARNAT officials merely obeyed Secretary Pacchiano's orders as reflected in the *tarjeta informativa*;

d. SEMARNAT's improper refusal, when first asked by ExO to formally review the First Denial, to take into account expert papers submitted by ExO for spurious reasons. The TFJA criticized this decision in strident terms: "such actions of the defendant authority constitute an arbitrariness that violates the norms of due process, to [ExO's] detriment."[15] Additionally, SEMARNAT failed to consider these expert reports in the Second Denial, even after the TFJA's admonishment;[16]

e. Key aspects of the Denials themselves—for example, SEMARNAT's reliance in both Denials on grossly inflated turtle density figures, even though Mexico has since admitted their inaccuracy in the TFJA proceedings;[17] and

f. The political environment in which the decision was made.[18]

10. To be clear, Odyssey is not asking the Tribunal to sit as an appellate Tribunal, nor is it asking the Tribunal to evaluate the environmental evidence afresh. The Tribunal's role is to determine whether Secretary Pacchiano's unlawful instruction breaches the investment protections contained in Chapter 11 of NAFTA. If the Tribunal finds that Mexico's determination of the MIA was arbitrary, discriminatory, or otherwise not taken in good faith, it is no defense that international law recognizes a State's right to exercise police powers to enforce environmental policy decisions.[19] This means:

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15 **C-0170**, TFJA Ruling, 21 March 2018, p. 186 (English), p. 201 (Spanish) ("dicho proceder de la autoridad demandada constituye una arbitrariedad conculcatoria de las normas del debido proceso, en [el] perjuicio [de ExO].") (original emphasis removed).

16 **C-0170**, TFJA Ruling, 21 March 2018, p. 208 (Spanish) ("Por lo tanto, le **asiste la razón** a la parte actora en el sentido que la autoridad vulneró su derecho al debido proceso, ya que en relación a la prueba pericial ofrecida por la recurrente, la autoridad ordenó su desechamiento hasta el momento en el que resolvió el recurso de revisión interpuesto por esta; no obstante que, en términos de las disposiciones que regulan la tramitación y substanciación del citado medio de defensa, debió haber tramitado y en su caso, desahogado las pruebas correspondientes, conforme a derecho procediera."), p. 191 (English) ("Therefore, the plaintiff is right in the sense that the authority violated its right to due process, since in connection with the expert evidence provided by the appellant, the authority ordered its dismissal until the time it resolved the appeal for review filed by the appellant; notwithstanding that, in terms of the provisions that regulate the processing and substantiation of the aforementioned means of defense, it should have processed and, if applicable, submitted the corresponding evidence, in accordance with the law.").

17 *See infra,* Section II.B.5.b, ¶¶ 75-78.

18 *See* Claimant's Memorial, ¶¶ 8, 118-119, 129-132, 157, 177-178, 219-221, 251, 257; Claimant's Reply, ¶¶ 93-118; *infra*, ¶¶ 59-65.

19 *See* Claimant's Reply, ¶¶ 214-234.

a. (Answering Tribunal Question 3), the "margin of appreciation" doctrine has no bearing on the present case because the conduct at issue falls outside of the State's authority to make and apply environmental policy and, in any event, this doctrine is not customary international law;[20]

b. (Answering Tribunal Question 4), the Tribunal is not itself required to form a view as to the environmental impacts of the Don Diego Project, much less to substitute its view for that adopted by Mexican authorities. Rather, the Tribunal is called to determine whether NAFTA standards were breached because of Secretary Pacchiano's interventions and the discriminatory and arbitrary treatment that Claimant received; and

c. Mexico's argument that the Tribunal need only decide if the Denials were reasonable must be rejected because it invites the Tribunal to do exactly what Mexico says it must not do, namely evaluate the substance of these decisions.

11. Unable to offer any contradictory testimony to the Tribunal (save for the self-serving testimony of Secretary Pacchiano)—[redacted][21]—Mexico has sought to discredit them with personal attacks and baseless, misleading accusations.[22] As explained elsewhere and below, there is no substance to any of these assertions.[23]

12. Mexico has similarly attempted to impugn Odyssey's reputation with specious and irrelevant allegations that Odyssey lacked the financial resources or technical expertise to execute the Project.[24] These allegations must be rejected outright because they formed no part of SEMARNAT's reasoning for denying ExO's MIA, including the pretextual reasons that Secretary Pacchiano forced SEMARNAT officials to conjure in order to issue those Denials. In any event, Mexico has not even mounted a serious effort to support them; uncontroverted evidence establishes that Odyssey enlisted a consortium of world-class dredging and environmental experts to develop and execute environmentally sustainable and proven dredging operations, including Boskalis Offshore (part of Royal Boskalis

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20 Claimant does not accept that the margin of appreciation doctrine even has widespread acceptance in international investment law. *See* Answer to Tribunal Question No. 3, *infra*, ¶¶ 127-129.

21 *See generally* Claimant's Interim Measures Request; Claimant's Reply, ¶¶ 145-171.

22 *See generally* Claimant's Interim Measures Request; Claimant's Reply, ¶¶ 145-171.

23 *See infra*, ¶¶ 31-33.

24 *See* Respondent's Counter-Memorial, ¶¶ 18-27, 44-63.

Westminster) ("**Boskalis**"), Mr. Craig Bryson, Dr. Richard Newell, and Dr. Doug Clarke, among other specialist experts retained during the development of Odyssey's plans for the Project and the MIA.[25]

13. Mexico's response to Odyssey's damages case has unfolded as a similar exercise in unsupported sideshows and a persistent failure to meet the evidence. Odyssey has shown that as of the Valuation Date,[26] ExO held concessions to an exceptional phosphate deposit whose size, quality, and undeniable commercial potential was established by volumes of reliable data generated by industry-leading independent analysts like Florida Industrial and Phosphate Research Institute ("**FIPR**")[27] and Jacobs Engineering,[28] and validated by Mr. Henry Lamb, one of the world's most reputable phosphate Qualified Persons.[29] To execute the Project, Odyssey had partnered with Boskalis, one of the largest and most experienced multinational dredging and materials processing companies, and Mr. Bryson, a mining engineer and Project Manager with extraordinary depth and breadth of expertise in offshore mining and minerals processing.[30]

14. Preeminent technical experts in marine geology, geostatistical analysis, dredging operations, phosphate materials processing, structural engineering, and phosphate marketing and pricing examined the data and business planning as it existed on the Valuation Date. They confirmed that the Don Diego Project was at a pre-feasibility study level of development, would have been among the lowest-cost producers of phosphate

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25 For a discussion of these and other experts and their roles in the Don Diego Project, *see* Claimant's Memorial, ¶¶ 62-65, 91-92, 94, 96-97, 99-100, 103-104; Transcript of Day 1 of Hearing ("**Hrg. Day 1 Tr.**"), Claimant's Opening Statement, 24 January 2022, pp. 25:18-27:21; **CD-0001**, Claimant's Opening Presentation, pp. 14-23, 32-36.

26 The Valuation Date is 7 April 2016, the date on which ExO received SEMARNAT's First Denial. **C-0008,** SEMARNAT Denial Decision, 7 April 2016; Lozano WS1, ¶¶ 69, 72. The Valuation Date and response to Mexico's erroneous claim that the Valuation Date should be fixed a day earlier are discussed *infra,* at ¶¶ 198-201 and Claimant's Reply, ¶¶ 341-342.

27 *See* Claimant's Memorial, ¶¶ 46-48; **C-0084,** Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 36-41; Hrg. Day 1 Tr., Claimant's Opening Statement, 24 January 2022, p. 26:6-15.

28 *See, e.g.,* **C-0469**, Jacobs Engineering, Bench Scale Phosphoric Acid Pilot Plant Testing, May 19, 2015.

29 *See* Claimant's Memorial, ¶¶ 47-48; **C-0459**, Henry James Lamb CV, 21 June 2021; **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014; Agrifos ER, ¶ 23; Gruber ER2, p. 7; Hrg. Day 1 Tr., Claimant's Opening Statement, 24 January 2022, pp. 25:18-26:5.

30 Bryson WS1, ¶¶ 2-12, 25-40; Claimant's Memorial, ¶¶ 58-59, 61-65, 68; **CD-0001**, Claimant's Opening Presentation, pp. 19; Hrg. Day 1 Tr., Claimant's Opening Statement, 24 January 2022, pp. 26:16-27:21.

rock products anywhere in the world, and would have profitably sold its planned product volumes into the global market without difficulty due to its extremely competitive profile.[31]

15. Guided by these experts' analyses and using their validated cost, production, and price inputs, Odyssey's valuation expert Compass Lexecon determined the Fair Market Value ("**FMV**") of the Don Diego Project using industry-standard Income Approaches—a Discounted Cash Flow ("**DCF**") Method for Phase I of the Project, and a Real Options Valuation ("**ROV**") Method for Phase II—arriving at a total value of [redacted].[32]

16. Odyssey tested this figure with a valuation by Agrifos, a leading owner, operator, and investor in phosphate projects worldwide, which used an industry-standard Market Approach—the Comparable Transactions Method—to independently value the Project at [redacted], corroborating Compass Lexecon's valuation.[33] CIMVAL considers all of Claimant's methods as "primary" valuation methods.[34]

17. Importantly, two aspects of valuing the Project are not captured by Compass Lexecon's DCF or Agrifos' market comparable approach. The first is the Project's strategic value because of its low-cost profile, world class multigenerational resource, and location in Western North America, with easy, unobstructed access to all Pacific Rim markets. The second is the lost opportunity to further explore and develop the vast, homogenous Don Diego Deposit. As discussed in further detail below, full reparation also requires that these heads of loss be awarded.[35]

18. In its response on quantum, Mexico and its experts continue to pretend that the substantial evidence put forth by Claimant does not exist. As the hearing laid bare, Mexico's response rests on mischaracterizations, red herring arguments, and

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31 *See* Claimant's Memorial, ¶¶ 387, 397(c)-(d), and evidence cited therein; Claimants' Reply, ¶¶ 385, 438, 452, 471-473, and evidence cited therein; **CD-0004**, Expert Presentation of Agrifos Partners LLC ("**Agrifos**"), pp. 14, 16-17; and *infra,* Section VI.D and ¶¶ 195, 219, 223.

32 Compass Lexecon ER1, Sections IV-VII; Compass Lexecon ER2, ¶ 26, Table 1.

33 Agrifos ER, ¶ 21.

34 **C-0196**, CIMVAL Standards 2003, p. 22-23, Table 2.

35 *See also* Claimant's Memorial, Sections V.C.4-V.C.5; Claimant's Reply, Sections V.H-V.I.

unsupported assertions, emanating from demonstrably unreliable experts, which shifted over the course of the case as each successive theory proved as untenable as the last. To begin with, Mexico elected not to challenge any of Odyssey's technical experts' qualifications or conclusions on cross-examination by calling them to appear at the hearing. Mexico's technical experts, Watts, Griffis and McOuat, Limited ("**WGM**") and Taut Solutions, Ltd. ("**Taut**"), studiously avoided engaging with much of this evidence and offered no independent data analysis to compete with Odyssey's experts' DCF inputs—no alternative resource estimates or geostatistical models of the deposit, no CAPEX or OPEX figures for dredging or processing costs, and no production volume or quality estimates.

19. Instead, Mexico's technical experts repeatedly made sweeping, erroneous claims that were both unsupported and well outside their respective fields of expertise—all with the obvious aim of arriving at the lowest figure for compensation. Examples of these include:

a. WGM opined on dredging and marine mineral operations[36] while having no expertise in these fields.[37] When this was called out,[38] they brought in Taut,[39] which then admitted it also had no expertise in these fields.[40]

b. WGM opined on phosphate pricing and marketing while not being qualified in this area, either.[41] It further emerged that in WGM's own technical reports for phosphate projects, they rely on Claimant's market expert, CRU, for this analysis.[42]

c. WGM claimed the available data was insufficient to declare a Mineral Resource[43] because, among other things, geostatistical variograms had not been created by

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36 WGM ER1, ¶¶ 104-109.

37 Transcript of Day 5 of Hearing ("**Hrg. Day 5 Tr.**"), Testimony of WGM, 28 January 2022, p. 1113:9-16: "Q. (Ms. Thorn) Okay. And to be clear, WGM isn't here holding themselves out as dredging experts, are they? A. (Mr. Hinzer) Certainly not." *See also* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1112:9-16.

38 Claimant's Reply, ¶¶ 326, 439.

39 Second Expert Report of Watts, Griffis and McOuat Limited, dated October 19, 2021 ("**WGM ER2**"), ¶¶ 76-77, 82-84.

40 Hrg. Day 5 Tr., Testimony of Taut Solutions, 28 January 2022, pp 1232:22-1237:20.

41 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1115:2-6, 1118:6-10, 1121:7-10, 1126:18-1127:8.

42 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 104 (relying on "[t]he recent independent CRU International Limited ('CRU') market review" prepared for the project).

43 A Mineral Resource is defined as "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

the Valuation Date.[44] Not only did WGM later admit this was false and that variograms existed (which WGM had actually received, but ignored),[45] but WGM also admitted that it is "quite common" to declare Mineral Resources without variograms at all, and that WGM does this in their own technical reports for phosphate projects,[46] rendering the entire premise for WGM's argument untrue.

d. WGM made fundamental, obvious errors that destroyed their conclusions, ranging from misreading tables by confusing absolute numbers for percentages,[47] making basic arithmetic mistakes that resulted in artificially low price figures,[48] and confusing "Itafos" for "Agrifos" when leveling a misguided criticism at one of Odyssey's experts.[49]

e. WGM claimed two phosphate shipments to India in November 2016 were representative of Egyptian spot prices for that year[50] even though WGM admitted that: November had been the month with the lowest phosphate prices; the two shipments represented only 0.14% of Egyptian phosphate exports that year; it did not know the product grade for one of the shipments; and it did not have access to Egyptian price trading data for that year and therefore could not opine on whether those sales were fairly representative.[51]

20. These examples and the others discussed in greater detail below—including WGM's willingness to opine in areas well beyond its field of expertise—are severe enough to call into question the reliability and credibility of WGM as an expert in these proceedings. As such, its conclusions should be disregarded.

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and knowledge, including sampling." **IS-0006**, CIM Definition Standards for Mineral Resources & Mineral Reserves (Canada), 19 May 2014, p. 4.

44 WGM ER1, ¶¶ 65-66.

45 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1188:18-1190:17, discussing **C-0201**, Mining Resource Model, February 2014.

46 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1191:12-1192:12.

47 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1185:11-1188:17.

48 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1143:8-1144:14.

49 *See, e.g.*, Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1163:7-1166:12; **WGM-47**, GB Minerals Limited, Press releases dated November 28, 2017, and February 23, 2018, p. 5 (referencing "Itafos," not "Agrifos"); Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1283:21-1284:10 ("WGM observed that Agrifos--or its associates had equity or management interests in GB Minerals and Aguia resources. I'm not sure where that--how they came to that conclusion. It's absolutely incorrect. None of the Agrifos principals, or employees for that matter, have ever had any interests of any kind--equity, ownership, management, directorships of any kind--with those two entities. If there was confusion with Itafos, a totally different company, then I would say the same is true of Itafos. We've never had any of those kind of associations with Itafos either.").

50 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1161:7-11.

51 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1160:3-1161:11.

21. The same issues pervade the evidence of Mexico's valuation expert, Dr. Daniel Flores of Quadrant Economics, who not only builds on WGM's inherently unreliable opinions for many of his conclusions, but who also betrays the same results-driven approach that abandons any pretense of independence, methodological principle, or rigor. A selection of Dr. Flores' critical errors and omissions includes:

a. In his first report, Dr. Flores argued that Odyssey's market capitalization should be valued as of 29 February 2016 (rather than the much higher stock price on the Valuation Date). To justify selecting that date, he claimed that a TV series, *Billion Dollar Wreck*, had created market "buzz" that led to an increase in Odyssey's share price even though Odyssey had no involvement with the series, no ties to its production, and was not even *mentioned* in any of the episodes. Dr. Flores even went so far as to opine that it was "the only plausible explanation" for an increase in Odyssey's share price.[52] When confronted with the absurdity of this position, including the well-documented market anticipation that SEMARNAT's decision was imminent,[53] Dr. Flores abandoned his theory using excuses that eviscerated his credibility.

b. ***First,*** Dr. Flores made the incredible claim that neither he nor anyone on his research team had been able to locate the press releases and analyst coverage showing the market was focused on SEMARNAT's impending Don Diego decision. This is impossible to believe given the lengths to which Dr. Flores and his team obviously went to churn up the three passing references to Odyssey in obscure internet chat rooms discussing *Billion Dollar Wreck,* upon which his entire market capitalization analysis was based.[54] In addition, it also strongly suggests that in approaching this assignment, Dr. Flores began with a conclusion that would yield a low valuation and then cast around for any information, no matter how insubstantial, to support it.

c. ***Second***, when admitting his first theory was wrong and adopting the view that the increase in Odyssey's stock price related to Don Diego, he wholly reversed himself on the basic question of what portion of Odyssey's market capitalization was attributable to Don Diego versus its legacy shipwreck business. This unprincipled, results-driven flip-flop conveniently ensured his Project valuation would remain artificially low.

d. Dr. Flores applied unprecedentedly steep risk premiums to further drive down his valuation of the Project using justifications lacking any serious academic support,

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52 Claimant's Reply, ¶¶ 514-524.

53 Claimant's Reply, ¶¶ 517-526.

54 Claimant's Reply, ¶ 515.

including discounts based solely on a teaching assistant's unpublished (and now deleted) class notes,[55] which he made no effort to defend at the hearing.[56]

e. In claiming that CIMVAL and VALMIN[57] categorically forbid using an Income Approach to value the Don Diego Project because it was allegedly still in the exploration stage, Dr. Flores ignored how they treat projects at a Mineral Resource/Pre-Development stage, which undoubtedly applies to the Project (if not the Development stage), and which permits the Income Approach in cases such as this.[58]

22. When Dr. Flores' cynical approach is recognized, it is easy to understand—and discard—his artificially low valuation that relies solely on a secondary Market Capitalization Method full of unsupported risk adjustments and counter-factual assumptions. Coextensive with Dr. Flores abandoning the *Billion Dollar Wreck* theory for Market Capitalization, Mexico then raised, for the first time in its Rejoinder, the possibility of using a sunk costs approach (referred to herein as the Cost Approach) for valuation.[59] To be clear, the Tribunal should disregard this argument—not only because it is grossly improper to advance a new damages argument in the final written submission with no opportunity for Odyssey to respond, but also because Dr. Flores ***explicitly rejected*** using sunk costs in his first expert report, where he stated that "[s]unk costs are not an indicator of the FMV of the Project, as value is a forward-looking concept that does not depend on how much was spent in the past."[60]

23. For the reasons set out in Section IV below, and as discussed in Section V of Claimant's Memorial and Section V of Claimant's Reply, full reparation requires an award of [redacted] as calculated by Compass Lexecon using a discounted cash flow analysis, plus a strategic value premium on that amount [redacted] reflecting the value of the lost opportunity to explore and develop the entirety of the

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55 Compass Lexecon ER2, ¶ 94.

56 *See infra*, ¶¶ 318-312.

57 CIMVAL (Canadian Institute of Mining, Metallurgy and Petroleum) and VALMIN (the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists) are the leading guidelines and standards in the mining industry for the valuation of mineral properties. *See infra,* ¶ 215.

58 *See infra*, ¶¶ 236-240.

59 Respondent's Rejoinder, ¶ 457.

60 Quadrant ER1, ¶ 12.

Concession, plus annually compounded pre-award interest at the rate of 13.95% (using the weighted average cost of capital ("**WACC**") of a typical investor in a pre-operation mining project in Mexico). In total, Claimant's damages claim exceeds **US$ 2.4 billion** (net of taxes), which must either be grossed up or accompanied by an order that Mexico may not tax or attempt to tax the award, or otherwise must indemnify Claimant for any Mexican taxes imposed on the award. If damages are awarded using a pre-tax DCF, the claim is over **US$ 3.1 billion**.

II. MEXICO BREACHED ARTICLE 1105 OF NAFTA

A. The Legal Standard of Article 1105

24. The parties agree that the applicable standard under NAFTA Article 1105 is the one described by the tribunal in *Waste Management II v. Mexico*.[61] As elaborated by that tribunal, the MST standard:

a. Protects foreign investors against arbitrary or discriminatory treatment of their investments;[62]

b. Requires the State to accord due process to foreign investors and their investments, which includes the principle of transparency;[63]

c. Mandates the good faith exercise of regulatory authority in relation to foreign investors and their investments;[64] and

d. Provides a remedy to investors whose legitimate expectations have gone unheeded with respect to the host State's treatment of their investments.[65]

25. As Claimant explained in its Reply Memorial: "these concepts are not causes of action; they are merely lenses, each grounded in canonical sources of public international law, that are available to assist tribunals in construing what 'fair and equitable treatment' means in any given context. It is also submitted that it is manifest that, regardless of

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61 *See* Claimant's Memorial, ¶¶ 228-229, 233-241; Respondent's Counter-Memorial, ¶¶ 449-451; Claimant's Reply, ¶¶ 177, 185-190; Respondent's Rejoinder, ¶ 351.

62 *See* Claimant's Memorial, ¶¶ 228-229, 233-241; Claimant's Reply, ¶¶ 177, 185-190.

63 *See* Claimant's Memorial, ¶¶ 228-229, 242-243; Claimant's Reply, ¶¶ 177, 191-192.

64 *See* Claimant's Memorial, ¶¶ 228-229, 230-232; Claimant's Reply, ¶¶ 177, 179-184.

65 *See* Claimant's Memorial, ¶¶ 228-229, 244-247; Claimant's Reply, ¶¶ 177, 201-205.

which lens is chosen here, the same picture is revealed: treatment that was neither fair nor equitable as adjudged by international standards."[66]

26. To establish a breach of NAFTA Article 1105 FET standard of treatment, it is sufficient to show that the State has not complied with any one of these principles.[67] In this case, Mexico's conduct was arbitrary, discriminatory, manifestly inconsistent with the principle of due process or the associated principle of transparency, and inconsistent with the principle of good faith, because Secretary Pacchiano's intervention constituted an abuse of ExO's rights and failed to honor the legitimate expectations of any participant in the MIA process in Mexico.

B. The Evidence Establishes That Mexico's Denial of the MIA Was Manifestly Arbitrary

27. Secretary Pacchiano's intervention in the decision-making process for ExO's MIA was manifestly arbitrary and was not based on substantive environmental or legal considerations. [redacted], at the end of the environmental impact assessment, the DGIRA was ready to approve the Don Diego Project; however, the technical team's judgment was overridden by a directive from Secretary Pacchiano which was based on political considerations and personal animus, and not on legitimate environmental concerns.[68] This conduct is the epitome of arbitrary treatment.[69] This is because the decisions to deny the MIA were not "founded on reason or fact, nor on the law,"[70] but were instead "made for purely extraneous political reasons."[71] Accordingly,

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66 Claimant's Reply, ¶ 179 (internal citations omitted).

67 *See* Claimant's Reply, ¶¶ 175-192.

68 *See* Hrg. Day 7 Tr., [redacted] 10 May 2022, pp. 1806:17-1807:5, 1807:22-1809:16 (Spanish Tr.), pp. 1624:15-22, 1625:14-1626:19 (English Tr.); Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 314:14-315:7, 315:17-316:6 (Spanish Tr.), pp. 270:10-271:2, 271:10-20 (English Tr.); [redacted]

69 **CL-0031**, *Cervin Investissements S.A. and Rhone Investissements S.A. v. Republic of Costa Rica* (ICSID Case No. ARB/13/2) Award, 7 March 2017, ¶ 523: "In accordance with the foregoing, the Tribunal will adopt in the present case the interpretation according to which arbitrary conduct is that which does not follow the law, justice or reason, but is solely based on caprice."

70 **CL-0097**, *Ronald S. Lauder v. The Czech Republic* (UNCITRAL) Final Award, 3 September 2001, ¶ 232.

71 **CL-0020**, *BP Exploration Company (Libya) Limited v. Government of Libyan Arab Republic* (Ad Hoc Arbitration) Final Award of Arbitrator, 10 October 1973, ¶ 111.

Mexico's denials were an "unexpected and shocking repudiation of a policy's very purpose and goals,"[72] and thus arbitrary treatment as confirmed by the evidence in the record.[73]

1. The Unrebutted Testimony [redacted] Establishes That the MIA Was Denied for Illegitimate Reasons

28. The Tribunal should accept the first-hand testimony [redacted].[74] Their testimony—which describes how the denial

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[72] **CL-0027**, *Cargill, Incorporated v. United Mexican States* (ICSID Case No. ARB(AF)/05/2) Award, 18 September 2009, ¶¶ 291, 293.

[73] Mexico wrongly suggests that Claimant relies on the standard of arbitrariness as applied by the tribunal in *Bilcon v. Canada* when it determined the denial of a quarry's environmental permit breached NAFTA. *See* Respondent's Rejoinder, ¶¶ 351-355. This argument is incorrect. Claimant referred to the decision in *Bilcon* in answer to Mexico's claim that no NAFTA tribunal had previously found one of the NAFTA Parties' conduct was arbitrary. Claimant **has not argued**—**and did not argue**—that the facts of this case are like *Bilcon*. In *Bilcon*, the tribunal found that the Nova Scotia government's denial of Bilcon's environmental permit was on its face arbitrary. As the *Bilcon* tribunal found: "the conduct of the joint review was arbitrary. The JRP effectively created, without legal authority or fair notice to Bilcon, a new standard of assessment rather than fully carrying out the mandate defined by the applicable law, including the requirement under the CEAA to carry out a thorough 'likely significant adverse effects after mitigation' analysis." **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 591. However, the *Bilcon* tribunal did not find that the Canadian environmental authorities had acted with lack of good faith or abused the environmental process for non-environmental reasons, only that there was a new standard applied to Bilcon that had not been regularly applied to other petitioners. In contrast, here, there is direct evidence that Secretary Pacchiano interfered in the MIA process for non-environmental reasons, which rendered both Denials arbitrary. What is more, while there is sufficient evidence in this case that but-for Secretary Pacchiano's arbitrary order to deny, the MIA would have been approved (*see, e.g.,* [redacted]), in *Bilcon*, the tribunal determined that although it had "no doubt that there is a realistic possibility that the Whites Point Project [Bilcon's project] would have been approved as a result of a hypothetical NAFTA-compliant JRP process, it cannot be said that this outcome would have occurred 'in all probability' or with 'a sufficient degree of certainty.'" **CL-0123**, *William Richard Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (PCA Case No. 2009-04) Award on Damages, 10 January 2019, ¶ 168.

[74] *See* Hrg. Day 1 Tr., Respondent's Opening Statement, 24 January 2022, p. 129:4-17 (Spanish Tr.), pp. 115:13-116:2 (English Tr.). *See also* Transcript of Day 3 of Hearing ("**Hrg. Day 3 Tr.**"), Testimony of Hector Herrera, 26 January 2022, 714:6-17 (Spanish Tr.) ("A pesar de que formalmente la decisión de aprobar o de negar una Manifestación de Impacto Ambiental, la firma, el director general de la DGIRA, lo expresado hasta aquí demuestra que esto ocurre en un contexto institucional en tanto -- en el que tanto el secretario como el subsecretario de la SEMARNAT primero tienen la responsabilidad jurídica sobre la aprobación o negación de las manifestaciones de impacto ambiental en el marco del procedimiento de evaluación de impacto ambiental."), p. 628:15-21 (English Tr.) ("Although formally the decision to approve or deny an MIA is signed by the Director General of DGIRA, what we have stated thus far demonstrate[s] that this occurs in an

decisions for ExO's MIA came to be made, and importantly, how those decisions *would have been made but for* Secretary Pacchiano's wrongful intervention—provides all the evidence required to conclude that Mexico breached its obligations under NAFTA Article 1105.

29. In this regard, [redacted]:

a. After a thorough review of the MIA, the DGIRA was prepared to approve it with the conditions proposed by ExO;[75]

b. The DGIRA ultimately denied the MIA—twice—based on directives from Secretary Pacchiano;[76]

c. Secretary Pacchiano's instructions to deny the MIA were not based on legitimate environmental concerns, but rather on extraneous political and personal considerations;[77]

d. The reasons for denial cited in SEMARNAT's two decisions were pretextual and fabricated to comply with the Secretary's directive to deny the MIA;[78] and

institutional context where both the Secretary and the Under-Secretary of SEMARNAT first have the legal responsibility over approval or denial of MIAs in the framework of the PEIA."). Mexico also concedes that the evaluation and determination of a MIA is within the DGIRA's purview. *See* Respondent's Counter-Memorial, ¶¶ 204-205, 343; Respondent's Rejoinder, ¶¶ 123-124.

75 *See* Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1806:17-1807:5, 1807:22-1809:16, (Spanish Tr.), pp. 1624:15-22, 1625:14-1626:19 (English Tr.); Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 314:14-315:7 (Spanish Tr.), pp. 270:10-271:2 (English Tr.); [redacted]

76 *See* Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1806:17-1807:5, 1807:22-1809:16, 1811:21-1812:17 (Spanish Tr.), pp. 1624:15-22, 1625:14-1626:19, 1628:12-1629:3 (English Tr.); Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 314:14-315:7, 315:17-316:6, 316:18-317:15 (Spanish Tr.), pp. 270:10-271:2, 271:10-20, 272:9-273:1 (English Tr.); [redacted]

77 *See* Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1806:6-13, 1807:12-21, 1808:4-1809:16 (Spanish Tr.), pp. 1624:5-11, 1625:6-13, 1625:18-1626:19 (English); Hrg. Day 2 Tr., [redacted] 25 January 2022, pp. 316:1-6, 316:18-317:1, 320:17-22 (Spanish Tr.), pp. 271:16-20, 272:9-13, 275:16-21 (English Tr.); [redacted]

78 *See* Hrg. Day 7 Tr., [redacted] 10 May 2022, pp. 1806:6-13, (Spanish Tr.), pp. 1624:5-11 (English Tr.); Hrg. Day 2 Tr., [redacted] January 2022, pp. 317:10-15, 320:17-22 (Spanish Tr.), pp. 272:20-273:1, 275:16-21 (English Tr.); [redacted]

e. But for the directives from Secretary Pacchiano, the DGIRA would have approved the MIA with ExO's proposed mitigation measures.[79]

30. Except for Secretary Pacchiano, Mexico failed to present a ***single witness*** to contradict [redacted] that the DGIRA staff concluded that the Project should be approved. Nor did it present a single witness to contradict [redacted] that the reasons presented in both Denials were pretextual. Even though others have first-hand knowledge of these events—including some who remain in its employ as public officials—none of them testified in this arbitration:

a. [redacted].[80]

b. Undersecretary Martha Garcíarivas Palmeros, who transmitted Secretary Pacchiano's orders to deny the Project in 2016 and 2018;[81]

c. Mr. Amado Ríos, Undersecretary Garcíarivas Palmeros' chief of staff, [redacted][82] and

d. Ms. Consuelo Juárez, an attorney at SEMARNAT's Legal Affairs Coordinating Unit and Mr. Pacchiano's current business partner, whom Mr. Pacchiano instructed to provide support in drafting both Denials and to whom [redacted] regarding Mr. Pacchiano's instruction to deny the MIA again.[83]

31. Failing to proffer any contradictory evidence from persons with first-hand, contemporaneous knowledge of the MIA Denials, [redacted]

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79 *See* Hrg. Day 7 Tr., [redacted], 10 May 2022, 1806:17-1809:16 (Spanish Tr.), 1624:15-1626:19 (English Tr.); Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 317:10-15, 320:17-22 (Spanish Tr.), pp. 272:20-273:1, 275:16-21 (English Tr.); [redacted]

80 [redacted] *see* **C-0008**, SEMARNAT Denial Decision, 7 April 2016, p. 236 (Spanish), p. 235 (English), *and* **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 519 (Spanish), p. 516 (English) (showing [redacted]).

81 Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1809:1-16, 1812:13-17 (Spanish Tr.), pp. 1626:9-19, 1629:1-3 (English Tr.); Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 316:18-317:19 (Spanish Tr.), pp. 272:9-19 (English Tr.).

82 [redacted] Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 349:2-16, 385:8-13 (Spanish Tr.), pp. 299:19-300:7, 331:1-6 (English Tr.).

83 Hrg. Day 2 Tr., [redacted] 25 January 2022, pp. 317:2-318:3, 349:2-16, 370:11-22 (Spanish Tr.), pp. 272:14-273:9, 299:19-300:7, 317:16-318:1 (English Tr.); [redacted]

[redacted][86]

32. At the hearing, Mexico tacitly admitted [redacted]:[88]

[redacted]

33. Similarly, Mexico disingenuously sought to discredit [redacted]

[redacted]

84 Respondent's Counter-Memorial, ¶¶ 407-423.

85 At the time, Mr. Romero was a lawyer with Mexico's defense team.

86 Romero WS, ¶ 12.

87 Hrg. Day 2 Tr., [redacted], 25 January 2022, p. 370:11-22 (Spanish Tr.), pp. 317:16-318:1 (English Tr.).

88 Hrg. Day 2 Tr., [redacted], 25 January 2022, p. 370:11-22 (Spanish Tr.), pp. 317:16-318:1 (English Tr.) [redacted]

89 *See* Respondent's Counter-Memorial, ¶¶ 199-202.

[redacted].[92] At the hearing, Respondent attempted the same trick.[93]

34. Respondent also resorted to a tactic often used against whistleblowers—suggesting that [redacted].[94]

35. Importantly, Respondent ignores that the legal obligations which it references do not exist in a vacuum. As recognized by the former Secretary of Mexico's Secretaría de Función Pública (Secretariat of Public Function)—the agency in charge of overseeing and sanctioning public servants—when announcing the adoption of an anonymous whistleblowing protocol for public servants almost a year after the Second Denial was issued:[95]

> Sin embargo, ni esta Ley General de Responsabilidades, ni el Código [Penal] ofrecen protecciones o incentivos o herramientas seguras, concretas para los informantes y para el estímulo de estas denuncias tan importantes; a partir de ahora la Función ofrecerá medidas de protección a quienes denuncien actos graves de corrupción, violación de derechos humanos, hostigamiento y acoso en general en el gobierno federal . . . .

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90 *See* Claimant's Request for Interim Measures, ¶ 9; **C-0334**, TFJA's Decision, 23 November 2018, pp. 3-4, 16.

91 The OIC at SEMARNAT is in charge of investigating complaints against SEMARNAT's public officials.

92 Respondent's Rejoinder, Table 4, pp. 59-60 (Spanish), p. 57 (English), and ¶¶ 124-126.

93 Hrg. Day 7 Tr., [redacted] 10 May 2022, pp. 1860:22-1861:7; (Spanish Tr.), p. 1667:4-10 (English Tr.); Hrg. Day 2 Tr., [redacted] 25 January 2022, p. 328:16-20 (Spanish Tr.), p. 282:14-17 (English Tr.).

94 Respondent's Counter-Memorial, ¶¶ 182-183; *see also* ¶¶ 187-195; Respondent's Rejoinder, ¶¶ 96-103.

95 **C-0448**, H. Molina, "Función Pública ofrecerá protección a denunciantes de actos de corrupción," El Economista, 25 July 2019, p. 2 ("Nonetheless, neither this General Law of Responsibilities nor the [Penal] Code offer protections or incentives or safe, concrete tools for informants or encourage these important complaints; from now on, the Secretariat will offer protective measures to anyone who denounces serious acts of corruption, human rights violations, harassment or bullying in general within the federal government . . . ." (counsel translation)). For more on the Secretaría de Función Pública, *see* Claimant's Interim Measures Request, fn. 36.

36. The protections announced were necessary because of the culture surrounding whistleblowing. As the former Secretary of Public Function emphasized:[96]

> Permítanme distinguir primero entre denuncia y delación porque frecuentemente, pero equivocadamente también, se compara a los alertadores internos de la corrupción con delatores o como decimos en México 'chivatos', 'soplones', nada más alejado de la realidad; en la Secretaría de la Función Pública queremos fomentar la denuncia . . . .

The suggestion that [redacted] is a glib response when the regulatory environment is not designed to support whistle-blowing.

37. [redacted],[97] knowing full well it was highly improbable for an Undersecretary or the Secretary to be investigated.[98] And [redacted]

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96 **C-0448**, H. Molina, "Función Pública ofrecerá protección a denunciantes de actos de corrupción," El Economista, 25 July 2019, p. 2 ("Allow me to first distinguish between whistleblowing and snitching because frequently, but also mistakenly, corruption whistleblowers are compared to informers or, as we say in Mexico, 'snitches', 'tattle-tales', nothing is further from the truth; at the Secretariat of Public Function, we want to encourage whistle-blowing . . . ." (counsel translation)). For more on the Secretaría de Función Pública, *see* Claimant's Interim Measures Request, fn. 36.

97 Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1812:18-1813:3 (Spanish Tr.), pp. 1629:4-11 (English Tr.).

98 Hrg. Day 7 Tr., [redacted], 10 May 2022, p. 1861:8-1862:1 (Spanish Tr.):

> P: Y coincide conmigo que en que el señor Pacchiano nunca fue objeto de un procedimiento de responsabilidad administrativa. ¿Correcto?
> R: Es muy raro que un secretario de Estado sea sujeto a procedimientos administrativos por un órgano de control.
> P: ¿Pero ya se sabe si el secretario Pacchiano fue o no sujeto de un procedimiento?
> R: No, no fue sujeto porque era secretario de Estado.
> P: Es muy raro. ¿Y de un subsecretario también es raro?
> R: También en subsecretario de Estado también es raro. Tal es así que tampoco la química Martha Garcíarivas tiene procedimientos en el órgano interno de control.
>
> In English (pp. 1667:11-1668:1), the translation reads:
>
> Q. And you agree with me that Mr. Pacchiano was never subject to any kind of an administrative responsibility proceeding?
> A. It's very strange for a Secretary to be subject to this kind of proceeding.
> Q. But do you know if Secretary Pacchiano was subject to any procedure?
> A. He was not subject to a proceeding because he was the Secretary.
> Q. And would it be strange for an Under-Secretary as well?

[redacted] there was no legitimate justification for a denial:[100]

[redacted]

38. And while Respondent has cynically tried to insinuate an economic motivation [redacted],[101] the reality is that there is nothing

A. Right. That's why Under-Secretary Garcíarivas did not undergo any proceeding.

99 Hrg. Day 2 Tr., [redacted], 25 January 2022, p. 356:2-11 (Spanish Tr.) [redacted] p. 305:14-20 (English Tr.) ("[redacted]").

100 Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 348:18-349:16 (Spanish Tr.), pp. 299:11-300:7 (English Tr.) [redacted]).

101 Respondent's Counter-Memorial, ¶¶ 424-431; Respondent's Rejoinder, ¶¶ 84-95.

improper about [redacted].[102]

[redacted].[103] This is nothing out of the ordinary in arbitration proceedings,[104] particularly one where the decisions at issue span nearly 800 pages and the entire file is in the thousands of pages. Indeed, Respondent has acknowledged that there is nothing unusual or untoward about reimbursing witnesses for the time spent working on arbitration proceedings.[105]

2. Mexico Has Failed to Offer Any Documents Supporting the Integrity of SEMARNAT's Evaluation of the MIA

39. The Tribunal should note well that Mexico has not put forward any documents to support the integrity of SEMARNAT's evaluation and determination of the MIA. Indeed, Mexico did not produce a single document in response to Odyssey's request for:[106]

> All Documents, Communications, and drafts reflecting a determination by SEMARNAT/DGIRA ('Draft Determinations') and/or individual staff members regarding the environmental impact assessment of the Don Diego Project. This Request includes, but is not limited to, the Don Diego Project's alleged impact on *Caretta caretta* turtles, whales, and seabed recovery.

40. Mexico claims that it does not possess any internal documents evidencing the allegedly "exhaustive" environmental assessment analysis described at paragraph 167 of its Counter-Memorial.[107] Nor, it claims, does it possess any documents generated in the analyses conducted on the MIA, the Additional Information, submissions from other

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102 Huacuja ER, ¶¶ 61-66, 81-97; *see also* Claimant's Reply, ¶ 147.

103 [redacted]. Hrg. Day 7 Tr., [redacted] 10 May 2022, pp. 1839:4-1840:14 (Spanish Tr.), pp. 1649:11-1650:12.

104 Claimant's Reply, ¶ 147, fn. 408; *see also* Claimant's Reply, ¶ 147, fn. 407, fn. 409, fn. 410, fn. 411.

105 *See* Respondent's Counter-Memorial, ¶ 427.

106 Procedural Order No. 3, 23 April 2021, PDF p. 17 (Request 1, limited in time and custodians).

107 **C-0471**, Letter from Mexico to Cooley Transmitting Document Production, 18 May 2021, pp. 2-3 (counsel translation).

government agencies or third parties, nor even any documents analyzing environmental impacts and mitigation measures. This is not credible.

41. In an attempt to deflect attention from this gaping hole in its defense, Respondent tries to put the onus [redacted] to provide documents that substantiate their testimony.[108] This argument is not serious; as Mexico is fully aware, [redacted].[109]

42. Respondent also attempts to fill the gap by providing the Tribunal with publicly available opinions and submissions made by government agencies and third parties in opposition to the Project. It does so without even addressing whether these submissions may have contributed to any denial decision, much less explaining how.[110]

43. As noted in its Reply,[111] Claimant does not dispute that SEMARNAT has the right to request third parties to provide information or opinions to assist with the evaluation of a MIA.[112] And any interested third party can make submissions during the public consultation process.[113] However, these third-party opinions and submissions are not binding on the DGIRA,[114] and are not competent evidence that the Denials' processes met NAFTA's Article 1105 FET standard. [redacted]

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108 *See* Respondent's Rejoinder, ¶¶ 109-110.

109 [redacted]

110 In fact, some of these technical opinions cited by Respondent in its opening presentation were not even a part of the MIA record because they had been submitted in the context of the first MIA process in 2014, but they were not resubmitted for the 2015 MIA evaluation process. Claimant's Reply, ¶¶ 65, 81-84; **RD-0001**, Respondent's Opening Presentation, pp. 10, 13. For example, in its opening, Respondent referred to the opinion of CICIMAR (*Centro Interdisciplinario de Ciencias Marinas*) and the *Academia Mexicana de Impacto Ambiental*, which, as both resolutions note, were not received by the DGIRA. *See* **C-0008**, SEMARNAT Denial Decision, 7 April 2016, pp. 37-38; **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 36. Moreover, the DGIRA never requested an opinion from UNESCO.

111 Claimant's Reply, ¶ 68.

112 **C-0097**, R-LGEEPA-EIA, 31 October 2014, art. 24; Respondent's Counter-Memorial, ¶¶ 162-163, 271; Herrera ER2, ¶¶ 68-71.

113 Herrera ER2, ¶ 68.

114 Herrera ER2, ¶ 70.

evaluating the MIA and determining whether it should be granted based on the MIA itself, the Additional Information submitted by ExO in reply to these third-party opinions and submissions, and SEMARNAT's own expertise.[115] [redacted].[116]

44. Moreover, there is no evidence that any of the third-party submissions or opinions cited by Mexico in its Reply Memorial and Opening Presentation actually provided a basis for either of the Denials. What is manifest is that SEMARNAT did not cite any of these submissions in the analysis portion of either the 2016 or 2018 Denials.[117]

45. Further, [redacted][118]

[redacted]

[115] Herrera ER2, ¶¶ 68-70.

[116] Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1808:4-18, 1884:2-1885:7, 1890:5-1891:2 (Spanish Tr.), pp. 1625:18-1626:5, 1684:13-1685:9, 1689:3-16 (English Tr.); Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 314:14-315:16, 317:10-15, 363:3-14 (Spanish Tr.), pp. 270:10-271:9, 272:20-273:1, 312:2-11 (English Tr.); [redacted]

[117] **C-0008**, SEMARNAT Denial Decision, 7 April 2016, pp. 218-233 (Spanish), pp. 217-233 (English); **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 214-516 (Spanish), pp. 214-513 (English). [redacted]

[118] [redacted]

46. And [redacted]:[119]

[redacted]

47. [redacted] the additional information submitted by ExO was [redacted][120]

48. Finally, [redacted] because ExO incorporated certain mitigation measures (such as tickler chains and deflectors with respect to turtles, and ecological pauses during whale migration season), CONANP's and other third-party concerns became moot.[121] Additionally, [redacted] at the end of the environmental impact assessment process, the DGIRA had concluded that ExO's mitigation measures, which formed part of the Additional Information it submitted, satisfactorily resolved CONANP's concerns with regards to whales and turtles.[122] [redacted] the statements made by CONANP to the effect that the Project would contravene Mexican legislation and international conventions such as the World Heritage Convention and the RAMSAR Convention were incorrect.[123]

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119 [redacted]

120 [redacted]

121 [redacted]

122 Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1806:17-1807:5, 1808:4-18, 1908:4-1913:8 (Spanish Tr.), pp. 1624:15-22, 1625:18-1626:5, 1702:3-1706:1 (English Tr.).

123 Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1911:12-1912:16 (Spanish Tr.) ("[E]n el punto que hablan de que se están incumpliendo convenciones internacionales, es de llamar la atención que hacen referencia a la convención sobre protección de patrimonio mundial y cultural. El Golfo de Ulloa no es una zona que sea patrimonio mundial, cultural y natural. El único sitio que es patrimonio cultural y natural en el Estado de Baja California, de -- en esa zona, es la Laguna de San Ignacio, donde las ballenas llevan -- van a criar, a parir y criar por un período de tiempo a sus crías. Entonces estamos hablando de un proyecto que está muy alejado de un sitio considerado como patrimonio mundial y cultural. Y todavía me llama más la atención, y siempre me llamó la atención, que hicieran mención a la convención Ramsar. La convención Ramsar habla sobre la protección de ciertos humedales de importancia internacional, que son albergue de especies acuáticas y terrestres. Aquí no estamos hablando de un sitio Ramsar, estamos hablando de que

49. It is particularly noteworthy that in reply to Arbitrator Sands' question of whether she agreed with CONANP's conclusion regarding the Project, Mexico's own expert, Dr. Morales Zárate, opined that CONANP's conclusion was too categorical: "es difícil hacer una aseveración tan tajante en ecología."[124]

3. Mr. Pacchiano's Denials Are Not Credible

50. Mr. Pacchiano's denial of any intervention in the DGIRA's review of the MIA[125] is not credible, nor is it supported by any contemporaneous documentary or testimonial evidence. In seeking to buttress his claim of having no involvement whatsoever in the decisions, Mr. Pacchiano asserts that he had no power to influence the outcome.[126] Were this to be true, it begs an obvious question: why, as he himself admits, would he have *met with ExO representatives at least **seven times** over the course of the Don Diego environmental impact assessment process*?[127] What purpose would those meetings serve if, notwithstanding his then-position as Secretary of SEMARNAT, he had no influence, role, or power over the granting of ExO's MIA? When asked a similar question by President Bulnes, Mr. Pacchiano had no real answer (or had no answer he was willing to give).[128] The answer is obvious.

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está en mar abierto, está en la zona económica exclusiva, en el mar de Ulloa, en el Golfo -- en Baja California Sur. Entonces, de ninguna manera estamos hablando de que es un sitio Ramsar."), pp. 1704:14-1705:12 (English Tr.) ("Now, when they state that international conventions would be breached, it should be mentioned that here, it refers to the Convention on the protection of the World Heritage, and the Ulloa Gulf is not an area that has been protected by this Convention. The only part of the State of Baja California that is part of the World Heritage is the San Ignacio lagoon, where the whales go for reproductive purposes for a couple of days. So, this is a Project that is very far from an area that it is considered world and cultural --World Cultural Heritage. And it was always striking that they always referred to the Ramsar Convention. 'Ramsar' refers to the protection of some wetlands of international importance that shelter or that host some aquatic and land species. Here we are not talking about a RAMSAR site; this is open sea, this is within the Exclusive Economic Zone, in the Ulloa sea, in the Gulf -- in Baja California Sur. Therefore, there is no way that we are talking about a [RAMSAR] site.").

[124] Transcript of Day 4 of Hearing ("**Hrg. Day 4 Tr.**"), Testimony of Maria Veronica Morales Zárate, 27 January 2022, p. 1124:17-18 (Spanish Tr.), p. 974:8-9 ("[I]t's difficult to make such a strong affirmation in ecology.").

[125] Pacchiano WS1, ¶¶ 12-17, 21-33, 44, 60; Pacchiano WS2, ¶¶ 5-9; Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 504:15-506:9 (Spanish Tr.), pp. 443:8-444:14 (English Tr.).

[126] Pacchiano WS1, ¶¶ 12-17, 21-33, 44, 60; Pacchiano WS2, ¶¶ 5-9.

[127] Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, p. 577:10-19 (Spanish Tr.), p. 507:12-19 (English Tr.).

[128] Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 577:20-578:22 (Spanish Tr.), pp. 507:20-508:17 (English Tr.).

51. As the highest ranking official in SEMARNAT, Mr. Pacchiano possessed both the *de jure* and *de facto* authority to influence any decisions made by his subordinates, whom Mr. Pacchiano acknowledged he could fire at will.[129] It is fanciful to suggest otherwise.

52. Mr. Pacchiano's testimony was also riddled with contradictions and replete with self-serving, implausible assertions. For example:

    a. When confronted with the *tarjeta informativa*, which proclaimed that SEMARNAT would deny the Don Diego MIA again and was issued by SEMARNAT's communications unit just three business days after the TFJA notified SEMARNAT of its ruling quashing the First Denial,[130] Mr. Pacchiano first tried to distance himself from the communication by suggesting the SEMARNAT's communications arm operates independently from the Secretary's office.[131] This is not true; the communications unit operates directly under the Secretary's supervision.[132] Indeed, as Mr. Pacchiano admitted in his second witness statement, the communications unit even co-managed his Twitter account.[133] Further, it is inherently improbable that SEMARNAT's communications unit would issue any press release commenting on a high-profile administrative court decision setting aside an earlier SEMARNAT decision without the Secretary's approval.

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129 *See* Dr. Herrera's explanation during the hearing of why the Undersecretary and Secretary of SEMARNAT bears the responsibility and power over MIA approvals/denials. Hrg. Day 3 Tr**.**, Testimony of Hector Herrera, 26 January 2022, pp. 706:12-709:7 (Spanish Tr.). Mr. Pacchiano acknowledged in his witness statements and during the hearing [redacted]. Pacchiano WS1, ¶¶ 18-20; Pacchiano WS2, ¶ 20; Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 514:11-515:8 (Spanish Tr.), p. 451:8-22 (English Tr.).

130 **C-0470**, Informational Note (Tarjeta Informativa), 18 April 2018.

131 Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 547:2-548:18 (Spanish Tr.), pp. 481:2-482:15 (English Tr.).

132 **R-0053**, Reglamento Interior de la SEMARNAT, 26 November 2012, art. 15.XVII ("La Coordinación General de Comunicación Social tendrá las atribuciones siguientes: . . . XVII. **Las demás que le confiera el Titular de la Secretaría**, así como las que le señalen las disposiciones jurídicas aplicables." (emphasis added)). RI-SEMARNAT also establishes that the head of the Communications Unit has to agree (acordar) upon his decisions with his hierarchic superior, the Secretary. **R-0053**, Reglamento Interior de la SEMARNAT, 26 November 2012, arts. 11, 19.II. Moreover, the Secretary has the power to direct SEMARNAT's communications unit. *See* **R-0053**, Reglamento Interior de la SEMARNAT, 26 November 2012, art. 5.IX ("El Secretario tendrá las facultades indelegables siguientes: . . . IX. Establecer las políticas generales a que deban sujetarse las unidades administrativas de la Secretaría y sus órganos desconcentrados, en su caso, para el otorgamiento de las concesiones, asignaciones, permisos, autorizaciones y licencias en las materias competencia de la Secretaría, de conformidad con la legislación aplicable."). In English, this reads: "The Secretary shall have the following non-delegable powers: . . . To establish the general policies to which the Ministry's administrative units and its decentralized bodies must abide, where appropriate, for the granting of concessions, assignments, permits, authorizations and licenses in matters within the competence of the Ministry, in accordance with the applicable legislation.").

133 Pacchiano WS2, ¶ 36.

b. Casting around for another way to distance himself from this damning piece of evidence, Mr. Pacchiano then seized on the letters "SPA," which are printed on the upper right corner of the document, and tried to suggest this meant the press release had been issued by the Subsecretaría de Protección Ambiental (the office above the DGIRA), and not by his office. Specifically, Mr. Pacchiano offered: "[e]n la esquina superior derecha hay una especie de folio que termina con las letras SPA, que supongo que será Subsecretaria de Protección Ambiental."[134] However, as explained by Odyssey's counsel, these letters reflected a document numbering convention in these proceedings, and meant only that the document's original language was Spanish.[135]

c. Further evidence of Mr. Pacchiano's lack of candor is his discussion of two newspaper articles that refer to the *tarjeta informativa* in his first witness statement. Claimant had introduced these articles with its Memorial as evidence that the Second Denial was preordained because they were published within a week after the TFJA's decision had been communicated to SEMARNAT and reported that the agency was going to deny the MIA again.[136] (At that time, Odyssey had not yet obtained a copy of the *tarjeta informativa* itself.) Mr. Pacchiano dismissed the articles, suggesting the reporting was inaccurate and simply reflected each paper's journalistic practices.[137] In fact, the articles largely repeat the *tarjeta informativa,* as Mr. Pacchiano surely knew. In addition, Mr. Pacchiano also elided the central point—namely, that the Second Denial was a *fait accompli*.

53. Mr. Pacchiano was also less than forthcoming about the press conference he gave in Baja California a month before SEMARNAT issued the Second Denial. At that press conference, Mr. Pacchiano publicly stated that the Project would be denied as it had been in 2016. Together with its Memorial, Claimant submitted both the transcript of the press conference (C-0174) and a video file (C-0176). Inadvertently, the video file did not match the transcript.[138] Instead of querying the obvious mismatch, Mr. Pacchiano denied he

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134 Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, p. 549:21-550:3 (Spanish Tr.), p. 483:12-14 (English Tr.) ("Upper right, there is a kind of folio that ends with 'SPA,' and I suppose that that means that the Under-Secretariat for Environmental Protection.").

135 Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, p. 550:4-6 (Spanish Tr.), 483:15-17 (English Tr.).

136 *See* **C-0171**, E. Méndez, "Negarán dragado de arena en Ulloa; resolución de la Semarnat," Excelsior, 19 April 2018; **C-0173**, A. Cruz, "Insistirá Semarnat en frenar proyecto minero submarino en BCS," Cronica Jalisco, 20 April 2018.

137 Pacchiano WS1, ¶ 74.

138 The video file that was submitted as original exhibit C-0176 was another video of Mr. Pacchiano where he did not refer to the Don Diego Project.

had ever made the statements attributed to him and denied the accuracy of the transcript.[139] When Claimant realized the error, it corrected it immediately.[140] Despite the opportunity to do so, Mr. Pacchiano chose to ignore it and did not revisit either the press conference or the statements he made about that conference in his second witness statement.[141]

54. Leaving aside the several breaches of Mexican law for revealing non-public information,[142] Secretary Pacchiano's public declaration that the Don Diego MIA would be denied again, one month before the issuance of the denial itself, belies his claim that he had no involvement in the MIA process.

4. The Contemporaneous Evidence Is Consistent with [redacted] Events Showing That the Don Diego MIA Was Arbitrarily Denied

55. The testimony [redacted] confirms that the Denials were not based in science, but rather were the result of then-Secretary Pacchiano's political self-interest and personal animus between him and one of ExO's interlocutors (Mr. Alonso Ancira).[143]

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139 Pacchiano WS1, ¶ 75.

140 *See* Letter from R. Thorn to Mr. Felipe Bulnes, Dr. Stanimir Alexandrov, and Prof. Philippe Sands QC, re Odyssey Marine Exploration, Inc. v. United Mexican States (UNCT/20/1), 1 March 2021.

141 Leaving aside the several breaches of Mexican laws for revealing non-public information (Herrera ER1, ¶ 90), it is striking that Secretary Pacchiano, who claims to have had no involvement in the MIA process, was publicly commenting that the Don Diego MIA would have been denied again one month before the issuance of the Second Denial.

142 Herrera ER1, ¶ 90.

143 Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 529:12-530:13 (Spanish Tr.), pp. 464:19-465:17 (English Tr.). Mr. Pacchiano's disdain for Mr. Ancira is evident from how he describes him. *See, e.g.,* Pacchiano WS1, ¶ 60 ("De hecho, considero que la insistencia y constante presión del Sr. Ancira para que se autorizara el proyecto Don Diego, se explica porque se trata de un empresario que siempre se ha relacionado con el Gobierno y esa posición, probablemente la utiliza para generar mayor presión hacia funcionarios del Gobierno y buscar beneficiarse de las decisiones que se tomen dentro del mismo." In English, this reads: "In fact, I consider that the insistence and constant pressure of Mr. Ancira to authorize the Don Diego project is explained by the fact that he is a businessman who has always been related with the Government and that position was probably used to generate more pressure toward government officials and seek to benefit from the decisions made within.").

Ironically, Mr. Pacchiano seeks to do the same in his new consulting business lobbying before SEMARNAT, though he incredulously stated that he does not lobby by saying he does not know the content of his own website. Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 540:21-541:16 (Spanish Tr.) ("SEÑOR BOWMAN (Interpretado del inglés): . . . Simplemente me quería enfocar en la primera frase. Señor Pacchiano: o en su consultoría privada ahora y en su negocio ahora, usted cabildea a SEMARNAT a nombre

56. Importantly, the Tribunal does not need to reach a definitive conclusion as to what motivated Mr. Pacchiano to intervene and change the outcome of the decision regarding ExO's MIA in order to find a breach of Article 1105.[144] It would be enough to find that ExO was not accorded due process, was treated arbitrarily, and/or that Mr. Pacchiano's intervention constituted an abuse of governmental authority for a non-environmental purpose.[145] [redacted][147]

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de sus clientes privados. ¿No es correcto eso? SEÑOR PACCHIANO ALAMÁN: No, no cabildea. P: Entonces, donde su sitio web dice que usted hace lobbying, ¿eso es un error? R: No sé cómo está redactado, lo voy a revisar. Lo que nosotros hacemos en el despacho es ayudar a clientes a integrar expedientes y someterlos a consideración de la Secretaría de Medio Ambiente. Yo no me reúno con funcionarios de la SEMARNAT. No lo he hecho ni lo haré."), p. 475:9-22 (English Tr.) ("Q. . . . I just wanted to focus on the first sentence. So, Mr. Pacchiano, in your current private consulting business, you lobby SEMARNAT on behalf of private[] clients; right? A. No, not lobbying. Q. So, when your website says that you do lobbying, is that a mistake? A. I don't know how it's drafted. I'll take a look at it, but what we do in my office is help clients to prepare the files and submit them for consideration by the Secretariat. I do not meet with SEMARNAT officials. I have not done it, and will not do so.").

This testimony also betrays the ridiculous notion, which Mr. Pacchiano has tried to maintain throughout, that he had no involvement in the approval of MIAs beyond staying informed; evidently, he would not be able to advise clients on a process from which he was completely disconnected.

144 Answer to Tribunal Question No. 6.

145 *See generally* Claimant's Memorial, ¶¶ 217-229, 230-232, 233-241, 242-243, 248-294, and Claimant's Reply, ¶¶ 175-192, 201-205, 206-212, 214-224, 225-234. For example, in *Cargill v. United Mexican States*, the tribunal explained the test of arbitrariness is satisfied when "the State's actions move beyond a merely inconsistent or questionable application of administrative or legal policy or procedure to the point where the action constitutes an unexpected and shocking repudiation of a policy's very purpose and goals, or otherwise grossly subverts a domestic law or policy for an ulterior motive." **CL-0027**, *Cargill, Incorporated v. United Mexican States* (ICSID Case No. ARB(AF)/05/2) Award, 18 September 2009, ¶ 293.

146 [redacted] Hrg. Day 2 Tr., [redacted] 25 January 2022, pp. 314:14-317:9, 382:19-385:13, 387:1-389:11 (Spanish Tr.), pp. 270:10-272:19, 328:22-331:6, 332:13-334:13 (English Tr.); Hrg. Day 7 Tr., [redacted] 10 May 2022, pp. 1806:6-1807:21, 1808:4-1809:16, 1811:8-20 (Spanish Tr.), pp. 1624:5-1625:13, 1625:18-1626:19, 1628:1-11 (English Tr.).

147 Hrg. Day 7 Tr., [redacted], 10 May 2022, p. 1809:4-16 (Spanish Tr.), 1626:12-19 (English Tr.) [redacted]

[redacted]

57. [redacted].[148]

58. The contemporaneous evidence corroborates [redacted] including:

a. Contemporaneous emails by ExO representatives confirming that the denial was politically and personally motivated.[149] In particular, in an email to Mark Gordon on 10 August 2016, reflecting on the First Denial, Mr. De Narvaez, ExO's then-Director, observed:[150]

> **[T]he negative resolution for our MIA was of political nature and not technical**, [redacted]

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148 During the examination [redacted], Respondent made unfair use [redacted] to try to suggest there was a conflict between them regarding [redacted] Hrg. Day 7 Tr., [redacted] 18 May 2022, pp. 1828:17-1830:14 (Spanish Tr.), pp. 1641:6-1642:19 (English Tr.). [redacted] Hrg. Day 2 Tr., [redacted] 25 January 2022, pp. 350:4-351:15, 384:3-385:13 (Spanish Tr.), pp. 300:17-301:22, 329:20-331:6 (English Tr.). This is consistent [redacted].

149 Claimant's Reply, ¶¶ 88(a)-(b), 88(g).

150 *See* **C-0416**, Email from D. De Narvaez to R. Goodden, et al., re Oceanica Internal Report, 10 August 2016, p. 2 (emphasis added); Claimant's Reply, ¶¶ 88(a)-(b), 88(g).

[redacted] **The recent decision to deny consent came from Secretary Pacchiano due, it would appear, to a) his unstable political situation** resulting from the approval of a controversial real estate project in Quintana Roo state and b) . . . **"Alonso's outbursts with Pacchiano"** . . . . **It's clear to us that** [redacted] **are not the force holding our project back, it's Secretary Pacchiano.**

b. Dr. Lozano's testimony confirming that the technical team at the DGIRA and CONANP had endorsed the Project [redacted][151]

c. The *tarjeta informativa* SEMARNAT issued on 18 April 2018, five days (three business days) after being notified of the TFJA's ruling, which expressed SEMARNAT's institutional view that the Project would be denied again 5 days after being notified of the TFJA's ruling;[152] and

d. Mr. Pacchiano's public comments against the Project at Los Cabos in Baja California Sur in September 2018,[153] which corroborate his opposition to the Project (one month before it was denied for a second time).

59. Further corroborating the testimony [redacted] is the contemporaneous record, as recalled immediately below, which describes the vulnerability of Mr. Pacchiano's political position.

60. As Mr. Pacchiano himself admitted, his image has been publicly associated with environmental matters since his transition to public office in 2009 as part of the Environmental Commission of the Chamber of Deputies.[154] Later, he became the first member of the Green Ecologist Party to hold the position of Secretary of SEMARNAT.[155]

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151 Lozano WS1, ¶¶ 39, 62-64, 70.

152 **C-0470**, Informational Note (Tarjeta Informativa), 18 April 2018.

153 *See* Claimant's Reply, ¶¶ 88(a)-(b), 88(g); **C-0174**, Transcript of Pacchiano Public Statements, September 2018; **C-0176**, Los Cabos, September 2018.

154 Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 517:19-518:3 (Spanish Tr.), p. 454:5-10 (English Tr.).

155 **C-0397**, "Rafael Pacchiano, el 'sexy' y polémico funcionario cuestionado por la destrucción del manglar en Cancún," Yahoo! News, 27 January 2016; Pacchiano WS1, ¶ 8; **C-0421**, I. Lira, "La agonía de la vaquita marina se aceleró con el PVEM en Semarnat, acusan Greenpeace y especialista," SinEmbargo, 21 March 2017, p. 2.

At the same time, he also served as the President's political representative to Baja California, Baja California Sur, and Nayarit.[156]

61. During his cross-examination, Mr. Pacchiano incredibly asserted that he never allowed criticism in the media or elsewhere to influence his actions while at SEMARNAT.[157] But the political context in which the Don Diego Project was being considered by the DGIRA, in which Mr. Pacchiano was personally under fire for a variety of issues relating to other projects, cannot be ignored.

62. For example, in 2014, SEMARNAT approved the Los Cardones mining project in Baja California Sur, an open-pit gold mine project within a natural protected area that SEMARNAT.[158] Public opposition was intense, and because Mr. Pacchiano was associated with the project's approval, much of the public anger was directed at him.[159] News articles reporting on Don Diego were quick to recall Mr. Pacchiano's prior approval of Los Cardones and other controversial projects.[160] This was followed by requests by politicians

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156 Pacchiano WS1, ¶ 9.

157 Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 522:6-17, 523:10-22 (Spanish Tr.), pp. 458:8-18, 459:9-18 (English Tr.).

158 **C-0386**, A. Enciso, "Revisará Semarnat MIA de minera Don Diego en Baja California Sur," La Jornada, 31 August 2015.

159 Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 521:22-522:5 (Spanish Tr.) ("P: Señor Pacchiano, ¿no es cierto que [redacted], la crítica pública de ese proyecto se la adjudicaron al secretario de ese entonces, a Juan José Guerra, y a usted? ¿Correcto, señor? R: Sí."), p. 458:3-7 (English Tr.) ("Q. Mr. Pacchiano, isn't it true that, [redacted], the public criticism of that Project fell to the Secretary at the time, Juan José Guerra, and to you? Correct, sir? A. Yes."); **C-0091**, "Revés al medio ambiente: México autoriza la explotación de la mina Los Cardones," Ecoticias, 1 August 2014 (reporting, "ayer se divulgó el resolutivo, luego de que fue revisado por la oficina del subsecretario de Gestión para la Protección Ambiental, Rafael Pacchiano." (". . . the resolution was issued yesterday after being reviewed by the office of the Undersecretary of Management for Environmental Protection, Rafael Pacchiano.") (counsel translation)).

160 **C-0386**, A. Enciso, "Revisará Semarnat MIA de minera Don Diego en Baja California Sur," La Jornada, 31 August 2015, p. 1 ("El titular de la Secretaría de Medio Ambiente y Recursos Naturales (Semarnat), Rafael Pacchiano, como subsecretario de Gestión para la Protección Ambiental tuvo bajo su responsabilidad directa la autorización de las manifestaciones de impacto ambiental (MIA) de proyectos controversiales, como la minera Los Cardones, en área de la reserva de la biosfera Sierra la Laguna, en Baja California Sur; la presa hidroeléctrica Las Cruces, en Nayarit, y el Nuevo Aeropuerto Internacional de la Ciudad de México. En estos proyectos, sectores académicos y ambientalistas han considerado que habrá impactos a la biodiversidad, así como sociales. **La Semarnat tiene en estos días en su agenda la revisión de, entre otros, el estudio de impacto ambiental del proyecto de minería subterránea Don Diego, en Baja California Sur**."). In English: ("The head of the Secretariat of Environment and Natural Resources (Semarnat), Rafael Pacchiano, as undersecretary of Management for Environmental Protection had under his direct responsibility the authorization of the environmental impact statement (MIA) of controversial projects,

asking Mr. Pacchiano to deny the Don Diego Project,[161] all of which led to concern by Mr. Pacchiano about the potential fallout from the Project's approval, [redacted].[162] It was against this backdrop that Mr. Pacchiano demanded ExO withdraw the MIA and resubmit it with letters of support that would give him the political cover to approve the Project.[163]

63. Then, in August 2015, after ExO refiled its MIA, the issue of *Caretta caretta* conservation gained media attention. This was prompted by the United States' announcement that it was considering imposing commercial sanctions against Mexico because Mexico did not have adequate programs in place to mitigate by-catch of *Caretta caretta* turtles (i.e., turtles that are killed as byproduct of fishing with nets).[164]

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such as the Los Cardones mine, in the area of the Sierra la Laguna biosphere reserve, in Baja California Sur; the hydroelectric dam in Las Cruces, Nayarit, and the New International Airport of Mexico City. In these projects, academic and environmental sectors have considered that there will be impacts on biodiversity, as well as social impacts. **These days, Semarnat has on its agenda the review of, among others, the environmental impact study of the underground mining project Don Diego, in Baja California Sur**." (counsel translation; emphasis added)).

161 **C-0440**, Proposición con Punto de Acuerdo por la que se Exhorta a la SEMARNAT a Negar Cualquier Autorización a los Proyectos Denominados Los Cardones y Don Diego en el Estado de Baja California Sur, Salón de Sesiones del Senado de la República, 6 September 2018; **C-0441**, Intervention of Sen. Víctor Manuel Castro Cosío, 6 September 2018; **C-0443**, Intervention of Sen. María Guadalupe Saldaña Cisneros, 6 December 2018; **C-0444**, Intervention of Sen. Jesús Lucía Trasviña Waldenrath, 6 December 2018; **R-0046**, Punto de Acuerdo del Congreso de Baja California Sur, 3 November 2014.

162 Hrg. Day 7 Tr., [redacted], 10 May 2022, p. 1806:6-13 (Spanish Tr.), p. 1624:5-11 (English Tr.); *see also* p. 1850:8-15 (". . . [redacted]."), p. 1659:2-7 (English Tr.) ([redacted]."); *see also* [redacted] In paragraph 23, [redacted]

163 [redacted] Claimant's Memorial, ¶¶ 130-132, 146, 254; Claimant's Reply, ¶¶ 88(g), 93-102, 118(b), 205; **C-0389**, Email chain between G. Stemm and R. Jaime Barrera re Question for Alonso, 21 October 2015.

164 **C-0129**, E. Godoy, "México, en riesgo de un embargo pesquero por tortugas caguama," Proceso.com, 14 August 2015. [redacted] *see also* **C-0416**, Email from D. De Narvaez to R. Goodden, et al., re Oceanica Internal Report, 10 August 2016 ("The recent decision to deny consent came from Secretary Pacchiano due, it would appear, to a) his unstable political situation resulting from the approval

64. At the same time, there was media attention on the near-extinction of the vaquita marina.[165] It was specifically noted in the press that the destruction of the vaquita marina occurred after the arrival at SEMARNAT of Green Party "militants."[166]

65. In early 2016, Secretary Pacchiano was branded the "controversial figure" behind the Tajamar Wetlands scandal that saw a developer raze wetlands despite conservation requirements,[167] recognized as a "political problem" for SEMARNAT.[168]

66. This was just before the March 2016 meeting with ExO's representatives, where Secretary Pacchiano became furious after Mr. Ancira told him that unless a decision on Don Diego's

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of a controversial real estate project in Quintana Roo state and b) according to Mauricio, 'Alonso's outbursts with Pacchiano', whatever that means.").

165 **C-0387**, C. Moreno, "La vaquita marina sigue en peligro," Periodistas en Español, 23 September 2015; Claimant's Reply, ¶¶ 29, 96(c), 103-104. The vaquita marina lives in the Gulf of California, not in the Gulf of Ulloa or near the area where the Don Diego Project would have been developed. **C-0159**, E. Malkin, "Before Vaquitas Vanish, a Desperate Bid to Save Them," The New York Times, 27 February 2017, p. 1.

166 **C-0421**, I. Lira, "La agonía de la vaquita marina se aceleró con el PVEM en Semarnat, acusan Greenpeace y especialista," SinEmbargo, 21 March 2017, p. 2. This article writes: "El periodo en el que la vaquita marina ha sufrido su más fuerte declive coincide con la llegada del PVEM a la Semarnat. . . . Precisamente hasta 2012, alrededor de 200 ejemplares de la marsopa más pequeña del mundo nadaban por las aguas del Alto Golfo de California y ya para febrero de este año, la población alcanzaba apenas 30, de acuerdo con el último reporte del Comité Internacional para la Recuperación de la especie (CIRVA)." ("The period in which the vaquita has suffered its strongest decline coincides with the arrival of a public servant and militants from the Green Ecologist Party of Mexico [PVEM] to SEMARNAT. . . . Until 2012, around 200 specimens of the world's smallest marine mammal were swimming in the waters of the High Gulf of California, and in February of this year the population barely reached 30, according to the latest report of the International Committee for the Recovery of the Species (CIRVA)." (counsel translation)).

167 **C-0397**, "Rafael Pacchiano, el 'sexy' y polémico funcionario cuestionado por la destrucción del manglar en Cancún," Yahoo! News, 27 January 2016 ("'Nosotro no lo aprobamos, incluso, un proyecto de estas características, nosotros no lo bubiéramos autorizado nunca' dijo el funcionario federal [Pacchiano].").

168 **C-0398**, A. Aguirre, "¿Ecocidio en Tajamar?," El Economista, 27 January 2016, p. 2 ("Ante el reciente escándalo, el secretario Rafael Pacchiano se ha arropado en las imprecisiones, pero el problema político originado por el desmonte del manglar sigue incesante."). Despite these public pronouncements where Mr. Pacchiano claims that "we" (and not the DGIRA alone) would never have authorized the Tajamar project, Mr. Pacchiano declared in these proceedings that as Secretary of SEMARNAT he did not interfere in any MIA approval process. Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, pp. 504:15-505:13 (Spanish Tr.) ("P. . . . ¿Qué intervención tiene, entonces, el titular de la SEMARNAT en un procedimiento de evaluación de impacto ambiental? R: Solamente estar al tanto de cuál es el estatus de los trámites y en caso de que alguna de las áreas requiera algún tipo de apoyo por parte del secretario como para agilizar la respuesta a una opinión solicitada. Pero, fuera de eso, no tiene ninguna intervención el titular de la Secretaría ni incluso el subsecretario. Es una facultad única y exclusiva del director de la DGIRA."), p. 443:8-22 ("Q. . . . So, what is the intervention of SEMARNAT in an environmental assessment procedure? A. Well, it has to keep abreast of the proceedings, and if any of the departments require the help of the Secretary to make responses quicker in connection with some opinions, well, then the Secretary actually steps in. But other than that, no. That's everything the Secretary does. The other powers have to do with the Director of the DGIRA.").

MIA issued soon, ExO would file suit in the Mexican courts,[169] and immediately ordered the DGIRA to "find a reason" to deny the MIA.[170] SEMARNAT issued the First Denial several weeks later, on 7 April 2016.[171]

67. Immediately thereafter, on 29 April 2016, ExO filed an administrative review petition before the Undersecretary of Environmental Management and Protection.[172] After filing, ExO representatives met with Secretary Pacchiano in May, at which meeting he assured them that the Project would be approved, but because of optics, the approval needed to wait until after the United Nations COP13 environmental conference, which Mexico was hosting, took place in December 2016.[173]

68. While ExO's petition sat waiting at SEMARNAT, Mr. Pacchiano continued to face more environmental controversies. For example, in late 2016, significant criticism reemerged against SEMARNAT regarding Parque Nacional Nevado del Toluca. Three years earlier, the park's protected status was removed, and several mines that were previously illegal were made legal. Then, in late 2016, SEMARNAT approved the commercial felling of trees in an area covering 32.59% of the previously protected area. The public outcry was immediate, with Mr. Pacchiano forced to travel to the area in an effort to highlight conservation efforts.[174]

69. In the meantime, Secretary Pacchiano's wife was elected to the Mexican senate in September 2018, for the Green Party and by the Green Party.[175] In the midst of her being

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169 Lozano WS1, ¶¶ 66-67.

170 [redacted]

171 **C-0008**, SEMARNAT Denial Decision, 7 April 2016

172 **C-0149**, Letter from ExO to SEMARNAT, 29 April 2016.

173 Lozano WS1, ¶ 75. Mr. Pacchiano and Mexico claim that this meeting never occurred. However, Dr. Lozano explained that he went to SEMARNAT for that meeting. Lozano WS1, ¶¶ 74-75; Lozano WS2, ¶ 25; Gordon WS1, ¶ 83.

174 For example, in late 2016, significant criticism reemerged against SEMARNAT regarding Parque Nacional Nevado del Toluca. Three years earlier, the park's protected status was removed, and several mines that were previously illegal were made legal. Then, in late 2016, SEMARNAT approved the commercial felling of trees in an area covering 32.59% of the previously protected area. The public outcry was immediate, with Mr. Pacchiano forced to travel to the area in an effort to highlight conservation efforts. **C-0419**, R. Vergara, "La cara oscura del Nevado de Toluca," Proceso, 8 December 2016.

175 Hrg. Day 2 Tr., Testimony of Rafael Pacchiano, 25 January 2022, p. 519:9-18 (Spanish Tr.), pp. 455:15-456:1 (English Tr.).

considered for the Mexican senate, Mr. Pacchiano approving a high-profile project could have affected her chances of being elected by the Green Party.

70. Such were the political pressures facing Mr. Pacchiano at the time the Project was under review, and they may explain why he was motivated to intervene in the process.

5. Key Aspects of the Content of the Denials Confirm [redacted] That the Reasons Given for the Denials Were Pretextual

71. Key aspects of the denial decisions, individually and collectively, are so manifestly incredible that an objective observer would have to conclude that the authority to decide whether to approve or deny the MIA was not exercised in good faith. None requires the Tribunal to second-guess or evaluate the science behind SEMARNAT's decisions. These are straightforward, objective indicators that provide further proof corroborating the testimony [redacted].

72. ***First*, SEMARNAT arbitrarily ignored scientific analysis filed by ExO in support of its Review Petition for the first Denial.** As discussed above,[176] SEMARNAT initially denied the MIA on 7 April 2016.[177] Later that month, on 29 April 2016, ExO petitioned SEMARNAT to review the First Denial and in support of that petition, submitted a set of 11 papers which it entitled a "Technical and Scientific Report."[178] This set of papers was important, as it directly responded to the purported reasons for the 2016 Denial and included papers from Dr. Newell, Dr. Clarke, Boskalis, and others.[179]

73. On 27 February 2017, SEMARNAT denied ExO's review petition and upheld its initial Denial.[180] The decision doing so was signed by Undersecretary Garcíarivas Palmeros, the same official [redacted] at Secretary Pacchiano's behest

176 *See supra*, ¶ 66.
177 **C-0008**, SEMARNAT Denial Decision, 7 April 2016.
178 **C-0151**, Technical and Scientific Report, 9 June 2016.
179 *See, e.g.*, **C-0151**, Technical and Scientific Report, 9 June 2016, pp. 3-28 (Dr. Newell), 32-37 (Dr. Clarke), 50-53 (William Castleton of Boskalis), 57-77 (Dr. Newell).
180 **C-0160**, SEMARNAT Denial Resolution, 27 February 2017.

(with respect to the First and Second Denials).[181] In upholding the First Denial, Ms. Garcíarivas Palmeros expressly dismissed the contents of the papers in the Technical and Scientific Report for reasons which are patently arbitrary, unreasonable, and unjust. Specifically, she:

a. Noted that the introduction to the Technical and Scientific Report had been signed by "John Oppermann," whereas an accompanying certificate verifying his signature was signed by "John Michael Oppermann";[182]

b. Suggested that Mr. Oppermann's signatures in the introduction and certificate were different;[183]

c. Seized on the fact that eight authors were listed in the brief filed in support of the review petition, while ten authors were listed in the introduction to the Technical and Scientific Report itself, notwithstanding that each individual paper in the Technical and Scientific Report makes clear who had produced it;[184] and

d. Rejected the papers authored by Dr. Newell, Dr. Clarke, and a third expert on marine biology solely because they were foreign nationals.[185] As the TFJA held, SEMARNAT failed to properly consider the papers in the manner required by law.[186]

74. The TFJA was rightly highly critical of SEMARNAT's conduct in this regard, finding that this dismissal "constitute[s] **an arbitrariness that violates the norms of due process**, to [ExO's] detriment."[187] While the TFJA's decision was grounded in Mexican law, the

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181 **C-0160**, SEMARNAT Denial Resolution, 27 February 2017, p. 49. Throughout the relevant period, Ms. Garciarívas Palmeros served as Undersecretary of Management for Environmental Protection from August 2015 until December 2018 and, in that capacity, reported directly to Mr. Pacchiano. Additionally, Ms. Garciarívas Palmeros had been appointed Undersecretary in August 2015 by Mr. Pacchiano when he became Secretary of SEMARNAT. *See* Pacchiano WS1, ¶ 19.

182 Claimant's Reply, ¶ 121(a); **C-0170**, TFJA Ruling, 21 March 2018, pp. 196-198, 201-203 (Spanish), pp. 180-183, 186-188 (English).

183 Claimant's Reply, ¶ 121(a); **C-0170**, TFJA Ruling, 21 March 2018, pp. 196-198, 201-203 (Spanish), pp. 180-183, 186-188 (English).

184 Claimant's Reply, ¶ 121(a); **C-0170**, TFJA Ruling, 21 March 2018, pp. 196-198, 201-203 (Spanish), pp. 180-183, 186-188 (English).

185 Claimant's Reply, ¶ 121(b); **C-0170**, TFJA Ruling, 21 March 2018, pp. 196-198, 208 (Spanish), pp. 180-183, 191 (English).

186 **C-0170**, TFJA Ruling, 21 March 2018, p. 208 (Spanish), p. 191 (English).

187 **C-0170**, TFJA Ruling, 21 March 2018, p. 186 (English), p. 201 (Spanish) ("[L]e asiste la razón a la parte actora al senalar que dicho proceder de la autoridad demandada constituye **una arbitrariedad conculcatoria de las normas del debido proceso**, en [el] perjuicio [de ExO]."") (emphasis added; original emphasis omitted). The fact that the TFJA saw through SEMARNAT's purported justifications for refusing to consider the Technical and Scientific Report and condemned the conduct further supports [redacted]

conduct it condemns—denying a petitioner the right to be heard and excluding evidence on contrived grounds or without just cause—also constitutes a breach of the international law principle of due process.

75. ***Second*, the Denials were based on a <u>100-fold inflation</u> of the *Caretta caretta* density in the Gulf of Ulloa.** In the 2016 Denial, SEMARNAT grossly inflated the population density for *Caretta caretta*, claiming that there are one to 28 *Caretta caretta* turtles per km² in certain areas of the Project, rising to 54 to 85 *Caretta caretta* turtles per km² in other areas.[188] This claim was clearly false and intentional.[189] It is now common ground that the leading study upon which SEMARNAT relies (the Seminoff Study)[190] found a population density across the area of 0.65 turtles per km² (ranging from 0.577 to 0.747 per km^2 over three years).[191]

76. SEMARNAT thus overstated the turtle density by approximately <u>100 times</u>. These inflated density figures were plainly intended to suggest that dredging would take place in a turtle-rich environment, and therefore that the Project presented a high risk to turtles. This

[redacted]

188 **C-0008**, SEMARNAT Denial Decision, 7 April 2016, pp. 220-221 (Spanish), pp. 219-220 (English).

189 In point of fact, [redacted] submitted an expert report on behalf of SEMARNAT in the current TFJA proceedings where she acknowledges that the Denial's *Caretta caretta* density figures were wrong, and that the actual average number was 0.65 per km^2. This confirms the pretextual nature of this figure (and of the decision itself) [redacted] Specifically, [redacted] was asked for [redacted] views on the question: ¿[E]l valor de 1 a 85 tortugas por km^2 de la Resolución Impugnada, es válido para reflejar la densidad de población de la tortuga *Caretta caretta* . . . ? ("[I]s the value of 1 to 85 turtles per km2 in the [2018 Denial] valid to reflect the *Caretta caretta* turtle's population density . . .?"). [redacted] answer was: "**No**. De conformidad con Seminoff 2014, la densidad de población de la tortuga *Caretta caretta* en el Golfo de Ulloa es **de 0.577 a 0.747 tortugas por Km^2, con una media de 0.650 tortugas *Caretta caretta* por km^2**." ("**No**. According to Seminoff 2014, the *Caretta caretta* turtle's population density in the Gulf of Ulloa is **0.577 to 0.747 turtles per km^2 with an average of 0.650 *Caretta caretta* turtles per km^2**."). **C-0453**, [redacted] p. 40 (emphasis added).

190 *See* Claimant's Memorial, ¶ 272 (b).

191 **C-0072**, J.A. Seminoff, et al., "Loggerhead sea turtle abundance at a foraging hotspot in the eastern Pacific Ocean: implications for at-sea conservation," Endangered Species Research, 2014, p. 213. Further, the maximum recorded population density of *Caretta caretta* ever reported in a scientific study is 3.5 turtles per km²—and that was in the Chesapeake Bay in the United States, not the Gulf of Ulloa. *See* **C-0072**, J.A. Seminoff, et al., "Loggerhead sea turtle abundance at a foraging hotspot in the eastern Pacific Ocean: implications for at-sea conservation," Endangered Species Research, 2014, p. 215.

suggestion is so misleading and wrong that it is consistent only with the use of turtle density as an excuse to deny the Project.[192]

77. What is more, in its decision quashing the First Denial, the TFJA expressly admonished SEMARNAT for using incorrect information regarding the turtle presence in the Project area.[193] Undeterred, SEMARNAT nonetheless relied on these inflated figures in the 2018 Denial,[194] continuing to turn a blind eye to ExO's submissions which had identified this error.[195] Indeed, the 2018 Denial did not even acknowledge ExO's points and instead resolutely clung to figures that SEMARNAT had to know were inaccurate and inflated.[196]

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192 *See, for example*, Claimant's Memorial, ¶¶ 268, 272-273, 275, as well as Appendix B to Claimant's Memorial, ¶ 11.

193 "De lo anterior, se observa con toda claridad que **la promovente sí consideró de forma expresa la existencia de tortugas marinas *Caretta caretta* (caguama) en el área del proyecto**, . . . y que además, contrario a lo que afirma la autoridad demandada ofreció datos estadísticos y cuantitativos al respecto. Lo anterior, denota la falta de estudio por parte de la autoridad demandada, quien . . . aportó una insuficiente motivación en relación a este punto . . . de ahí que la citada resolución también devenga ilegal por los motivos expresados." ("From the above, **it is clear that the plaintiff did expressly consider the presence of the Caretta caretta (loggerhead) sea turtles in the project area**, . . . and that furthermore, contrary to what the defendant authority asserts, it submitted statistical and quantitative data in this respect. The foregoing denotes the lack of study by the defendant authority, who . . . provided insufficient substantiation in connection with this point . . . hence the aforementioned resolution also becomes illegal"). **C-0170**, TFJA Ruling, 21 March 2018, p. 176 (Spanish), p. 165 (English) (emphasis added; original emphasis removed).

194 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 290-291.

195 *For example*, in **C-0019**, Amendment to the annulment petitions of the 2016 Denial, 6 June 2017, pp. 19-21; **C-0151**, Technical and Scientific Report, 9 June 2016, pp. 15-26; and **C-0021**, Closing arguments for the annulment petition of the 2016 Denial, 7 September 2017, pp. 9-12, 28, 32.

196 The relevant passages start at the bottom of page 294 of the 2018 Denial, where DGIRA states that it is setting out its conclusions: "[E]sta DGIRA de la información analizada en los párrafos que anteceden, puede concluir que científicamente el hábitat corresponde a toda la columna de agua desde la superficie hasta el fondo marino . . . Las tortugas *Caretta caretta* llevan a cabo una extensa migración de desarrollo, que a menudo viaja desde áreas de anidación en Japón a hábitats de alimentación en el Océano Pacífico Oriental, como lo es el Golfo de Ulloa como hábitat marino en etapa de su ciclo de vida como juveniles al ocupar el espacio tridimensional del Golfo de Ulloa (superficie marina, superficie bentónica o fondo marino y la columna de agua), con una abundancia de individuos de entre 28 a 85 tortugas *Caretta caretta* por km^2 ("[T]his DGIRA, based on information analyzed in the preceding paragraphs, concludes that the habitat of turtles scientifically corresponds to the entire water column, from the surface to the bottom of the sea . . . *Caretta caretta* turtles undergo an extensive development migration, since they often travel from their nesting areas in Japan to foraging habitats in the Western Pacific Ocean, such as the Gulf of Ulloa, which constitutes their marine habitat during their juvenile life stage because they occupy the tridimensional space of the Gulf of Ulloa (marine surface, benthos surface or seabed and water column), and which has a specimen abundance between 28 and 85 *Caretta caretta* per km^{2}"). **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 294-295 (emphasis omitted).

78. Mexico finally addressed the erroneous density figures for the first time in its Rejoinder (after relying on them without qualification in the Counter-Memorial, despite accepting in the TFJA proceedings that they are wrong).[197] After criticizing Odyssey for making the point at all, Mexico initially tried to downplay the error by arguing that the density data was included in the 2016 and 2018 Denials only to support the conclusion that the Gulf of Ulloa is the habitat of the *Caretta caretta* species, before suggesting that references in both the 2016 and 2018 Denials to "abundancia" (*i.e.*, density) were innocent "error[es] involuntarios."[198] This explanation is just not credible and is merely an *ex-post-facto* attempt to obscure the pretextual nature of the *Caretta caretta* figure inflation.

79. ***Third*, SEMARNAT ignored its own recent and highly relevant study assessing the resilience of *Caretta caretta* to fishing by-catch**. Mexico claims that SEMARNAT denied the MIA because of the risk of *Caretta caretta* mortalities and the impact those mortalities would have on the species.[199] That kind of conclusion plainly required an evaluation of the species-level impact of potential mortalities, which SEMARNAT did not do.[200] As explained by Professor Flores-Ramírez,[201] and in Odyssey's Reply Memorial,[202] SEMARNAT had previously performed exactly that kind of modelling and presented it in a study entitled "Sustainable fishing exploitation and protection of the loggerhead sea turtle in the Gulf of Ulloa." Based on the study, SEMARNAT proposed that *Caretta caretta* fishing by-catch should be limited to 200 individuals per year in order not to affect the

197 Respondent's Rejoinder, ¶¶ 41-44.

198 Respondent's Rejoinder, ¶ 43, fn. 1 (characterizing the density figures as an "involuntary error by the DGIRA").

199 *See, e.g.,* Respondent's Counter-Memorial, ¶¶ 242, 268, 283-284, 308, 320-323, 330-332, 366-368.

200 The TFJA criticized SEMARNAT for using imprecise and insufficient data in reaching its decision that the *Caretta caretta* population would be affected: "Sin embargo, cabe señalar que esta Juzgadora advierte que dichos señalamientos [those used by SEMARNAT to support its conclusion of risk to the species *Caretta caretta*] resultan **imprecisos e insuficientes** para considerar satisfecho el requisito de motivación que debe de observar la determinación de la autoridad, en tanto que carecen de algún sustento científico que corrobore sus afirmaciones." ("However, it should be noted that this Court finds that such statements are **inaccurate and insufficient** to consider the requirement of substantiation that the authority's decision shall observe as fulfilled, since they lack any scientific support to corroborate its assertions."). **C-0170**, TFJA Ruling, 21 March 2018, p. 147 (Spanish), p. 138 (English).

201 S. Flores ER2, ¶¶ 11, 33-37.

202 Claimant's Reply, ¶¶ 35-37.

viability of the *Caretta caretta* species.[203] This limit was adopted in a subsequent policy,[204] signed by Secretary Pacchiano, which implemented a Regional Program for the Ecological and Marine Management in the North Pacific.

80. Even though this highly relevant study was undertaken and published by SEMARNAT during Mr. Pacchiano's tenure as Secretary of SEMARNAT, SEMARNAT ignored it completely and did not cite to it in either the First or Second Denial. The only reason SEMARNAT's study came to light is because Claimant found a reference to it in a publicly available INAPESCA (the Mexican fishing authority) document and requested Mexico to produce it in these proceedings.

81. On any basis, the study should have been considered, not least because of the TFJA's instruction to SEMARNAT to assess the Project's MIA using "los datos científicos más fidedignos disponibles,"[205] which plainly would include SEMARNAT's own recent study on the impact of *Caretta caretta* mortalities. In particular, if the Denials had actually been based on the impact on *Caretta caretta* as a species, which it was not [redacted], then SEMARNAT should have considered this study. The fact that this study formed no part of either Denial is not accidental. Indeed, this confirms [redacted] that the reference to the Project's supposed impact on *Caretta caretta* was pretextual.[206]

82. ***Fourth, in its Second Denial, SEMARNAT disingenuously equated the Project's proposed dredging with deep seabed mining to justify the application of the precautionary principle.***[207] By so doing, SEMARNAT relied upon four studies that considered the impact of deep seabed mining,[208] none of which was discussed (or even mentioned) in the First

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203 **C-0347**, INAPESCA Technical Opinions, 23 March 2015 and 3 June 2016, p. 9.

204 **C-0438**, Diario Oficial de la Federación, 9 August 2018, p. 140.

205 **C-0170**, TFJA Ruling, 21 March 2018, p. 212 (Spanish), p. 194 (English) (ordering the TFJA to issue a new resolution using "the most reliable scientific data available").

206 *See, e.g.*, [redacted]

207 For example, **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 318, 508 (Spanish), pp. 317-318, 505 (English).

208 Appendix B to Claimant's Memorial, ¶ 20; **C-0168**, K.A. Miller, et al., "An Overview of Seabed Mining Including the Current State of Development, Environmental Impacts, and Knowledge Gaps," Frontiers in Marine Science, ResearchGate, 10 January 2018; **C-0156**, J.M. Durden, et al., "A procedural framework for

Denial. That difference is telling and consistent with the testimony [redacted][209]

83. The comparison to deep seabed mining was the cornerstone for SEMARNAT's purported finding that the Project risked irreparable harm and that consequently, the precautionary principle should be applied, as well the conclusion that:[210]

> [L]a pérdida de biodiversidad será inevitable porque la minería directamente destruye el hábitat e indirectamente degrada grandes volúmenes de la columna de agua y áreas del fondo marino debido a la generación de plumas de sedimentos enriquecidas con metales biodisponibles.

84. Completely absent in the 2018 Denial, however, is any attempt by SEMARNAT to explain, let alone evaluate, how dredging sand on the continental shelf in 80 meters average water depth is comparable to the deep seabed mining projects considered in the Miller, Durden, and Van Dover studies,[211] which refer to deep seabed mining at depths below 2,000 meters using **different techniques** to mine polymetallic nodules, cobalt crusts, and seafloor massive sulfides associated with hydrothermal vents.[212] In particular, these

robust environmental management of deep-sea mining projects using a conceptual model," Marine Policy 84, 2017; **C-0166**, J.M. Durden, et al., "Environmental Impact Assessment Process for Deep-Sea Mining in 'the Area'," Marine Policy 87 (2018); **C-0162**, Van Dover, et al., "Biodiversity loss from deep-sea mining," Nature Geoscience, 1 July 2017.

209 [redacted]

210 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 508 (Spanish), p. 505 (English) ("[B]iodiversity loss will be unavoidable, because mining directly destroys the habitat and indirectly deteriorates great volumes of the water column and seabed areas, given the generation of sediment plumes enriched with bioavailable metals.").

211 Appendix B to Claimant's Memorial, ¶¶ 20-22; **C-0166**, J. M. Durden, et. al., "Environmental Impact Assessment Process for Deep-Sea Mining in 'the Area'," Marine Policy 87 (2018); **C-0162**, Van Dover, et al., "Biodiversity loss from deep-sea mining," Nature Geoscience, 1 July 2017; **C-0168**, K, A. Miller, et al., "An Overview of Seabed Mining Including the Current State of Development, Environmental Impacts, and Knowledge Gaps," Frontiers in Marine Science, ResearchGate, 10 January 2018; **C-0156**, J.M. Durden, et al., "A procedural framework for robust environmental management of deep-sea mining projects using a conceptual model," Marine Policy 84, 2017; **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 317-318.

212 Deltares, for example, explains that habitats studied by Miller "typically exist below 2000 m. There is no doubt that the novel mining techniques described in the [Miller Study] are very destructive of extremely sensitive and slow forming habitats, that are not well understood. . . . This is in contrast with the mining technique being applied in the ExO project, which is well understood, and [a] common approach used

studies refer to a type of mining that involves the "cutting of seafloor features" and "crushing of seafloor crusts mostly using remotely operated vehicles."[213] This is nothing like Don Diego where a dredger would be used to extract sand at depths of between 60 to 80 meters.

85. As important, SEMARNAT also failed to evaluate a single study on the environmental impacts of dredging on shallow marine sediment projects (including the papers contained in the Technical and Scientific Report that formed part of the MIA record). This was no accidental oversight: SEMARNAT's objective was to suggest that the Project would generate the same impact as projects using different technology in fundamentally different habitats and geologic settings 2,000 meters or more below the sea level. As Mr. Pliego explained:[214]

> La resolución de la SEMARNAT incluye la comparación de varios proyectos que justamente no son comparables porque son de minería profunda, que son de actividades que se realizan a más de 200 metros, muchísimo más. Y que utilizan químicos y que utilizan otros mecanismos, y que no son comparables con el proyecto. Incluso algunos de ellos, que presenta la SEMARNAT como argumento para decir que es riesgoso, se realiza alrededor de ventilas hidrotermales con un impacto seguramente severo. Es decir, hay proyectos a nivel internacional pero que no tienen nada que ver con el proyecto de dragado que he analizado.

86. Indeed, the comparison is so palpably wrong that it cannot have been made in good faith. The reason for including such a far-fetched argument is that after the TFJA overturned the First Denial, Mr. Pacchiano ordered DGIRA to find new and additional reasons to

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worldwide to dredge for maintenance purposes or to extract aggregates in far shallower water depths." Deltares ER1, Section 5.1, pp. 36-37.

213 Deltares ER1, Section 5.1, p. 36.

214 Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, pp. 1012:10-1013:2 (Spanish Tr.), p. 872:5-16 (English Tr.) ("The Resolution of SEMARNAT includes a comparison of several projects which are not comparable because they're deep mining, which are activities carried out over 200 meters in depth, and much more, and they use chemical agents and other mechanisms and they aren't comparable with this Project. And one of them presented by SEMARNAT as an argument to say that it's risky, is carried out in proximity to hydrothermal vents at a tremendous depth with a very severe impact, so that there are projects which exist internationally would have nothing to do with the dredging projects which I analyzed.").

justify denying the Project. [redacted] ."[215]

87. ***Finally, to justify the denial of ExO's MIA, SEMARNAT put forth a new and tendentious interpretation of Article 35(III)(b) of LGEEPA that conflicts with its prior practice.*** Under Mexican law, the legal standard for denying, approving, or approving a MIA with conditions is set out in Article 35(III) of LGEEPA.[216] ExO's MIA was denied under Article 35(III)(b) of LGEEPA, on the alleged basis that the Project would affect the endangered *Caretta caretta* turtle species directly (by killing turtles with the dredger) and indirectly (by affecting the turtles' habitat).[217] However, SEMARNAT did not explain how the entire *Caretta caretta* species would have been affected.[218]

88. Relying on SOLCARGO, Mexico tries to justify that decision by arguing that Article 35(III)(b) is engaged whenever a project affects an *individual specimen* of a protected species.[219] Critically, at the hearing, SOLGARGO disowned this interpretation of Article 35(III)(b)[220] because it is so obviously wrong, as explained by Dr. Herrera.[221] Unsurprisingly, it is also

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215 [redacted]

216 Claimant's Memorial, ¶ 86; **C-0014**, LGEEPA, 5 June 2018, art. 35; Herrera ER1, ¶ 19; Respondent's Counter-Memorial, ¶ 168 (citing SOLCARGO ER1, ¶¶ 110-113).

217 It is undisputed that the 2016 Denial was based only on the Project's purported impact on *Caretta caretta* and other species of sea turtles. *See* Respondent's Counter-Memorial, ¶¶ 6, 320-323, 332, 366. Up until Mexico's Rejoinder, it appeared to be common ground that this was the sole basis for the 2018 Denial as well. *See* Claimant's Reply, ¶¶ 19-21. While in an effort to justify the 2018 Denial, Mexico appears to have shifted its argument, the point being made here remains.

218 Claimant's Memorial, ¶¶ 152-155.

219 Respondent's Counter-Memorial, ¶¶ 323-325, 366-367; SOLCARGO ER1, ¶¶ 188-190; Second Expert Report of SOLCARGO, dated 7 October 2021 ("**SOLCARGO ER2**"), ¶¶ 77-80.

220 Indeed, when asked specifically about whether the death of a single turtle would trigger the application of Article 35(III)(b), SOLCARGO answered that they had never made such a statement, thus disavowing their position. Hrg. Day 3 Tr., Testimony of SOLCARGO, 26 January 2022, pp. 864:16-865:9 (Spanish Tr.) ("P: Su posición, si la entiendo bien, es que la afectación a una especie se verifica incluso si se produce sobre un solo individuo, en este caso podemos decir sobre una sola tortuga Caretta caretta . . . . SEÑOR DEL RAZO OCHOA: Sí bueno, no hicimos mención a que, como lo está estableciendo si se afectara a una sola tortuga tendría verificativo este supuesto, este -- así que me cuesta un poco contestar con un sí o un no a la pregunta."), pp. 753:7-19 (English Tr.) ("Q. Your position, if I understand correctly, is that the impact on a species is verified even when it impacts a single individual; in this case, we could say on one single Caretta caretta turtle. . . . A. (Mr. del Razo) Well, we didn't point out, as you are now saying, about impacting or affecting a single turtle, that that would be verifying this assumption. So I find it a little bit difficult to answer with a clear 'yes' or 'no'.").

221 Herrera ER1, ¶¶ 19-21, 56; Herrera ER2, ¶¶ 49-62.

inconsistent with the approach taken by SEMARNAT when reviewing other MIAs or in its turtle mortality by by-catch study mentioned above.[222]

89. Dr. Herrera identifies ten cases where SEMARNAT specifically approved a project affecting individuals of an endangered species because there was not a species-level effect.[223] For instance, SEMARNAT granted the MIA for the Puerto de Manzanillo Project[224] despite finding that the project might affect several individuals of a protected species, reasoning:[225]

> [L]as especies representadas en este sistema ambiental se encuentran ampliamente representadas en el sistema de Marismas nacionales presentes en el Estado de Colima de manera que al perder vegetación únicamente se estará perdiendo individuos y no especies así como tampoco, se encuentra en peligro el ecosistema tipo.

90. Mexico and its experts criticize Dr. Herrera's approach by claiming that the other 10 projects are completely different from the Don Diego Project.[226] But Mexico's argument

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222 As mentioned above (*see supra,* ¶¶ 79-81), SEMARNAT had published a previous study stating that the death of 200 turtles a year would not put at risk the *Caretta caretta* species in the Gulf of Ulloa. Here, although SEMARNAT claims that the Project would affect *Caretta caretta* as a species, it fails to even mention that study.

223 Herrera ER1, ¶ 56; Herrera ER2, ¶¶ 63-64, fn. 58; **C-0345**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Operación y abandono del recinto minero El Concheño," 22 May 2015, p. 56; **C-0346**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Operación y abandono del recinto minero Tayahua," 9 May 2016, pp. 44-45; **C-0348**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Desarrollo Recinto Minero Ana Paula," 3 April 2017, pp. 78-79; **C-0349**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Proyecto de Explotación Minera 'Los Gatos', Satevó, Chihuahua," 17 July 2017, p. 95; **C-0350**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Central La Jacaranda," 2 August 2017, pp. 39-40; **C-0351**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Plantas Metalúrgicas," 17 April 2018, p. 67; **C-0352**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Planta CIL Los Filos," 29 August 2018, pp. 43-44; **C-0353**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Proyecto Minero Monterde," 2019, p. 90; **C-0354**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Unidad Minera Charcas de Industrial Minera México, S.A. de C.V.," 16 July 2020, p. 52.

224 This project entailed the extension of the port of Manzanillo, and in order to do that, there was a need to dredge an area of land that would have caused the removal and death of an endangered species of plants. SEMARNAT approved this project subject to mitigation measures and finding that the species was not endemic to the are where it would have been removed. **HH-0009**, Oficio S.G.P.A./DGIRA.DDT,-1383.05, 22 November 2005, p. 101.

225 Herrera ER1, ¶ 56, citing **HH-0009**, Oficio S.G.P.A./DGIRA.DDT,-1383.05, 22 November 2005, p. 101.

226 Respondent's Rejoinder, ¶¶ 24, 160-162, 164; SOLCARGO ER2, ¶¶ 111-144.

misses the point. Odyssey is not submitting that they are identical projects, but rather that SEMARNAT has consistently adopted the legal interpretation that a project should not be denied under Article 35(III)(b) if it merely affects some individuals of a NOM-059 endangered species. This is the legal standard that Mexico intentionally misapplied here to artificially deny the Don Diego Project.

91. Subverting the consistently applied standard for ExO's MIA is a paradigmatic example of discriminatory and arbitrary treatment. Additionally, the differential treatment also corroborates [redacted] that never before had a project been denied based upon the risk of its alleged impact on a single protected individual member of the species:[227]

> Si se llegara a utilizar ese párrafo [Articulo 35(III)(b) de la LGEEPA] . . . entonces cualquier proyecto, cualquier proyecto, obra o actividad que se presentaba al proceso de evaluación de impacto ambiental que involucrara un individuo que esté dentro de la norma 059, se podría tomar que está afectando la especie y entonces ***la SEMARNAT prácticamente negaría todos los proyectos que afectaran especies que estaban licitadas en la norma 059-2010.***

92. In an effort to contradict [redacted] Respondent purports to identify one project that was denied under Article 35(III)(b) of LGEEPA, the Termoeléctrica Rosarito,

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[227] Hrg. Day 7 Tr., [redacted] 10 May 2022, pp. 1864:9-1865:1 (Spanish Tr.), pp. 1669:19-1670:8 (English Tr.) ("If that paragraph were to be used, . . . any project, any project, any work or activity that was subject to the environmental evaluation process that involved an individual listed in the Provision of the norm 059 would be considered to be affecting the species, so the ***SEMARNAT would deny all projects that would adversely impact species listed in that provision***."). At the hearing, [redacted] selected to imply the Project would affect *Caretta caretta* as a species. Hrg. Day 7 Tr., [redacted] 10 May 2022, pp. 1845:19-1846:12 (Spanish Tr.), p. 1655:4-18 (English Tr.). However, this is not what [redacted]. Hrg. Day 2 Tr., [redacted], 25 January 2022, pp. 388:11-389:11 (Spanish Tr.), pp. 333:16-334:13 (English Tr.). This wasn't the first time that Respondent tried this trick of decontextualizing [redacted]. Respondent showed this same part of the quote to Mr. Pliego, who also explained that the possible impact would be limited and explained how the mitigation measures and other project characteristics made the impact scenario unlikely (and in fact chastised Respondent for decontextualizing [redacted]). Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, pp. 999:14-1001:1 (Spanish Tr.), pp. 861:6-862:10 (English Tr.).

by a regional office of SEMARNAT [redacted].[228] But as Dr. Herrera explained, that case actually confirms how SEMARNAT's interpretation of Article 35(III)(b) was intentionally distorted in this case to provide a pretext to deny the Don Diego Project's MIA.[229] This is because, in Termoeléctrica Rosarito, SEMARNAT denied the MIA on the basis that it would "exterminate" two endangered species that were endemic to the area where that project would be developed.[230] This is evident from SEMARNAT's denial decision for Termoeléctrica Rosarito, which reads in relevant part as follows:[231]

> [L]a construcción del proyecto, afectará de manera directa a las especies vegetales *Ferocactus viridescens* (Amenazada) y *Opuntia califórnica* var. *rosarica* (Rara), **ambas endémicas, las cuales por su distribución extremadamente restringida . . . y las condiciones particulares en que habitan** (franja costera con clima mediterráneo) **son susceptibles de exterminio . . . .**

93. Contrary to Mexico's argument, this finding reaffirms that a MIA can only be denied on Article 35(III)(b) grounds when there is a substantial risk of deleterious impact upon the entire species, not merely the hypothetical risk of affecting some individuals. This is particularly true where, as Dr. Herrera confirms, there are mitigation measures that could be implemented to minimize any such risk for any individuals.[232]

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228 The Termoeléctrica Rosarito project consisted in the building of a thermoelectric power station in an area in the municipality of Ensenada, Baja California Sur. This project would have been constructed in an area where there were two protected species of plants that were endemic to the area of the project and that would have been destroyed by the construction of the project. *See* **SOLCARGO-0042**, Oficio SGPA.-DGIRA,-000959 emitido por la DGIRA de 1 de abril de 2002, p. 4.

229 Hrg. Day 3 Tr., Testimony of Hector Herrera, 26 January 2022, pp. 724:6-726:8 (Spanish Tr.), pp. 636:14-638:7 (English Tr.).

230 Hrg. Day 3 Tr., Testimony of Hector Herrera, 26 January 2022, pp. 724:6-726:8 (Spanish Tr.), pp. 636:14-638:7 (English Tr.).

231 **SOLCARGO-0042**, Oficio SGPA.-DGIRA,-000959 emitido por la DGIRA de 1 de abril de 2002, p. 4 ("[T]he construction of the project will directly affect the vegetal species *Ferocactus viridescens* (Threatened) and *Opuntia californica* var. *rosarica* (Rare), **both endemic, which, because of their extremely restricted distribution . . . and the particular conditions in which they reside** (coastal strip with Mediterranean climate), **are susceptible to extermination** . . . ." (counsel translation; bold emphasis added)).

232 Herrera ER1, ¶¶ 86-89.

6. SEMARNAT's Response to the TFJA Decision Corroborates the Evidence [redacted] That the Denial Was Arbitrary[233]

94. In its 21 March 2018 decision quashing the 2016 Denial, the TFJA[234] unanimously found that SEMARNAT had failed to undertake a proper scientific evaluation of ExO's MIA.[235] The TFJA's ruling provides further evidence that SEMARNAT failed to accord due process to ExO and that the Denials were the product of arbitrary conduct by SEMARNAT. Therefore, the legal significance of the TFJA decision lies in its evidentiary value in proving that a NAFTA breach has occurred. Specifically, the TFJA found that:

a. SEMARNAT failed to properly evaluate, and the Denial was not premised, on the actual circumstances of sea turtles in relation to the Project, in particular at the depth of 80 meters;[236] and

b. SEMARNAT failed to evaluate the mitigation measures ExO had proposed, including turtle protection measures such as turtle deflectors and tickler chains; the return of non-economic materials via the Eco-tube near the seabed floor;[237] otherwise limiting the "plume"; and the "Building with Nature" techniques proposed to promote rapid regeneration and recolonization of the seabed.[238]

95. In reaching these conclusions, the TFJA found, among other things:

a. ". . . the plaintiff **is right** . . . that the defendant did not adequately reason its resolution regarding why it considered that the seafloor dredging activities would imply a significant environmental impact to the habitat of the loggerhead sea

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233 This section answers Tribunal Question No. 5.

234 Notably, despite professing to have appeared before the TJFA multiple times, Mexico's environmental legal experts, SOLCARGO, did not know the number of Justices on that court. Hrg. Day 3 Tr., Testimony of SOLCARGO, 26 January 2022, p. 877:8-16 (Spanish Tr.) ("P: ¿Sabe cuántos magistrados integran el pleno del tribunal? SEÑOR DEL RAZO OCHOA: Pues esa pregunta se la -- creo que la tiene más precisa Juan Pedro. Yo estoy más familiarizado con la sala ambiental. Si quieres contestar. SEÑOR [Juan Pedro] MACHADO ARIAS: Sí, no, son numerosos. El número exacto no lo tengo, pero sí son varios magistrados."), p. 674:4-11 (English Tr.) ("Q. Do you know how many Magistrates are on that chamber? A. (Mr. del Razo) Well, I think that is something that Juan Pedro knows more about. I'm more familiar with the environmental chamber. A. ([Juan Pedro] Mr. Machado) Well, there are very many. I don't have the exact figure, but there are several Magistrates.").

235 **C-0170**, TFJA Ruling, 21 March 2018. The press reported that SEMARNAT was not notified until mid-April 2018. **C-0171**, E. Méndez, "Negarán dragado de arena en Ulloa; resolución de la Semarnat," Excelsior, 19 April 2018.

236 **C-0170**, TFJA Ruling, 21 March 2018, pp. 108-114, 161-162 (Spanish), pp. 109-111, 148 (English).

237 Non-economic material referred to the sands, conchs, rocks, and sea water that would be returned to the seabed once the phosphate rock had been separated. *See* discussion at **C-0002**, MIA, 21 August 2015, pp. 39-48.

238 **C-0170**, TFJA Ruling, 21 March 2018, pp. 166-167, 177-179 (Spanish), pp. 151-152, 165-166 (English).

turtle and of other species, so that **the mitigation activities proposed by the plaintiff in its MIA request would not be sufficient to protect the habitat of those species**";[239]

b. ". . . the statements made by the defendant authority . . . are ambiguous, generic and imprecise, by **not having been based on reliable scientific data**, which creates uncertainty as to their viability";[240]

c. ". . . the defendant authority . . . dismissed outright the mitigation measures proposed by the plaintiff, **without specifying the reasons it took into consideration, as well as the scientific and/or environmental data on which it based such decision**, thus making only a series of dogmatic statements in its attempt to justify the denial of the authorization of the MIA . . . . **once again, the defendant authority failed to analyze the information and arguments submitted by the plaintiff in the MIA**";[241]

d. ". . . **the authority . . . only considered the habitat of the turtle species . . . in a two-dimensional plane** (latitude and longitude) . . . **without considering that the dredging activity would be carried out on the seabed** . . ., and therefore, it failed to analyze the petitioner's argument in the sense that the dredging would be carried out at a depth greater than that in which the habitat is located";[242] and

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239 **C-0170**, TFJA Ruling, 21 March 2018, p. 151 (English), p. 166 (Spanish) (". . . **le asiste la razón** a la parte actora, . . . que la enjuiciada no motivó adecuadamente su resolución respecto de por qué consideró que las actividades de dragado del fondo marino de trato, implicarían un impacto ambiental significativo al hábitat de la tortuga caguama y las otras especies, de forma que **las actividades de mitigación propuestas por la actora en su solicitud de MIA, no resultarían suficientes para proteger el hábitat de esas especies**.").

240 **C-0170**, TFJA Ruling, 21 March 2018, p. 151(English), p. 166 (Spanish) (". . . las afirmaciones formuladas por la autoridad demandada . . . resultan ambiguas, genéricas e imprecisas, **al no haberse basado de igual forma, en datos científicos fidedignos**, lo cual crea incertidumbre respecto de su viabilidad.") (emphasis added).

241 **C-0170**, TFJA Ruling, 21 March 2018, p. 166 (English), p. 178 (Spanish) ("la autoridad demandada . . . en la resolución recurrida desestimó de plano las medidas de mitigación propuestas por la promovente, hoy actora, **sin precisar las razones que tomó en consideración, así como los datos científicos y/o ambientales en los que sustentó dicha determinación**, realizando de ese modo únicamente una serie de afirmaciones dogmáticas en su intento de justificar la negativa de la autorización de la MIA, solicitada por la empresa actora. . . . **se reitera que la autoridad demandada fue omisa en analizar la información y argumentos de la actora expuestos en la MIA**") (original emphasis removed; emphasis added).

242 **C-0170**, TFJA Ruling, 21 March 2018, p. 165 (English), pp. 179-180 (Spanish) (". . . **la autoridad . . . sólo consideró el hábitat de las especies de tortugas en cuestión en un plano de dos dimensiones** (latitud y longitud) . . . **sin considerar que la actividad de dragado se realizaría en el lecho marino**, . . . y por consiguiente, omitó analizar el argumento del solicitante en el sentido de que el dragado se realizaría a una profundidad mayor a aquella en la cual se ubica el hábitat que en general corresponde a las especies de tortuga que ahí se desarrollan.").

e. "It should be noted that all of the above **denotes a lack of study by the environmental authority with respect to the issues raised in the Environmental Impact Statement . . . .**"[243]

96. These findings corroborate [redacted].[244]

97. Following the annulment of the First Denial, the TFJA's strident criticisms plainly required SEMARNAT to analyze ExO's MIA afresh, particularly with respect to those matters it ignored in its first decision, such as the mitigation measures ExO had proposed. This was made clear by the TFJA when it ordered SEMARNAT to issue a new resolution:[245]

> [I]n view of the **illegality observed** . . ., it is appropriate to declare the NULLITY of the contested resolution . . . for the purpose that the authority, within a period of four months from the date this ruling is final, **issues a new resolution**, that resolves the request for authorization of the MIA of the plaintiff in terms of Article 35, fourth paragraph, of the General Law on Ecological Balance and Environmental Protection, **in which it analyzes each and every one of the aspects that were exposed in the application and its scope by the plaintiff, including the mitigation measures proposed by**

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243 **C-0170**, TFJA Ruling, 21 March 2018, p. 168 (English), p. 181 (Spanish) ("Cabe señalar que todo lo anterior, **denota una falta de estudio por parte de la autoridad ambiental respecto de las cuestiones planteadas en la Manifestación de Impacto Ambiental**").

244 [redacted]

245 **C-0170**, TFJA Ruling, 21 March 2018, p. 194 (English), pp. 211-212 (Spanish) ("[A]nte la **ilegalidad advertida** . . . lo procedente es declarar la NULIDAD de la resolución impugnada así como la originalmente recurrida, para el efecto de que la autoridad, dentro del plazo de cuatro meses contados a partir de que el presente fallo quede firme, **emita una nueva resolución**, que resuelva la solicitud de autorización de la MIA de la actora en términos del artículo 35, cuarto párrafo, de la Le General del Equilibrio Ecológico y la Protección al Ambiente, **en la que analice todos y cada uno de los aspectos que fueron expuestos en la solicitud y su alcance por la actora, incluyendo las medidas de mitigación propuestas por la promovente en la MIA**, y que son detalladas en la ampliación de demanda del presente juicio, **así como también analice, en su caso, otras medidas adicionales de prevención y mitigación** . . . y hecho lo anterior, la autoridad demandada **funde y motive adecuadamente su determinación, con base en los datos científicos más fidedignos disponibles,** con plena libertad en el uso de sus facultades y atribuciones, los aspectos ya comentados y precisados en el presente fallo, específicamente que se pronuncie respecto del argumento de la actora en el sentido de que las actividades de dragado del proyecto sometido a su consideración, se realizarían a una profundidad que no afectaría el hábitat de las tortugas marinas en cuestión, dejando a salvo las facultades de la Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT) para resolver lo que en derecho corresponda.") (original emphasis removed; emphasis added).

> **the petitioner in the MIA,** and that are detailed in the amended claim of this claim, **as well as also analyze, where appropriate, other additional prevention and mitigation measures** . . . and having done so, the defendant authority **adequately furnishes the legal basis and grounds of its determination**, **based on the most reliable scientific data available,** with full freedom in the use of its powers and attributions, the aspects already discussed and specified in this ruling, specifically that it rules on the argument of the plaintiff in the sense that the dredging activities of the project submitted for its consideration would be carried out at a depth that would not affect the habitat of the sea turtles in question, leaving safe the powers of the Secretariat of Environment and Natural Resources (SEMARNAT) to resolve what in law corresponds.

98. And also:[246]

> [T]he Law allows the utilization of natural resources within the habitat of species, even endangered species, as long as the conditions necessary for the survival and development of such species are not altered; therefore, **in order for the authority to comply with the required substantiation and justification, it shall analyze all the aspects that the plaintiff submitted in the MIA request, within the administrative procedure, including those that seek to prove that the dredging activities would be carried out at a depth where the turtles would not be affected in their habitat.**
>
> In this regard, this Court considers it appropriate to specify that Article 35, fourth paragraph, of the General Law on Ecological Balance and Environmental Protection (previously analyzed) empowers the defendant authority not only to analyze in their entirety the mitigation measures proposed by the petitioner for

[246] **C-0170**, TFJA Ruling, 21 March 2018, p. 171 (English), pp. 184-185 (Spanish) ("[L]a Ley permite que se aprovechen recursos naturales dentro del hábitat de especies, incluso en peligro de extinción, siempre que no se alteren las condiciones necesarias para que subsistan y se desarrollen tales especies, de manera que **para que la autoridad cumpla con la debida motivación y fundamentación que le es exigible, debe analizar todos los aspectos que el actor expuso en la solicitud de MIA, dentro del procedimiento administrativo, incluyendo aquellos que pretenden demostrar que las actividades de dragado se llevarían a cabo a una profundidad en la que las tortugas no se verían afectadas en su hábitat**. Al respecto, esta Juzgadora considera oportuno precisar que el artículo 35, cuarto párrafo, de la Ley General del Equilibrio Ecológico y la Protección al Ambiente (previamente analizado) faculta a la autoridad demandada no sólo a analizar en su integridad las medidas de mitigación propuestas por la solicitante de autorización de la MIA, sino que también la faculta para modificar el proyecto **y establecer medidas adicionales de prevención y mitigación, a fin de que se eviten, atenúen o compensen los impactos ambientales adversos susceptibles de ser producidos**, lo anterior, para efecto de, en su caso, autorizar de manera condicionada la obra o actividad de que se trate.").

> authorization of the MIA, but also empowers it to modify the project **and to establish additional prevention and mitigation measures, in order to avoid, mitigate or compensate the adverse environmental impacts that could be produced**, the foregoing, as the case may be, in order to conditionally authorize the relevant work or activity.

99. Despite omitting most of these findings in their expert reports,[247] SOLCARGO acknowledged at the hearing that they required SEMARNAT "to consider the entire information submitted by the petitioner regarding the mitigating measures" and to "specify the reasons it took into consideration, as well as the scientific and/or environmental data on which it based such decision."[248]

100. [redacted]:[249]

[redacted]

101. But, far from carrying out a proper scientific review on the record, [redacted] the Second Denial of the MIA was a *fait accompli*.[250] No sooner did SEMARNAT learn of the TFJA's decision than Mr. Pacchiano ordered the MIA to be denied again.[251]

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247 Hrg. Day 3 Tr., Testimony of SOLCARGO, 26 January 2022, pp. 876:6-877:4 (Spanish Tr.) (English Tr. citations has been omitted due to lack of clarity.).

248 Hrg. Day 3 Tr., Testimony of SOLCARGO, 26 January 2022, p. 759:21:765-20 (Spanish Tr.) ; *see also* SOLCARGO ER1, SOLCARGO ER2.

249 [redacted]

250 [redacted]

251 Hrg. Day 2 Tr., [redacted] 25 January 2022, p. 385:10-13. *See also* [redacted]

102. Perhaps the most damning piece of contemporaneous evidence supporting the testimony [redacted] is the 18 April 2018 press release (the *tarjeta informativa*) issued by SEMARNAT announcing unequivocally that it would deny the MIA again:[252]

> Ciudad de México, 18 de abril de 2018
> YACIMIENTO DON DIEGO, BCS
> Tarjeta informativa
>
> - Con fecha 2 de abril de 2016, la Dirección General de Impacto y Riesgo Ambiental (DGIRA) de la SEMARNAT negó la autorización al proyecto denominado Don Diego, que proponía la extracción del fosfato marino en el golfo de Ulloa, en Comondú, Baja California Sur.
> - Inconforme, el promovente Exploraciones Oceánicas S.R.L. de C.V., impugnó la resolución mediante un recurso de revisión ante la Subsecretaría de Gestión para la Protección Ambiental de la SEMARNAT, que ratificó la negativa.
> - El promovente del proyecto presentó ante la Sala Especializada en Materia Ambiental y de Regularización del Tribunal Federal de Justicia Administrativa un juicio de nulidad de la resolución negativa.
> - El 13 de abril de 2018, la SEMARNAT fue notificada de la sentencia dictada por dicho Tribunal, misma que ordena emitir una nueva resolución.
> - En este sentido, la SEMARNAT dará cumplimiento a la sentencia con la convicción de que dicho proyecto representa una amenaza para la integridad del ecosistema, por lo cual reforzará la justificación técnica y científica para confirmar la resolución original, es decir, negar la autorización.

103. SEMARNAT's communications unit issued the *tarjeta informativa* a mere three working days (five days in total) after SEMARNAT received the TFJA's judgment annulling the First Denial.[253] Critically, the timing and contents of the *tarjeta informativa* corroborates [redacted]

[redacted]

252 **C-0470**, Informational Note (Tarjeta Informativa), 18 April 2018.

253 It is uncontested that SEMARNAT was notified of the TFJA's decisión on 13 April 2018. **C-0470**, Informational Note (Tarjeta Informativa), 18 April 2018; **C-0171**, E. Méndez, "Negarán dragado de arena en Ulloa; resolución de la Semarnat," Excelsior, 19 April 2018.

[redacted][254] and further demonstrates that SEMARNAT never intended to re-evaluate the MIA as directed by the TFJA. It is self-evident that no proper re-evaluation of the MIA was possible in that five-day period between Friday, 13 April 2018 and Wednesday, 18 April 2018, particularly given the sweeping criticisms of the TFJA. And in fact, [redacted] there was no scientific reason to deny again in 2018 since the Second Denial was also a product of Mr. Pacchiano's instructions and thus pretextual.[255]

104. Counsel for Respondent claimed it was unable to find the press release in response to Odyssey's document request,[256] yet disinterested SEMARNAT officials in the "Transparency Unit" evidently had no difficulty locating the allegedly elusive document when requested by Odyssey directly.[257]

105. The press release and Mexico's treatment regarding its production shows SEMARNAT ignored the TFJA's direction to analyze the MIA. [redacted]

[redacted]

254 [redacted]

255 [redacted]

256 Procedural Order No. 3, 23 April 2021, PDF pp. 35-36 (Request 9); **C-0471**, Letter from Mexico to Cooley transmitting document production, 10 May 2021, p. 3.

257 *See* **C-0471**, Letter from Mexico to Cooley Transmitting Document Production, 18 May 2021, and **C-0472**, Information Request before the National Transparency Platform, 8 June 2021.

258 [redacted]

106. In his second witness statement, [redacted]:[259]

[redacted]

107. [redacted]

259 [redacted]

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[redacted]

108. All of the evidence regarding the TFJA's decision and the way the decision was completely ignored as evinced by the *tarjeta informativa* not only corroborates [redacted] but also demonstrates the Denials were manifestly arbitrary in breach of Article 1105(1) of NAFTA.[262]

C. The Evidence Further Proves That Mexico's Conduct Was Non-Transparent, Discriminatory, and Not in Accordance with Administrative Due Process

109. The evidence described above likewise demonstrates that SEMARNAT subverted the legal and scientific nature of the environmental impact assessment for an ulterior motive in breach of Claimant's due process rights. As the NAFTA *Cargill* tribunal found, there is a breach of Article 1105(1) "when the State's actions . . . grossly subvert a domestic law or policy for an ulterior motive."[263] Indeed, abusing internal rights for illegitimate purposes constitutes a breach of Article 1105.[264]

110. An investor such as ExO has the right to be afforded the opportunity to present its position —including relevant evidence—for consideration by governmental bodies in decision-making relating to measures affecting investments and to have decisions made based on the evidence, not political whims.[265]

111. As the foregoing evidence demonstrates, Mexico did not afford ExO that process.

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262 *See* Claimant's Memorial, ¶¶ 233-241.

263 **CL-0027**, *Cargill, Incorporated v. United Mexican States* (ICSID Case No. ARB(AF)/05/2) Award, 18 September 2009, ¶ 293. *See also* Claimant's Memorial, ¶¶ 242-243.

264 Claimant's Memorial, ¶¶ 289-291; Claimant's Reply, ¶¶ 206-224, 225-234.

265 *See, e.g.*, **CL-0112**, *Técnicas Medioambientales Tecmed, S.A. v. The United Mexican States* (ICSID Case No. ARB (AF)/00/2) Award, 29 May 2003, ¶ 162 (finding that Mexico failed to provide due process to an investor as a result of the authorities' refusal to allow the investor to present its position on the renewal of a permit).

D. The Evidence Confirms That Mexico Breached Odyssey's Reasonable Expectations That the Project Would Be Approved Based on Its Environmental Merits

112. While Mexico challenges whether reasonable expectations is a stand-alone standard within the MST, its discussion is primarily academic because Mexico accepts the *Waste Management* tribunal's formulation of the MST,[266] which, as another NAFTA tribunal has explained, calls "for a consideration of representations made by the host state which an investor relied on to its detriment."[267] In addition, Mexico has acknowledged that "specific representations" can inform a tribunal's decision on whether MST was breached.[268]

113. The reasonable expectations standard is nothing more than a corollary of the principle of good faith. Indeed, NAFTA tribunals considering the general international law principle of good faith have found a State breaches NAFTA Article 1105 "where a Contracting Party's conduct creates reasonable and justifiable expectations on the part of an investor (or investment) to act in reliance on said conduct such that a failure by the NAFTA Party to honour those expectations could cause the investor (or investment) to suffer damages."[269] As applied to this case, Odyssey and ExO had the reasonable expectations that SEMARNAT would decide whether to grant the MIA based strictly environmental reasons,[270] which did not occur because Mr. Pacchiano wrongfully intervened and ordered the DGIRA to deny the MIA for his own, non-environmental reasons.[271]

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266 Respondent's Counter-Memorial, ¶¶ 449-451, 507-510; Respondent's Rejoinder, ¶¶ 389-390.

267 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 589.

268 *See* Respondent's Rejoinder, ¶ 390.

269 **CL-0168**, *International Thunderbird Gaming Corporation v. The United Mexican States* (UNCITRAL) Arbitral Award, 26 January 2006, ¶ 147. *See also* **CL-0055**, *Glamis Gold, Ltd. v. United States of America* (UNCITRAL) Award, 8 June 2009, ¶ 620; **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 572; **CL-0057**, *Grand River Enterprises Six Nations, Ltd., et al. v. United States of America* (UNCITRAL) Award, 12 January 2011, ¶ 141.

270 Under LGEEPA, **C-0014**, art. 35, a decision on whether to approve, deny or conditionally approve a MIA can only be taken for environmental reasons.

271 *See supra*, Section II.B.

114. Additionally, tribunals have recognized that representations like those Mexico gave ExO here constitute specific assurances sufficient for an investor to develop legitimate expectations.[272] In *Bilcon v. Canada*, for instance, the tribunal found that repeated assurances made by government officials directly to the claimant-investor created legitimate expectations that Bilcon's quarry project in Nova Scotia would be approved.[273]

115. Similar to Canada in *Bilcon*, Mexico, through its agents, gave specific representations to ExO that the Project's MIA would be approved and then breached them. These include:

a. In April 2015, ExO attended a meeting [redacted]. Dr. Lozano understood, [redacted], that the MIA was on track to be approved.[274]

b. In a May 2016 meeting with ExO representatives, Secretary Pacchiano noted that the COP13 (United Nations Conference of the Parties to the Convention on Biological Diversity) was scheduled to take place in Cancún, Mexico in December 2016. He further stated that he did not want to approve the MIA before that meeting to avoid political controversy, but that after the conference took place, SEMARNAT would grant approval.[275] On February 15, 2017, after the COP13, ExO representatives met with Secretary Pacchiano again, who reported that the turtle issue had been resolved, SEMARNAT and the company were working together, and that SEMARNAT preferred to resolve the issues through the review petition. Yet a few weeks later, on 27 February 2017, SEMARNAT denied the review petition,[276] this time flagrantly disregarding the scientific evidence ExO had submitted (an action that the TFJA subsequently condemned as arbitrary and in breach of ExO's due process).[277]

116. Additionally, Mexico repudiated Mr. Pacchiano's specific commitment that he would approve the Project if ExO "voluntarily" withdrew and then resubmitted the MIA with

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272 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 468-471; *see* Claimant's Memorial, ¶¶ 244-247.

273 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 468-471, 589 (describing the various assurances provided by State officials and determining they led the claimants to form legitimate expectations).

274 Lozano WS1, ¶ 39.

275 Lozano WS1, ¶ 75; Gordon WS1, ¶ 83.

276 **C-0160**, SEMARNAT Denial Resolution, 27 February 2017.

277 **C-0170**, TFJA Ruling, 21 March 2018, p. 201 (Spanish), p. 186 (English).

letters of support from CONAPESCA (Mexico's National Commission of Fisheries and Aquaculture) and representatives of local fisheries operating in the Gulf of Ulloa.[278] Undersecretary Pacchiano made this request to Alonso Ancira in a June 2015 meeting based on his belief that certain unidentified interested parties had turned approval of the Project into a "political issue."[279] Despite doing exactly what Mr. Pacchiano requested,[280] SEMARNAT nonetheless failed to approve the Don Diego Project's MIA.

E. Mexico's Continued Reliance on *Vento v. Mexico* Is Unavailing

117. Unable to counter [redacted], Mexico places undue weight on the *Vento* case as if it created a legal presumption that could somehow bind this Tribunal with respect to different officials exercising different responsibilities under different laws involving different parties and at a different point in time.[281] In particular, Mexico cites *Vento* to argue that "marching orders" cannot violate MST and that [redacted] testimonies are not credible.[282] Both legally and factually, Mexico's application of *Vento* is manifestly wrong and should be rejected by the Tribunal.

118. While it is trite, Mexico's argument requires Claimant to note that the decision of one NAFTA tribunal cannot bind the decision of another NAFTA tribunal—especially when they do not even involve any likeness in terms of measures, parties, or contemporaneity.[283] Past cases are relevant only insofar as they clarify the underlying

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278 Lozano WS1, ¶ 42.

279 Lozano WS1, ¶¶ 40-42; Gordon WS1, ¶ 70; **C-0389**, Email chain between G. Stemm and R. Jaime Barrera re Question for Alonso, 21 October 2015, p. 2 ("The question I was trying to ask was whether Pacchiano . . . was still requiring the three letters from: - the Governor of the State of Baja Sur[;] - The Mayor of Comandu [sic] [and] - INAPESCA[.] You may recall that when Pacchiano asked us to withdraw the MIA in June, he told us we needed letters from those three people in order to approve the MIA."); [redacted]

280 The letters of support were presented in the context of the second MIA process of 2015 (as explained by Lozano WS1, ¶ 68). *See* **C-0142**, Letter from Fedecoop de la Capital to SEMARNAT, 30 March 2016; **C-0143**, Letter from SCPP Pescadores de la Poza to SEMARNAT, 30 March 2016; **C-0144**, Letter from the Sociedad Cooperativa de Producción Pesquera to SEMARNAT, 30 March 2016; **C-0145**, Letter from the Confederación Nacional Cooperativa Pesquera to SEMARNAT, 31 March 2016; **C-0146**, Supporting letters sent by ExO to SEMARNAT, 1 April 2016; **C-0147**, Supporting letters sent by ExO to SEMARNAT, 6 April 2016.

281 Claimant's Reply, ¶¶ 193-200.

282 Respondent's Counter-Memorial, ¶¶ 455-457, 460-464, 468-470; Respondent's Rejoinder, ¶¶ 64, 345-348.

283 *See* **CL-0081**, NAFTA, art. 1136.1: "An award made by a Tribunal shall have no binding force except between the disputing parties and in respect of the particular case."

legal sources (convention, customary law, or general principle).[284] So, for example, this Tribunal could potentially turn to *Vento* as a persuasive precedent in ascertaining the scope of a customary rule relevant to the MST. But that is not what Respondent is asking the Tribunal to do. Instead, it is asking the Tribunal to accept the proposition that the evidence of Mexican government official whistle-blowers can never be trusted.[285] This is a gross misapplication of the concept of *jurisprudence constante*. The findings of a tribunal about the credibility of a witness in one case cannot be of any relevance to the evaluation of the credibility of a different witness by another tribunal in an unrelated case.

119. Regardless, as Claimant has already explained at length, the *Vento* case is readily distinguishable.[286] Among other things, in *Vento*, the Tribunal found a witness not credible in circumstances where he claimed to have been given "marching orders" to adopt a given measure harming Vento, but was unable to identify who allegedly gave the "marching orders" or even describe the context in which he supposedly received the orders.[287] In contrast, here, two career public servants testified in detail about the circumstances of the instructions they received and unequivocally identified Secretary Pacchiano as the source of the instructions.[288] Their testimony is credible and corroborated by contemporaneous evidence.[289] *Vento* is plainly not analogous.

F. The Denials Were Not a Legitimate Exercise of Mexico's Regulatory Powers

120. Throughout the proceedings, Respondent has argued that both the First and Second Denials were a rightful exercise of Mexico's regulatory power to protect the environment.[290] During the hearing, this argument mutated to the point of submitting that the Tribunal should limit itself to determining whether the Denials were reasonable

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284 **CL-0134**, Statute of the International Court of Justice, art. 38.

285 Respondent's Counter-Memorial, ¶¶ 456-459, 463-470; Respondent's Rejoinder, ¶¶ 347-348.

286 Claimant's Reply, ¶¶ 193-200.

287 **RL-0020**, *Vento Motorcycles, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/17/3) Award, 6 July 2020, ¶ 306.

288 *See supra*, ¶¶ 9-12, 28-38, 41-48.

289 *See supra*, ¶¶ 55-70, 71-93.

290 *See*, for example, Respondent's Counter-Memorial, ¶¶ 127-152, 432-436; Respondent's Rejoinder, ¶¶ 147-169. Section F answers Tribunal Question No. 4.

on their face.[291] Not only does Mexico's desired approach mischaracterize international law, it is also logically incoherent with its overarching claim that international tribunals should not involve themselves in the merits of a domestic regulatory decision.

121. Specifically, Mexico has claimed that:

a. SEMARNAT appropriately analyzed, heard, and resolved a request for an environmental impact authorization and determined that the Project was not environmentally sustainable in accordance with Article 35 of LGEEPA;[292]

b. Odyssey is asking the Tribunal to serve as a Court of Appeal or an environmental authority analyzing ExO's MIA afresh;[293] and

c. The Tribunal should instead defer to SEMARNAT's regulatory actions, as they are police powers invoked to protect the environment and are not susceptible to challenge under NAFTA.[294]

122. These assertions cannot survive the testimony [redacted], the documentary evidence in the record, Mexico's failure to disclose any documentation reflecting any actual evaluation or consideration of Odyssey's MIA, and Mexico's failure to proffer any contrary testimony (save that of Mr. Pacchiano, which is uncorroborated and unreliable, for the reasons discussed above).

123. Mexico breached NAFTA's investment protections because SEMARNAT did not objectively and appropriately determine ExO's MIA. Instead, a political appointee—Secretary Pacchiano—overrode the SEMARNAT scientists' determination that the Project was environmentally sustainable and should be conditionally approved, instructing them instead to "find a reason" to deny the Project.[295] What is more, it is not Mexico's case

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291 Hrg. Day 1 Tr., Respondent's Opening Statement, 24 January 2022, p. 111:11-15 (Spanish), p. 101:17-20.

292 *See*, for example, Respondent's Counter-Memorial, ¶ 4.

293 *See*, for example, Respondent's Counter-Memorial, ¶¶ 4-5; Hrg. Day 1 Tr., Respondent's Opening Statement, 24 January 2022, pp. 110:15-111:10 (Spanish), p. 101:3-16 (English).

294 Paragraphs 120 to 134 in Section II.F of this Post-Hearing Submission discuss and analyze the applicable international law on this subject.

295 [redacted].

that he did so appropriately, or after an evaluation of the evidence; instead, *Mexico asserts that Secretary Pacchiano had nothing to do with the denial*.[296]

1. Mexico Cannot Rely on Environmental Regulatory Powers as *Carte Blanche* to Breach International Law

124. Odyssey has never disputed that States possess a legitimate right to exercise their regulatory powers to protect the environment under customary law and under Article 1114 of NAFTA.[297] But these powers must be exercised in good faith, which demands, among other things, that decisions be made exclusively in pursuit of a legitimate public purpose.[298] Subverting an environmental process for private political gain or out of personal spite constitutes the very antipathy of a legitimate public purpose.[299]

125. Moreover, tribunals have also consistently confirmed that a State is not entitled to rely on its environmental powers as a pretext to hide spurious motivations.[300] Indeed, Mexico has twice been condemned by investment tribunals for trying to disguise arbitrary conduct and due process breaches as the exercise of legitimate environmental regulatory powers:

a. In *Abengoa v. Mexico*, the tribunal held that the closure of the investor's plant, ostensibly for the protection of the environment and public health, was actually motivated by political considerations. It condemned Mexico's conduct on the grounds that it is "contrary to the minimum standard of treatment" for a state to use "the powers granted by the law for purposes unrelated to" that law.[301] Accordingly, the tribunal found that Mexico had breached the minimum standard of treatment.

b. In *Tecmed v. Mexico*, the Mexican National Ecology Institute (INE) refused to renew the operating permit of the claimant's subsidiary, citing violations of the

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296 *See, e.g.,* Pacchiano WS1, ¶¶ 12-14, 21-36, 40, 46; Pacchiano WS2, ¶¶ 7, 13-14, 17, 19, 21-22; Respondent's Counter-Memorial, ¶¶ 335-340, 387, 438; Respondent's Rejoinder, ¶¶ 127-130; Hrg. Day 1 Tr., Respondent's Opening Statement, 24 January 2022, p. 140:20-141:1 (Spanish), p. 124:21-125:2 (English).

297 Claimant's Response to Art. 1128 Non-Disputing Party Submissions, ¶¶ 35-37.

298 Claimant's Memorial, ¶¶ 312-313; Claimant's Reply, ¶¶ 213-224.

299 Claimant's Response to Art. 1128 Non-Disputing Party Submissions, ¶¶ 46-49.

300 Claimant's Memorial, ¶¶ 233-241; Claimant's Reply, ¶¶ 213-224.

301 **CL-0002**, *Abengoa, S.A. y COFIDES, S.A. v. United Mexican States* (ICSID Case No. ARB(AF)/09/2) Award, 18 April 2013, ¶ 642; Claimant's Memorial, ¶ 240; Claimant's Reply, ¶¶ 221-224.

terms of the permit.[302] The tribunal rejected Mexico's justifications in light of evidence that the primary reason for denying the renewal "related to the social or political circumstances and the pressure exerted on municipal and state authorities and even on INE itself created by such circumstances," rather than for good faith environmental considerations.[303]

126. Similarly to *Abengoa* and *Tecmed*, the facts in this case demonstrate that:

a. Mexico did not exercise its regulatory powers to protect the environment in good faith; and

b. Mexico did not apply its regulatory powers for a legitimate public purpose.

127. It is precisely because Mexico used environmental protection as a cover for illegitimate objectives that it cannot rely on the so-called "margin of appreciation" doctrine.[304] A majority of the tribunal in *Philip Morris v. Uruguay* applied the margin of appreciation theory to assist the tribunal in determining whether tobacco control measures of general application which were adopted in good faith[305] were inconsistent with obligations contained in the Switzerland-Uruguay BIT.[306] This theory, borrowed from the European Court of Human Rights' jurisprudence, accords leeway to national authorities when determining whether policy decisions contravene protected human rights.[307] In extrapolating this theory to the investment treaty arbitration arena, a majority of the *Philip Morris* tribunal concluded that it would afford due respect to the "exercise of sovereign power, not made irrationally and not exercised in bad faith" in the public health context.[308] However, this reasoning does not apply for a number of reasons:

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302 **CL-0026**, C.T. Kotuby & L.A. Sobota, *General Principles of Law and International and International Due Process* (2017), pp. 116-117; Claimant's Memorial, ¶ 240; Claimant's Reply, ¶¶ 221-222.

303 **CL-0112**, *Técnicas Medioambientales Tecmed, S.A. v. The United Mexican States* (ICSID Case No. ARB (AF)/00/2) Award, 29 May 2003, ¶ 132; Claimant's Memorial, ¶ 240; Claimant's Reply, ¶¶ 221-222.

304 Answer to Tribunal Question No. 3.

305 **CL-0264**, *Philip Morris Brands SARL, Philip Morris Products S.A. and Abal Hermanos S.A. v. Oriental Republic of Uruguay* (ICSID Case No. ARB/10/7) Award, 8 July 2016 ¶ 388.

306 **CL-0264**, *Philip Morris Brands SARL, Philip Morris Products S.A. and Abal Hermanos S.A. v. Oriental Republic of Uruguay* (ICSID Case No. ARB/10/7) Award, 8 July 2016, ¶ 399.

307 *See generally* **CL-0253**, G. Born, "'A Margin of Appreciation': Appreciating Its Irrelevance in International Law," 61 Harvard Int'l L.J. 65 (2020).

308 **CL-0264**, *Philip Morris Brands SARL, Philip Morris Products S.A. and Abal Hermanos S.A. v. Oriental Republic of Uruguay* (ICSID Case No. ARB/10/7) Award, 8 July 2016, ¶ 399 (citing **CL-0045**, *Electrabel S.A. v. The*

128. First, the "margin of appreciation" doctrine has not been widely adopted outside of the European Court of Human Rights (ECtHR) (and even there, the application of this doctrine is limited), nor is it part of customary international law. In the investor-state context, tribunals have consistently rejected the doctrine's applicability, questioning whether an analogy between human rights treaties and investment agreements can be fairly drawn.[309] Gary Born, who issued a dissenting opinion in *Philip Morris*, noted that the "margin of appreciation" is a "specific legal rule, developed and applied in a particular context" of the ECtHR that "cannot properly be transplanted to" the FET obligation under investment agreements.[310]

129. Second, the majority in *Philip Morris* explicitly stated that it would rely on the margin of appreciation doctrine only because the case involved a direct challenge to the substance of a public health measure.[311] This case is not about the public health; the conduct here involves the subversion of environmental policy and the misuse of public authority for

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Republic of Hungary (ICSID Case No. ARB/07/19) Decision on Jurisdiction, Applicable Law and Liability, 30 November 2012, ¶ 8.35).

309 In *Bernhard Friedrich Arnd Rüdiger Von Pezold and Others v. Republic of Zimbabwe*, the tribunal stated, in reference to the doctrine, that "due caution should be exercised in importing concepts from other legal regimes (in this case European human rights law) without a solid basis for doing so." The Tribunal also held that it was "not aware that the concept has found much support in international investment law." **CL-0254**, *Bernhard Friedrich Arnd Rüdiger Von Pezold and Others v. Republic of Zimbabwe* (ICSID Case No ARB/10/15) Award, 28 July 2015, ¶ 465; in *Quasar de Valores SICAV S.A. and Others v. The Russian Federation*, the tribunal distinguished between human rights conventions which establish "minimum standards to which all individuals are entitled irrespective of any act of volition on their part" versus "investment-protection treaties [which] contain undertakings which are explicitly designed to induce foreigners to make investments in reliance upon them." As the tribunal cautioned, the "reliability of an instrument," such as an investment treaty, "should not be diluted by precisely the same notions of 'margins of appreciation' that apply to" human rights treaties. **CL-0255**, *Quasar de Valores SICAV S.A. and Others v. The Russian Federation* (SCC) Award, 20 July 2012, ¶ 22. The doctrine was also rejected in **CL-0107**, *Siemens A.G. v.The Argentine Republic* (ICSID Case No. ARB/02/8) Award, 17 January 2007, ¶ 354; **CL-0018**, *Biwater Gauff (Tanzania) Ltd. v. United Republic of Tanzania* (ICSID Case No. ARB/05/22) Award, 24 July 2008 July 24, 2008, ¶¶ 434-436; and **CL-0033**, *Chemtura Corporation v. Government of Canada* (UNCITRAL) Award, 2 August 2010, ¶ 123.

310 **CL-0264**, *Philip Morris Brands SARL, Philip Morris Products S.A. and Abal Hermanos S.A. v Oriental Republic of Uruguay* (ICSID Case No ARB/10/7) Award, 8 July 2016, Dissenting Opinion, ¶ 87. See also: ¶¶ 138, 181, 185.

311 The *Philip Morris* tribunal states: "'the margin of appreciation' is not limited to the context of the ECHR but 'applies equally to claims arising under BITs,' at least **in contexts such as public health**." **CL-0264**, *Philip Morris Brands SARL, Philip Morris Products S.A. and Abal Hermanos S.A. v. Oriental Republic of Uruguay* (ICSID Case No. ARB/10/7) Award, 8 July 2016, ¶ 399 (emphasis added).

political and personal reasons.[312] Lastly, for a tribunal to consider applying a margin of appreciation, it must be dealing with a direct challenge to the substantive merits of a policy decision made in good faith by duly authorized government officials.[313] Here, Claimant is not challenging Mexico's environmental policy, but rather the misapplication (in lack of good faith) of a regulatory regime.[314] Put simply, there can be no margin of appreciation for an action specific to an investor (as opposed to a policy of general application) particularly where the action is taken in an arbitrary manner or without due process.

2. Odyssey Is Not Requesting This Tribunal to Undertake a *De Novo* Review or to Act as an Appellate Body in Reviewing SEMARNAT's Decisions[315]

130. Claimant has not asked the Tribunal to substitute its decision for that of SEMARNAT or any other governmental agency. Instead, it asks the Tribunal only to see those decisions for what they were: pretexts for Secretary Pacchiano's arbitrary orders to deny the Project. This is similar to the exercise undertaken by the *SD Myers v. Canada* NAFTA tribunal, which determined that a supposed-environmental measure had actually been adopted for protectionist reasons.[316] When the Government of Canada tried to set aside

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312 Investment tribunals analyzing environmental measures have analyzed whether the alleged environmental excuse was a pretext for political or other unlawful motivations. *See, e.g.*, Claimant's Reply, ¶¶ 214-224. In the NAFTA context, the *S.D. Myers* tribunal went beyond Canada's pretextual veil of environmental justification to determine that because the reasons for the alleged environmental measures had been taken for protectionist reasons, Canada had breached Chapter 11 of NAFTA. **CL-0103**, *S.D. Myers, Inc. v. Government of Canada* (UNCITRAL) Partial Award, 13 November 2000, ¶¶ 194-195, 268.

313 In the words of the *Philip Morris* tribunal: "[i]n such cases respect is due to the 'discretionary exercise of sovereign power, not made irrationally and not exercised in bad faith . . . .'" **CL-0264**, *Philip Morris Brands SARL, Philip Morris Products S.A. and Abal Hermanos S.A. v. Oriental Republic of Uruguay* (ICSID Case No. ARB/10/7) Award, 8 July 2016, ¶ 399.

314 The *Philip Morris* tribunal concluded that the "SPR [the challenged measure by Philip Morris] was a reasonable measure, not an arbitrary, grossly unfair, unjust, discriminatory or a disproportionate measure. **CL-0264**, *Philip Morris Brands SARL, Philip Morris Products S.A. and Abal Hermanos S.A. v. Oriental Republic of Uruguay* (ICSID Case No. ARB/10/7) Award, 8 July 2016, ¶ 410. Also, when analyzing the other measure challenged by the claimant in that case (the 80/80 measure), the tribunal also found: "the 80/80 Regulation was a reasonable measure adopted in good faith." **CL-0264**, *Philip Morris Brands SARL, Philip Morris Products S.A. and Abal Hermanos S.A. v. Oriental Republic of Uruguay* (ICSID Case No. ARB/10/7) Award, 8 July 2016, ¶ 420.

315 This Section answers Tribunal Question No. 4

316 **CL-0103**, *S.D. Myers, inc. v. Government of Canada* (UNCITRAL) Partial Award, 13 November 2000, ¶ 162.

that decision before the Courts of Ontario on the basis that the Tribunal had erred in its application of Article 1114 of NAFTA, the court concluded:[317]

> Article 1114 of NAFTA allows Canada to adopt a legitimate environmental measure without regard to Chapter 11. However, the Tribunal found that **the Canadian law banning exports of PCBs was not a measure for a legitimate environmental purpose, but was for the purpose of protecting Canadian industry from U.S. competition. Therefore, Article 1114 is not in issue.**

131. As such, in the words of the *TECO* tribunal, "although the role of an international tribunal is not to second-guess or to review decisions that have been made genuinely and in good faith by a sovereign in the normal exercise of its powers, **it is up to an international arbitral tribunal to sanction decisions that amount to an abuse of power, are arbitrary, or are taken in manifest disregard of the applicable legal rules and in breach of due process in regulatory matters.**"[318]

132. Here, the environmental evidence in the record only confirms that the alleged scientific reasons were pretextual and the arbitrary nature of the decision.[319] But there is no need for the Tribunal to evaluate the environmental record and decide whether the MIA should have been granted. [redacted].[320]

133. With no answer to this evidence, Respondent would have the Tribunal vouchsafe decisions made in 2016 and 2018 based upon new evidence it has marshalled for these proceedings.[321] Even though Respondent has repeatedly warned the Tribunal against

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317 **RL-0015**, *The Attorney General of Canada and S.D. Myers, Inc. v. The United Mexican States* (UNCITRAL) Reasons for Order, 13 January 2004, ¶ 30 (emphasis added).

318 **CL-0113**, *TECO Guatemala Holdings LLC v. The Republic of Guatemala* (ICSID Case No. ARB/10/17) Award, 19 December 2013, ¶ 493 (emphasis added).

319 *See supra*, ¶¶ 71-93.

320 *See supra*, ¶¶ 28-30.

321 Mexico produced the expert reports of Dr. Morales Zárate, the Grupo de Expertos en Tortugas Marinas, and Jorge Urban Viloria only in the framework of this arbitration. Their opinions were not part of

substituting its decision for those SEMARNAT issued in 2016 and 2018, in fact, it is inviting the Tribunal to do exactly that—and to do so based upon new evidence instead of the evidence contemporaneously available to SEMARNAT officials.

134. Indeed, the Tribunal does not need to form any view of the environmental impacts of the proposed Project to determine that SEMARNAT's treatment of ExO was inconsistent with NAFTA. The Tribunal need only ascertain whether Claimant has established, on a balance of probabilities, that Secretary Pacchiano intervened in the normal decision-making process and ordered his subordinates to deny ExO's MIA after they had determined it should be approved. No sort of *de novo* review of the new evidence proffered by Respondent to retrospectively justify the denial decisions is necessary.

G. Mexico Did Not Grant Odyssey and ExO Full Protection and Security

135. In its Rejoinder and at the hearings, Mexico claimed that Odyssey has renounced its Full Protection and Security claim because it did not raise it again in its Reply Memorial.[322] This is not correct. Claimant did not rehash the arguments made in the Memorial[323] because the arguments conclusively demonstrate that, under customary international law, FPS obliges the host state "to possess and make available an adequate *legal system*, featuring such protections as appropriate remedial mechanisms, due process, and a right to compensation for expropriation."[324] Leading scholars and arbitral tribunals alike have recognized this to be part and parcel of the Full Protection and Security standard.[325]

SEMARNAT's rationale in denying the MIA and are the result of an *ex-post facto* justification for the ill-founded denials.

322 Respondent's Rejoinder, ¶¶ 407-408.

323 *See* Claimant's Memorial, ¶¶ 295-298.

324 **CL-0052**, G. Foster, "Recovering 'Protection and Security': The Treaty Standard's Obscure Origins, Forgotten Meaning, and Key Current Significance" (2012), p. 1103.

325 *See, e.g.,* **CL-0025**, C. Schreuer, "Full Protection and Security," J. Int'l Disp. Settlement (2010), p. 1 ("[T]ribunals have found that provisions of this kind also guaranteed legal security enabling the investor to pursue its rights effectively."); **CL-0111**, T. W. Walde, "Energy Charter Treaty-based Investment Arbitration" in: The Journal of World Investment & Trade (2004), p. 391 ("This obligation would not only be breached by active and abusive exercise of State powers but also by the omission of the State to intervene where it had the power and duty to do so to protect the normal ability of the investor's business to function . . . . [A] duty, enforceable by investment arbitration, to use the powers of government to ensure the foreign investment can function properly on a level playing field, unhindered and not harassed by the political and economic domestic powers that be."); **CL-0034**, *CME Czech Republic B.V. v. The Czech Republic* (UNCITRAL)

136. Here, by denying Claimant's application for environmental approval based on arbitrary reasons, Mexico undermined the "stability [of the Claimant's] investment environment" through the actions of one of its "administrative bodies."[326] As such, this conduct breached the Full Protection and Security Standard of NAFTA Article 1105.

III. MEXICO'S ACTIONS INDIRECTLY EXPROPRIATED ODYSSEY'S INVESTMENT UNDER ARTICLE 1110 OF NAFTA

137. Secretary Pacchiano's unlawful order to deny the Project amounted to an indirect expropriation as well as a destruction of Odyssey's investment in Mexico. Hence, the unlawful denial of the MIA constituted a substantial deprivation of Claimant's economic interest in its investment (ExO and the mining concession), contrary to Claimant's reasonable investment-backed expectations.[327] Finally, this measure did not constitute a lawful exercise of police powers.

A. Odyssey Made and Possessed NAFTA-Protected Investments Capable of Being Expropriated by the Government of Mexico

138. Article 1110(1) of NAFTA establishes that "[n]o Party may directly or indirectly nationalize or expropriate an **investment** of an investor of another Party."[328] Mining concessions fall under the term "investment" as defined in Article 1139 of NAFTA.[329] In fact, "any right which can be the object of a commercial transaction,"[330] which is covered by the definition in Article 1139 of NAFTA, is capable of being expropriated.

Partial Award, 13 September 2001, ¶ 613; **CL-0014**, *Azurix Corp. v. The Argentine Republic* (ICSID Case No. ARB/01/12) Award, 14 July 2006, ¶ 408; **CL-0107**, *Siemens A.G. v. The Argentine Republic* (ICSID Case No. ARB/02/8) Award, 17 January 2007, ¶ 303; **CL-0037**, *Compañía de Aguas del Aconquija S.A. and Vivendi Universal SA v. Argentina* (ICSID Case No. Arb/97/3) Award, 20 August 2007, ¶ 7.4.14; **CL-0080**, *National Grid P.L.C. v. Argentine Republic* (UNCITRAL) Award, 3 November 2008, ¶ 189; **CL-0018**, *Biwater Gauff (Tanzania) Ltd. v. United Republic of Tanzania* (ICSID Case No. ARB/05/22) Award, 24 July 2008, ¶ 729; **CL-0096**, *Renée Rose Levy de Levi v. Republic of Peru* (ICSID Case No. ARB/10/17) Award, 26 February 2014, ¶ 406.

326 **CL-0014**, *Azurix Corp. v. The Argentine Republic* (ICSID Case No. ARB/01/12) Award, 14 July 2006, ¶¶ 301, 408.

327 Claimant's Memorial, ¶¶ 202-206; Claimant's Reply, ¶¶ 241-246.

328 **CL-0081**, NAFTA, art. 1110(1).

329 **CL-0081**, NAFTA, art. 1139(g).

330 **RL-0067**, *Amoco International Finance Corporation v. Iran* (Iran-US Claims Tribunal) Award, 14 July 1987, ¶ 108.

139. Here, Odyssey had a bundle of "investments" under Article 1139 of NAFTA, which were expropriated,[331] including:

a. ExO, a Mexican company constituted for the sole purpose of developing the Don Diego Project; and

b. The mining concessions, which are legal rights under Mexican law with commercial value.

140. Mexico's argument at the hearing was that these rights were not capable of being expropriated because they are not vested interests under Mexican law.[332] However, there is nothing in NAFTA Article 1139 that requires rights to be vested to be protected under NAFTA.

141. In any event, the mining concession was a vested right under Mexican law.[333] As confirmed by Dr. Federico Kunz, Claimant's mining law expert whom Mexico did not call to testify, it is an asset which can only be cancelled in the limited circumstances contemplated in the Mexican mining law (which limited circumstances do not apply here).[334]

B. Mexico Substantially Interfered with Odyssey's Rights over Its Investments

142. The *jurisprudence constante* of NAFTA tribunals confirms that substantial interference with an investor's use or enjoyment of the benefits associated with its investment is sufficient to establish an indirect expropriation under Article 1110.[335] Thus, contrary to Mexico's position, there is no need to fully dispossess the investor's legal title over the investment for an indirect expropriation to occur.

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331 Claimant's Memorial, ¶¶ 202-206; Claimant's Reply, ¶¶ 241-246.

332 Hrg. Day 1 Tr., Respondent's Opening Statement, 24 January 2022, pp. 148:11-149:3 (Spanish Tr.), p. 131:1-8 (English Tr.).

333 Claimant's Reply, ¶¶ 241-246; Kunz ER1, ¶¶ 17-19; Kunz ER2, ¶¶ 4-15, 34.

334 Claimant's Reply, ¶¶ 241-246; Kunz ER1, ¶¶ 17-19; Kunz ER2, ¶¶ 4-15, 34.

335 Claimant's Memorial, ¶¶ 299-304; Claimant's Reply, ¶¶ 248-250; **CL-0089**, *Pope & Talbot Inc. v. The Government of Canada* (UNCITRAL) Interim Award, 26 June 2000, ¶ 102; *see also* **CL-0049**, *Fireman's Fund Insurance Company v. The United Mexican States* (ICSID Case No. ARB(AF)/02/01) Award, 17 July 2006, ¶ 176(c).

143. As confirmed at the hearing, Mexico has deprived Odyssey's investments of any economic value because the concession and ExO were inextricably linked to the rights to develop and exploit the Don Diego deposit.[336] These rights were completely frustrated by Mexico's manifestly arbitrary denial of the MIA in 2016 and 2018.

C. The Hearing Confirmed that Mexico's Measures Were Not a Legitimate Exercise of Its Police Powers

144. Mexico claimed at the hearing that the Denials did not amount to an indirect expropriation because they constituted a legitimate exercise of police powers to protect the environment.[337] However, police powers must be exercised in good faith, non-discriminatorily, and in pursuing a legitimate public purpose.[338] In particular, police powers cannot be alleged as a pretext to escape treaty liability.[339]

145. The hearing and the testimony [redacted] before this Tribunal confirmed that SEMARNAT was about to approve the MIA until Secretary Pacchiano issued an order [redacted].[340] In turn, SEMARNAT came up with a series of environmental pretexts to hide Mr. Pacchiano's order. Yet, they were never premised on real environmental concerns that could not be properly mitigated by a conditional approval and ExO's proposed mitigation measures.

IV. MEXICO BREACHED ARTICLE 1102 OF NAFTA

146. The parties agree on the three components of the national treatment Article 1102 analysis. Specifically, Claimant must prove that Respondent has (i) accorded treatment to (ii) other national investors in like circumstances that (iii) was more favorable

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336 Claimant's Memorial, ¶¶ 310-313; Claimant's Reply, ¶¶ 249-253.

337 Hrg. Day 1 Tr., Respondent's Opening Statement, 24 January 2022, p. 149:4-12 (Spanish), p. 131:15-20 (English); *see also* Respondent's Counter-Memorial, ¶¶ 435, 558-561, 612-613; Respondent's Rejoinder, ¶¶ 14, 418.

338 Claimant's Reply, ¶ 217; **CL-0170**, J.R. Marlles, "Public Purpose, Private Losses: Regulatory Expropriation and Environmental Regulation in International Investment Law" (2006-2007), p. 310.

339 Claimant's Reply, ¶ 217; **CL-0170**, J.R. Marlles, "Public Purpose, Private Losses: Regulatory Expropriation and Environmental Regulation in International Investment Law" (2006-2007), p. 310.

340 *See* Claimant's Reply, ¶¶ 216-218, 233, 255; *see supra,* ¶¶ 66, 123.

treatment than that given to Claimant or its investment.[341] Odyssey has discharged this burden during the proceedings and at the hearing stage.

147. Once a *prima facie* case has been made for a breach of national treatment, it lies with Mexico to explain why the different treatment was justified on valid non-discriminatory grounds.[342] Additionally, the national treatment standard does not require Claimant to prove any discriminatory intent.[343]

148. Similar to *Bilcon v. Canada*[344] and *Occidental v. Ecuador*,[345] the present case is about treatment as a process rather than a comparison of outcomes. As the *Bilcon* tribunal recognized, "treatment" can refer to the treatment conferred to an investment project as it related to the environmental assessment process.[346] Respondent does not seriously dispute that "treatment" in this case is the environmental assessment of the Don Diego MIA.[347] However, Claimant and Respondent do differ on (i) whether there are local investors and/or investments in "like circumstances," and, if so, (ii) on whether the treatment accorded to Don Diego was less favorable than that accorded to the domestic investors and/or investments.[348]

149. The record demonstrates that there are six comparable dredging projects owned by Mexican investors and that the Don Diego Project received disparate treatment as it

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341 Claimant's Memorial, ¶¶ 314-316; Respondent's Counter-Memorial, ¶ 574; Claimant's Reply, ¶ 257; Respondent's Rejoinder, ¶ 419.

342 Claimant's Reply, ¶ 260. *See also* **CL-0068**, *Marvin Feldman v. Mexico* (ICSID Case No. ARB(AF)/99/1) Award, 16 December 2002, ¶ 181; **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 718.

343 Claimant's Response to Art. 1128 Non-Disputing Party Submissions, ¶¶ 56-58.

344 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 685-731.

345 **CL-0179**, *Occidental Exploration and Production Company v. The Republic of Ecuador* (LCIA Case No. UN 3467) Final Award, 1 July 2004, ¶¶ 167-179.

346 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 689. *See also* **CL-0195**, *United Parcel Service of America, Inc. v. Government of Canada* (UNCITRAL) Award on the Merits, 24 May 2007, ¶ 174 (in which the tribunal determined that the customs authorities' processing of items constitutes treatment for the purposes of Article 1102).

347 Respondent's Counter-Memorial, ¶¶ 606-613.

348 *See* Claimant's Reply, ¶¶ 257, 268-321.

relates to the PEIA and Denials.[349] For its part, Respondent has failed to demonstrate that this treatment of Claimant was justifiable, choosing to focus instead on irrelevant differences between the comparator projects and Don Diego in an attempt to distract from how obviously disparate the treatment of the Don Diego MIA was.

A. Projects Need Not Be Found to Be Identical for Them to Serve as the Basis for a "Like Circumstances" Comparison

150. As in *Bilcon*, the issue in this case is whether the investor or investment "was treated less favorably for the purpose of an environmental assessment."[350] *Bilcon* involved a quarry and a marine terminal.[351] *Bilcon* claimed that it was subjected to less favorable treatment in environmental impact assessments than comparable Canadian-owned projects. Much like Mexico here, Canada claimed that the comparable projects proposed by the claimant were not comparable because they were smaller or not did not use quarrying for the same purposes as *Bilcon* did.

151. In rejecting Canada's argument, the *Bilcon* tribunal noted:[352]

> Article 1102 refers to situations where investors or investments find themselves in "like circumstances." The language is not restricted as it is in some other trade-liberalizing agreements, such as those that refer to "like products." **Article 1102 refers to the way in which either the investor or investment is treated, rather than confining concerns over discrimination to comparisons between similar articles of trade.** Moreover, the operative word in Article 1102 is "similar", not "identical". In addition to giving the reasonably broad language of Article 1102 its due, a Tribunal must also take into account the objects of NAFTA, which include according to Article 102(1)(c) "to increase substantially investment opportunities in the territories of the Parties.". . . **Cases of alleged denial of national treatment must be decided in their own factual**

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349 *See* Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, pp. 958:13-972:15 (Spanish), pp. 827:11-838:11 (English).

350 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 692, 694.

351 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 5, 120.

352 **CL-0122**, *William Ralph Clayton, William Richard Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 692, 694 (emphasis added).

and regulatory context. In the present case, what is at issue is whether the Investor was treated less favorably for the purpose of an environmental assessment.

152. Applying this reasoning, the *Bilcon* tribunal determined that three of the five projects identified by Bilcon were in "like circumstances" with its own because they each "involved assessments that included the marine terminal component of a project that was connected to a quarry and took place in an ecologically sensitive coastal area."[353] In choosing the comparable projects, the tribunal considered many of the same factors present here, including that "many of the environmental concerns will be similar";[354] other projects were also "close to sensitive coastal/marine environments";[355] and comparator projects had a greater "potential for damage"[356] to species' habitats.[357]

153. Additionally, the *Bilcon* tribunal considered that all projects were comparable since they were subject to the same federal environmental law.[358] This is consistent with *Grand River*, in which the tribunal found "the identity of the legal regime(s) applicable to a claimant and its purported comparators to be a compelling factor in assessing whether like is indeed being compared to like for purposes of Articles 1102 and 1103."[359]

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353 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 696.

354 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 697; Claimant's Reply, ¶ 276.

355 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 698 (citing **CL-0197,** *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) First Expert Report of David Estrin, 8 July 2011, ¶ 35); Claimant's Reply, ¶ 276.

356 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 699; Claimant's Reply, ¶ 276.

357 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 699; Claimant's Reply, ¶ 276.

358 As the *Bilcon* tribunal held: "The federal Canada law in question, the CEAA, is one of very general application. It applies the 'likely significant adverse effects after mitigation' standard of assessment as a necessary component of environmental review across a wide range of modes and industries, including any marine terminals or quarries that are assessed under its provisions." **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 694.

359 **CL-0057**, *Grand River Enterprises Six Nations, Ltd., et al. v. United States of America* (UNCITRAL) Award, 12 January 2011, ¶ 167.

154. This approach is not novel. Other tribunals have recognized that projects can be comparable despite belonging to different sectors. For example, the tribunal in *ADM v. Mexico* noted that "it is the Tribunal's view that when no identical comparators exist, the foreign investor may be compared with less like comparators, if the overall circumstances of the case suggest that they are in like circumstances."[360] In a similar analysis to that of the *Bilcon* tribunal, the *Occidental v. Ecuador* tribunal rejected Ecuador's objection to the comparability of certain projects, which centered on the fact that the other projects were not in the oil business, unlike Occidental's.[361] In dismissing that objection, the tribunal explained that "the purpose of national treatment is to protect investors as compared to local producers, and this cannot be done by addressing exclusively the sector in which the particular activity is undertaken."[362]

155. With the assistance of its Mexican environmental impact expert, Vladimir Pliego,[363] Claimant identified six Mexican-owned dredging projects that are comparable to Don Diego. These are: (i) the ESSA Project;[364] (ii) the Laguna Verde Project;[365] (iii) the Sayulita Project;[366] (iv) the Veracruz Project;[367] (v) the Matamoros Project;[368] and (vi) the Santa Rosalía Project.[369]

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360 **CL-0010**, *Archer Daniels Midland Company and Tate & Lyle Ingredients Americas, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/04/5) Award, 21 November 2007, ¶ 202.

361 **CL-0179**, *Occidental Exploration and Production Company v. The Republic of Ecuador* (LCIA Case No. UN 3467) Final Award, 1 July 2004, ¶ 171.

362 **CL-0179**, *Occidental Exploration and Production Company v. The Republic of Ecuador* (LCIA Case No. UN 3467) Final Award, 1 July 2004, ¶ 173. *See also* **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 693, for the same proposition.

363 Mr. Pliego has extensive experience as a public servant, including serving as an expert for the assessment of environmental damage on coastal environments for the former Procuraduría General de la República and more than 20 years at CONANP and CONABIO, both agencies within SEMARNAT. **CD-0003**, Expert Presentation of Vladimir Pliego Moreno, p. 2.

364 **C-0103**, MIA ESSA Project, January 2008.

365 **C-0138**, MIA Laguna Verde Project, December 2015.

366 **C-0113**, MIA Sayulita Project.

367 **C-0118**, MIA Veracruz Project.

368 **C-0034**, MIA Matamoros Project.

369 **C-0135**, MIA Santa Rosalía Project, June 2019.

156. As Mr. Pliego explained at the hearing, under the proper comparison related to environmental impact from dredging, the main activity in each project:[370]

> Como un contexto necesario para hacer esta comparación, debo recordar que la evaluación de impacto ambiental es un instrumento de política ambiental que tiene el objetivo de prevenir, mitigar y restaurar los daños al ambiente. El artículo 28 de la LEGEEPA establece los objetivos para proteger el ambiente y preservar y restaurar ecosistemas a fin de que las actividades que se realicen eviten o reduzcan al mínimo los efectos negativos sobre el medioambiente.
>
> **Es decir, no importa quién promueve el proyecto, no importa qué fin persigue el proyecto, lo importante es valorar qué impactos ambientales puede tener una actividad para establecer medidas de prevención y mitigación.**
>
> **En este caso, la actividad es el dragado.**

157. Indeed, [redacted] just as it would any other dredging project.[371] Mr. Pliego also explained that the difference Respondent is trying to draw between the other projects, which Mexico calls "maintenance dredging," and the Don Diego Project, which Mexico denominates "capital dredging," is artificial:[372]

> P: De acuerdo. Entonces, ¿usted no está de acuerdo en que exista esta diferencia entre tipos de dragado?

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370 Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, p. 959:6-22 (Spanish), pp. 827:22-828:13 ("It is necessary to give context for this comparison. I have to recall that the MIA is an environment policy instrument, and the purpose of it is to prevent, mitigate and restore damage to the environment. Article 28 of the LGEEPA indicates that the purpose is to preserve the environment and also to restore the ecosystems and to reduce to a minimum the negative effects on the environment. **It doesn't matter who promotes the Project. It doesn't matter what the purpose of the Project is. The important thing is to assess the environmental impact that a certain activity may have to establish prevention and mitigation measures. In this case, the activity is the dredging activity**.") (emphasis added); *see also* Pliego ER1, ¶¶ 282-288.

371 Hrg. Day 7 Tr., [redacted], 10 May 2022, pp. 1897:18-1898:14 (Spanish Tr.), p. 1695:5-17 (English Tr.).

372 Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, p. 984:5-12 (Spanish), 848:11-17 (English) ("Q. Okay. Then, you don't believe that there is--then you don't believe that there's a difference in the type of dredging? A. In my technical analysis, there is no difference. It's comparing dredging programs in areas that the LGEEPA defines as coastal areas.").

> R: En el análisis técnico que hice, no hay ninguna diferencia. Son una comparación entre dragados en el fondo marino en el mismo sitio donde define la propia LGEEPA que son ecosistemas costeros.

158. With respect to the regulatory regime, just like in *Bilcon*, all comparator projects were required to submit an MIA and to undergo a PEIA pursuant to Article 28 of LGEEPA.[373] And while Respondent attempts to distinguish the Don Diego Project by claiming that it is controlled by Mexican mining law—even deeming the mining law *lex specialis*[374]—the reality is that mining law operates only to grant the concession holder title over the concession, whereas the environmental evaluation performed by SEMARNAT via the DGIRA is governed only by LGEEPA and its ancillary regulations.[375] Moreover, like Don Diego, all comparator projects are situated within "coastal ecosystems" as defined by Article III, fraction XIII Bis of LGEEPA.[376] Coastal ecosystems under Mexican law are defined as those below 200 meters in depth.[377]

159. Claimant has also demonstrated that the projects are comparable vis-à-vis the environmental impact caused by dredging, including:

a. Potential environmental impacts on species listed in NOM-059, including endangered sea turtles;[378]

b. Potential impacts on the seabed;[379] and

c. Potential impacts on the water column.[380]

160. However, unlike the Don Diego Project, the comparators had the potential to cause greater environmental damage given that they are all located in shallower areas (areas

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373 Claimant's Reply, ¶¶ 289-291; see also Pliego ER1, ¶¶ 289-293.

374 **RD-0001**, Respondent's Opening Presentation, p. 54.

375 Pliego ER1, ¶¶ 289-293. *See also* Claimant's Reply, ¶¶ 289-291.

376 Pliego ER1, ¶¶ 294-299; **C-0014**, LGEEPA, 5 June 2018, art. 3, fr. XIII(Bis).

377 **C-0014**, LGEEPA, 5 June 2018, art. 3, fr. XIII(Bis).

378 Pliego ER1, ¶¶ 300-305, and Table 6; **CD-0003**, Expert Presentation of Vladimir Pliego Moreno, p. 21. At the hearing, Mr. Pliego reiterated that all comparator projects take place in areas with evident and documented presence of sea turtles. Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, pp. 964:16-966:16 (Spanish Tr.), pp. 832:4-833:15 (English Tr.).

379 Pliego ER1, ¶¶ 306-312, and Table 7; **CD-0003**, Expert Presentation of Vladimir Pliego Moreno, p. 21.

380 *See* Claimant's Reply, ¶¶ 294-303; **CD-0003**, Expert Presentation of Vladimir Pliego Moreno, p. 21; Pliego ER1, ¶¶ 313-317, and Table 8.

with greater primary production and biodiversity),[381] and several take place within Natural Protected Areas (areas that the Mexican state prioritizes for conservation).[382] In contrast, the Don Diego Project is not within a natural protected area or any other protection designation.[383]

161. While Respondent's experts tried to distract the Tribunal by repeatedly referencing the comparator projects' dimensions, the dimensions of the projects should have no bearing on whether the projects are comparable for the purposes of environmental impact. In fact, SEMARNAT itself cautions against this common fallacy in its published MIA drafting guidelines: "[E]l consultor debe recordar que **la magnitud de los impactos no necesariamente tiene una relación proporcionalmente directa al tamaño del proyecto**."[384] As Mr. Pliego further explains:[385]

> [L]a guía para la elaboración de la Manifestación de Impacto Ambiental modalidad regional publicada por la SEMARNAT en su página, señala que el consultor debe recordar que la magnitud de los impactos no necesariamente tiene una relación proporcionalmente directa al tamaño del proyecto. Esto es especialmente relevante en la comparación de proyectos que he realizado, porque un proyecto de menor tamaño, pero ubicado en un sitio de mayor biodiversidad, por ejemplo, la zona núcleo de un área natural protegida, puede tener mayores impactos ambientales que un proyecto de mayor tamaño ubicado en un sitio con menor biodiversidad, por ejemplo, fuera de un área natural protegida.

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381 Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, pp. 963:16-964:15 (Spanish), pp. 831:11-832:3 (English).

382 **CD-0003**, Expert Presentation of Vladimir Pliego Moreno, pp. 24-25; Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, p. 962:7-15 (Spanish Tr.), p. 830:9-14 (English Tr.).

383 Claimant's Reply, ¶ 306.

384 **VP-0004**, Guía - MIA Regional, SEMARNAT, p. 50 ("[T]he consultant must remember that **the magnitude of the impacts do not necessarily have a directly proportional relationship to the size of the project**" (counsel translation; emphasis added)).

385 Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, pp. 961:7-962:1 (Spanish), pp. 829:13-830:4 (English) ("[T]he guidelines for the preparation of a regional MIA published by SEMARNAT indicates that the consultant must recall that the magnitude of the impact does not necessarily bear a proportional relationship that is direct with the size of the Project, and that is especially relevant with the comparison projects that I have conducted. A smaller project that is located in a very rich biodiversity area, for example, a natural protected area, can have more environmental impact than a larger that is located in a place where there is less biodiversity; for example, outside a protected area.").

B. SEMARNAT Accorded the Don Diego Project Less Favorable Treatment than That Granted to the Comparable Projects

162. As Claimant has demonstrated throughout this proceeding, the Don Diego Project received less favorable treatment vis-à-vis the environmental impact assessment than the comparators' MIAs.[386] This disparate treatment is evident in SEMARNAT's analysis of the following categories across all six comparators in relation to Don Diego:[387]

a. <u>The evaluation of possible impacts on sea turtles and other species listed on NOM-059</u>:[388]

i. Although the presence of *Caretta caretta* and/or other endangered sea turtle species was reported in all comparator projects, **none of these comparators proposed mitigation measures and yet SEMARNAT approved them all**. Only in the case of the Laguna Verde and Matamoros projects was the approval conditioned on the sponsors presenting sea turtle impact mitigation measures.[389] In one project, SEMARNAT accepted the sponsors' representation that there would be no collisions with turtles at face value, with no scientific support whatsoever.[390] In contrast, Don Diego was rejected even though it was presented with world-class mitigation measures designed to prevent any impact on sea turtles.

ii. Worse yet, the **Port of Veracruz project contemplated the destruction of *Acropora palmata*, a species itself listed in NOM-059 and which serves as the habitat for the critically endangered *Eretmochelys imbricata turtle*.**[391] As Mr. Pliego succinctly explained at the hearing, "[e]ste ejemplo nos ayuda también a clarificar la aplicación de criterios ambientales diferenciados. Se aprueba este proyecto con indudablemente afectación al hábitat de la tortuga marina, ahí no hay duda; una tortuga marina en peligro de extinción, según la normatividad nacional, y al borde de la extinción considerada internacionalmente. Y, en cambio, se niega la autorización al proyecto Don Diego con toda una serie de medidas para

386 Claimant's Memorial, ¶¶ 329-347; Claimant's Reply, ¶¶ 304-321.

387 For a more complete accounting of the less than favorable treatment accorded to ExO, *see* Claimant's Memorial, ¶¶ 329-347; Claimant's Reply, ¶¶ 304-321.

388 Claimant's Memorial, ¶¶ 332-339; Claimant's Reply, ¶¶ 308-315.

389 Claimant's Memorial, ¶¶ 182, 185, 331, 335-336; Claimant's Reply, ¶¶ 311-315; Pliego ER1, ¶¶ 300-305, 366-371, and Table 6; Pliego ER2, ¶¶ 133-137, 141-142, 145-146, 156-157, 168, 172, 175, 187, 189.

390 Claimant's Memorial, ¶ 336; Claimant's Reply, ¶ 312; Pliego ER1, ¶ 367; Pliego ER2, ¶¶ 133-137; **C-0103**, ESSA Resolution, 19 May 2008, p. 183.

391 Claimant's Memorial, ¶ 338; Claimant's Reply, ¶ 309; Pliego ER1, ¶¶ 363-364; Pliego ER2, ¶¶ 149-157, 166-168.

evitar un escenario hipotético de afectación de la tortuga marina y ubicado fuera de cualquier área de protección."[392]

b. The evaluation of impact to the seabed:[393] For the ESSA, Laguna Verde, and Santa Rosalía projects, SEMARNAT accepted the notion that benthic organisms in dredged areas recover quickly, while for the Veracruz and Sayulita projects, the resolutions do not even discuss the impact of dredging on benthic organisms.[394] In contrast, in the Second Denial, SEMARNAT asserts that there would be significant impact on benthic organisms in the seabed and that remediation was not a realistic expectation given that the science of remediation was still "nascent."[395]

The evaluation of impact to the water column:[396] Although the other projects took place in shallower, more sensitive waters, SEMARNAT did not scrutinize the impact in the water column as it did in the Don Diego Project.

i. None of the projects limited dredge overflow or used a downpipe or Eco-tube as the Don Diego Project did.

ii. Regarding the Laguna Verde Project, SEMARNAT noted that species in the area were well-represented and could tolerate variations in the suspension of solids in the water column.[397]

iii. For the ESSA and Santa Rosalía projects, the agency noted that the turbidity would naturally disappear.[398]

iv. Finally, when analyzing the reef-destroying Veracruz Project, SEMARNAT simply accepted the sponsor's proposed mitigation measure of ensuring a minimum of 25% light penetration in the water column despite not explaining how it planned to do so.[399]

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392 Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, pp. 970:14-971:4 (Spanish Tr.), pp. 836:16-837:7 (English Tr.) ("[w]ith this example, we can further clarify implementation of environmental criteria that are differential. This Project is approved where, undoubtedly, it will be impacting the habitat of sea turtles—there's no doubt about it—a sea turtle that is critically endangered, according to the National Policy, and internationally deemed close to extinction. And on the other hand, authorization of the Don Diego Project is denied. A Project that has so many measures in place in order to avoid impacting the potential on hypothetical sea turtle, and on furthermore, it's outside any Protected Natural Area.").

393 Claimant's Memorial, ¶¶ 340-342; Claimant's Reply, ¶¶ 316-317.

394 Claimant's Memorial, ¶¶ 340-342; Claimant's Reply, ¶¶ 316-317; Pliego ER1, ¶¶ 373-375, 399-400.

395 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 326, 508-509 (Spanish), pp. 326, 505-506 (English).

396 Claimant's Memorial, ¶¶ 343-344; Claimant's Reply, ¶ 318.

397 Claimant's Memorial, ¶ 344; Claimant's Reply, ¶ 318; Pliego ER1, ¶ 378.

398 Claimant's Memorial, ¶ 344; Claimant's Reply, ¶ 318; Pliego ER1, ¶¶ 379, 381-382.

399 Claimant's Memorial, ¶ 344; Claimant's Reply, ¶ 318; Pliego ER1, ¶¶ 352, 380.

c. The evaluation of mitigation measures:[400]

i. The Santa Rosalía Project **did not contemplate a mitigation program** and therefore did not tether specific mitigation measures to foreseen impacts, yet the Project was conditionally approved on the development of mitigation measures and objectives.[401]

ii. The Laguna Verde Project **was authorized without an analysis of the possible effect of dredgers on marine fauna**, even though it was principally a dredging project.[402]

iii. While **the Sayulita Project did not even specify the type of dredger to be used,** this was not an obstacle to approval, with SEMARNAT recommending the use of technology that reduces sediment dispersion.[403]

iv. Similarly, **SEMARNAT approved the Veracruz Project without knowing the precise location**, and therefore impacts, of one of its major components.[404]

v. Finally, SEMARNAT conditionally approved the Matamoros Project without any understanding of, or any mitigation measures designed to address, the impact of the terrestrial transport of dredged sediment.[405]

vi. By contrast, SEMARNAT dismissed ExO's proposed mitigation measures as insufficient while also equating these proposed mitigation measures to admissions that the Project would have an adverse impact on the environment. As SEMARNAT put it, "el proponer medidas de mitigación de impactos sobre las tortugas *Caretta caretta* pone de manifiesto que la promovente si prevé impactos directos sobre individuos de tortugas."[406]

163. The circumstances of the Don Diego Project as related to the comparators is analogous to *Bilcon*, where the tribunal determined that different environmental impact assessments of comparable projects constituted less favorable treatment.[407] Of particular importance

400 Claimant's Memorial, ¶¶ 345-347; Claimant's Reply, ¶¶ 319-321.

401 Claimant's Reply, ¶ 320(a); Pliego ER1, ¶ 390.

402 Claimant's Reply, ¶ 320(b); Pliego ER1, ¶ 392.

403 Claimant's Reply, ¶ 320(c); Pliego ER1, ¶¶ 286, 393.

404 Claimant's Reply, ¶ 320(d); Pliego ER1, ¶ 395.

405 Claimant's Reply, ¶ 320(e); Pliego ER1, ¶ 398.

406 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 503 (Spanish), p. 500 (English) ("[p]roposing mitigation measures with respect to impact over loggerhead turtles shows that the petitioner does foresee direct impact over turtle individuals.") (original emphasis removed).

407 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 694.

to the *Bilcon* tribunal was whether mitigation measures had been properly considered by the evaluator.[408] Additionally, the *Bilcon* tribunal acknowledged that part of the analysis of treatment includes "whether a less favorable evaluative standard [was] applied" in relation to the foreign-owned project.[409]

164. Here, in addition to according less favorable treatment to the Don Diego Project evaluation, SEMARNAT nonsensically chastised ExO for proposing mitigation measures in the first place. It is worth noting that in annulling the First Denial, the TFJA ordered SEMARNAT, among other things, to analyze "todos y cada uno de los aspectos que fueron expuestos en la solicitud y su alcance por la actora, incluyendo las medidas de mitigación propuestas por la promovente en la MIA."[410] However, as demonstrated by Claimant, Secretary Pacchiano prevented the DGIRA from conducting a good faith review, ordering it instead to deny the Don Diego Project based on illegal considerations.

165. Despite all of these projects being extremely deficient as compared to the Don Diego Project, they were conditionally approved by SEMARNAT subject to additional mitigation measures that it imposed and the implementation of adaptive management and supervision of the DGIRA. [redacted][411] And if Secretary Pacchiano had not intervened, SEMARNAT would have conditionally approved the Don Diego Project as it did with the other comparable dredging projects described in this section. This differentiated treatment, not based on SEMARNAT precedent or science, but rather premised on the whims of Secretary Pacchiano, also breached NAFTA Article 1102.

166. It is telling that at no point did Respondent or its experts try to justify why the environmental impact of these other projects could not be equated to that of the Don

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408 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 700, 704, 707-708, 735.

409 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 705

410 **C-0170**, TFJA Ruling, 21 March 2018, p. 212 (Spanish), p. 194 (English) (ordering SEMARNAT to analyze "each and every one of the aspects that were exposed in the application and its scope by the plaintiff, including the mitigation measures proposed by the petitioner in the MIA.").

411 [redacted]

Diego Project. For example, if Respondent's interpretation that affecting one single individual of a protected species is sufficient to deny a project under Article 35(III)(b) of LGEEPA is the correct legal interpretation,[412] the Port of Veracruz Project, which destroyed the coral *Acropora palmata* species and the habitat of the *Eretmochelys imbricata* turtle, would have been denied. Respondent's silence speaks volumes to the disparate treatment that the Don Diego Project received vis-à-vis the other projects.

C. Mexico Has Failed to Prove That There Were Legitimate Reasons to Justify Differential Treatment

167. Since Claimant has proven the three elements of the national treatment breach, Mexico must demonstrate how its officials properly denied the MIA for a non-discriminatory public policy reason.[413]

168. Because there is no justification for the treatment accorded to the Don Diego Project, Respondent and its experts were forced to manufacture one by pointing to the Gulf of Ulloa's status as a Biological Activity Center ("**BAC**").[414] But as Mr. Pliego explained, unlike Natural Protected Areas (or "**ANPs**", the Spanish acronym for Areas Naturales Protegidas), which require that the Mexican States prioritize the conservation and protection of areas designated as such, BACs are not a legal category.[415] This is even more startling when considering that the comparable projects were located at or next to highly sensitive environmental areas protected by different Mexican and international regimes.[416] Mr.

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412 *See supra*, ¶¶ 87-93.

413 Claimant's Memorial, ¶ 323; Claimant's Reply, ¶¶ 260-261. **CL-0068**, *Marvin Feldman v. Mexico* (ICSID Case No. ARB(AF)/99/1) Award, 16 December 2002, ¶ 177; **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 719; for outside the NAFTA process, see, e.g., **CL-0224**, *Georg Gavrilovic and Gavrilovic d.o.o. v. Republic of Croatia* (ICSID Case No. ARB/12/39) Award, 25 July 2018, ¶ 1193.

414 Grupo de Expertos en Tortugas Marinas ER, ¶¶ 50-53.

415 **CD-0003**, Expert Presentation of Vladimir Pliego Moreno, pp. 24-25, 35.

416 For example: the ESSA Project took place in a UNESCO World Heritage Site, a UNESCO Man and Biosphere Reserve, a RAMSAR site, and a Biosphere reserve under Mexican legislation; the Sayulita Project contemplated the installation of a component within a zone of influence for a naturally protected area; and the Laguna Verde Project was located within a Priority Marine Region for Conservation, as well as a Marine Priority Site. See Claimant's Memorial, ¶¶ 348-352.

Pliego explained why it is highly relevant that these projects are located in Natural Protected Areas:[417]

> [L]os centros de actividad biológica no gozan de protección especial en la legislación nacional. Al contrario de las áreas naturales protegidas que, como he señalado, reflejan una prioridad del Estado mexicano para proteger la biodiversidad in situ, que se establecen las ANPs después de una serie, a veces muchos años, de estudios y análisis sobre la biodiversidad que existe en el sitio y sobre la presencia de especies en riesgo.

169. Respondent further attempted to justify the MIA denials by invoking the so-called precautionary principle, claiming that this was the first project of its kind.[418] However, as explained by Dr. Herrera, there is a misapplication of the precautionary principle in the case of Don Diego because there was no lack of scientific certainty over the risks entailed in proceeding with the Project, and mitigation measures had been proposed.[419] Indeed, dredging is not a new procedure in Mexico, and there was nothing novel in the way Don Diego's sands were going to be dredged.[420] As Mr. Pliego succinctly explained to this Tribunal:[421]

> La Manifestación de Impacto Ambiental del proyecto Don Diego es robusta de acuerdo a la normatividad mexicana y a las guías de la SEMARNAT y refieren los mejores estudios científicos. La

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417 Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, pp. 973:19-974:7 (Spanish Tr.), p. 839:10-17 (English Tr.) ("Biological Activity Centers have no special protection in national legislation, contrary to the Protected Natural Areas, which as I pointed out, are priority to the Mexican State to protect biodiversity in situ. This is in the PNAs after . . . established after many years of studying and analyzing biodiversity of the site and looking at the endangered species.").

418 Respondent's Rejoinder, ¶¶ 367-380.

419 Herrera ER1, ¶¶ 81-86; Hrg. Day 3 Tr., Testimony of Hector Herrera, 26 January 2022, pp. 727:6-20, 728:7-729:16 (Spanish), pp. 639:4-15, 639:22-641:4 (English).

420 Claimant's Reply, ¶¶ 122-127.

421 Hrg. Day 4 Tr., Testimony of Vladimir Pliego, 27 January 2022, pp. 976:12-977:10 (Spanish Tr.), pp. 841:10-842:3 (English Tr.) ("The MIA of the Don Diego Project is solid, in accordance with Mexican policies and SEMARNAT guidelines and refers to the best scientific studies. The location, design, and adaptive management are elements for environmental protection . . . embedded in the Project. These elements proposed by the Project would have guaranteed that the Caretta caretta, and other species of sea turtles in the Gulf of Ulloa, would not be affected. The Don Diego Project wouldn't have affected fisheries because it's outside the fishing area. **SEMARNAT had all of this information. Had SEMARNAT used information and applied the same environmental criteria with which it authorized the comparables, then it would have had to authorize the Don Diego Project with conditions**.") (emphasis added).

> localización, diseño y manejo adaptativo, son elementos de protección ambiental del proyecto.
>
> Estos elementos y las medidas de prevención y mitigación que propone el proyecto habrían garantizado la no afectación de la especie Caretta caretta ni de otras especies de tortugas marinas en el Golfo de Ulloa. El proyecto Don Diego tampoco hubiera afectado la pesca porque se encuentra fuera de las zonas de pesca.
>
> **Toda esta información la tenía SEMARNAT. Si SEMARNAT hubiera utilizado toda esta información y aplicado los mismos criterios ambientales con los que autorizó los proyectos comparados, habría tenido que autorizar de manera condicionada el proyecto Don Diego.**

V. THE TFJA'S ONGOING PROCEEDINGS ARE IRRELEVANT FOR THE PURPOSE OF THE NAFTA PROCEEDINGS[422]

170. Notably, while Mexico has argued (erroneously) that Odyssey's claims before this Tribunal are identical to those ExO has put before the TFJA,[423] it has never framed this as a jurisdictional or admissibility objection. The reason for this is simple. As Mexico is fully aware, there is no legal impediment to bringing a NAFTA claim and continuing the TFJA administrative proceedings in tandem.[424]

171. On the contrary, since ExO seeks only declaratory relief before the TFJA, the proceedings are expressly permitted by the waiver provision of NAFTA Article 1121 with which

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422 This section answers Tribunal Question No. 1.

423 Hrg. Day 1 Tr., Respondent's Opening Statement, 24 January 2022, pp. 127:2-129:17 (Spanish Tr.), pp. 113:20-116:2 (English Tr.). *See also* Respondent's Rejoinder, ¶¶ 22-27, 34-40.

424 To be clear: no objection to admissibility or jurisdiction under Article 1121 is before the Tribunal. Mexico's Rejoinder expressly states that it has withdrawn all of its jurisdictional objections (*see* Respondent's Rejoinder, ¶ 310), and Claimant only refers to Article 1121 to address the Tribunal's question. Mexico does argue that: (i) under Article 1116, "la Demandante no puede presentar una demanda por violación del artículo 1105 como inversionista en virtud del artículo 1116 del TLCAN" ("the Claimant cannot file a claim for violation of the Article 1105 as an investor under Article 1116 of NAFTA"); and that (ii) there is a difference in the types of damages that can be sought pursuant to Article 1116 vis-à-vis Article 1117. Respondent's Rejoinder, ¶¶ 308-309. Regarding Mexico's first point, the distinction is immaterial because Claimant is bringing both Article 1116 and 1117 claims. Further, Article 1116 states: "An investor of a Party may submit to arbitration under this Section a claim that another Party has breached an obligation under: (a) Section A . . . ." **CL-0081**, NAFTA, art. 1116. Accordingly, Odyssey is entitled to claim for the breaches of any standard under Chapter 11 of NAFTA Section A pursuant to Article 1116, including for violations of Article 1105. Mexico's second argument is addressed in the section on quantum.

Claimant and ExO complied in order to commence these proceedings.[425] The existence of the TFJA proceedings in no way impacts the Tribunal's authority to award damages to Odyssey in this case.

A. NAFTA Article 1121 Allows Investors to Seek Declaratory Relief in Local Courts in Parallel with a Claim Under the Treaty for Compensation[426]

172. The TFJA proceedings (and any hypothetical decision) have no bearing on this Tribunal's jurisdiction or the admissibility of this claim. Those proceedings do not involve claims for compensatory damages, but rather are limited to claims for declaratory relief.[427]

173. NAFTA Article 1121 expressly recognizes an investor's right to seek "injunctive, declaratory or other extraordinary relief, not involving the payment of damages" before a domestic tribunal while simultaneously pursuing a damages claim for breaches of NAFTA Chapter 11 before an arbitration tribunal.[428] That is exactly what has occurred here: ExO has applied to the TFJA (an administrative court) to overturn the Second Denial on Mexican legal grounds, while Odyssey has sought compensation before this Tribunal for Mexico's breaches of NAFTA. The TFJA does not have the power to award monetary relief; it can only confirm or annul SEMARNAT's decision or, theoretically, order the MIA to be granted (in practice, this has never happened).[429]

174. Additionally, unlike many investment treaties, NAFTA does not require investors to exhaust local remedies before bringing a treaty claim. "[R]ather than confirming or repeating the classical rule of exhaustion of local remedies," NAFTA instead "envisages a

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425 Annex A (Waiver and Consent) to Claimant's Notice of Arbitration.

426 This subsection answers Tribunal Question No. 2.

427 *See* Claimant's Memorial, ¶¶ 215-216; **C-0158**, Ley Federal de Procedimiento Contencioso Administrativo, 27 January 2017, art. 52(IV). ExO's request in its nullity appeal to the TFJA is for declaratory relief insofar as it asks the TFJA to annul SEMARNAT's decision. ExO does not request damages. *See* **C-0186**, ExO's Nullity Appeal before the TFJA, 19 August 2019, pp. 196-197.

428 **CL-0081**, NAFTA, arts. 1121(1)(b) and 1121(2)(b) provide that Odyssey and ExO were required to "waive their right to initiate or continue" any domestic proceeding before Mexican administrative courts or tribunals when Odyssey submitted its claims to arbitration under NAFTA Chapter 11. However, these articles do not require waiver of "proceedings for injunctive, declaratory or other extraordinary relief, not involving the payment of damages."

429 **C-0158**, Ley Federal de Procedimiento Contencioso Administrativo, 27 January 2017, art. 52. On why the risk is purely theoretical, see *infra,* ¶¶ 180-181.

situation where domestic proceedings with respect to the same alleged breach . . . are either available or even pending in a court or tribunal operating under the law of any Party"[430] while a NAFTA claim is pending. This position is well-established by NAFTA tribunals.[431]

175. Moreover, Odyssey was not required to exhaust local remedies to bring its claim for breach of administrative due process under the fair and equitable treatment standard. Unlike denial of justice claims involving judicial decisions, which require the exhaustion of domestic judicial remedies, administrative due process violation claims do not.[432] No denial of justice claim has been submitted before this Tribunal because Odyssey submits that *SEMARNAT* breached Claimant's due process rights under Article 1105 of NAFTA—in addition to other breaches of the MST standard, such as acting non-transparently, arbitrarily, and in breach of Odyssey's legitimate expectations. Claimant is not impugning any decision, ruling, or conduct of the Mexican courts. Therefore, Mexico's reliance in its Rejoinder on several investment cases dealing with denial of judicial justice and exhaustion of local remedies is misplaced.[433]

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430 **CL-0068**, *Marvin Feldman v. Mexico* (ICSID Case No. ARB(AF)/99/1) Award, 16 December 2002, ¶ 73. *See also* **CL-0256**, S. Puig, "Investor-State Tribunals and Constitutional Courts: The Mexican Sweeteners Saga," 5 Mexican L. Rev. 199, 215 (2013) ("[T]he NAFTA model allows foreign investors to bring claims without first exhausting local remedies; in some circumstances, it even permits simultaneous or subsequent use of the domestic and international fora.").

431 **CL-0070**, *Merrill & Ring Forestry L.P. v. Canada* (UNCITRAL) Award, 31 March 2010, ¶¶ 26-32 (finding the implementation of Canada's timber export regime by provincial and federal agencies inconsistent with NAFTA Chapter 11 even though that action had not first been challenged in Canadian court); **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL), Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 36, 742 (finding in favor of claimants' challenge to actions and omissions by the Canadian Minister of Environment and provincial regulators without requiring exhaustion of domestic remedies).

432 **CL-0257**, C. McLachlan, et al., *International Investment Arbitration: Substantive Principles* (Oxford, 2017), ¶ 7.104 ("[T]he investor may pursue a claim for breach of the treaty standards that is based directly upon allegations of administrative misconduct, irrespective of whether he has sought redress before the local courts. The claim cannot be impugned, either as a matter of jurisdiction or substance, solely on the ground of a failure to resort to national judicial remedies."). *See also* **CL-0258**, United Nations Conference on Trade and Development (UNCTAD), "Fair and Equitable Treatment: UNCTAD Series on Issues in International Investment Agreements II" (United Nations 2012), n.87 ("[T]he due process requirement appears to be independent from denial of justice and thus there is no need to exhaust local remedies.").

433 Respondent's Rejoinder, ¶¶ 394-406.

B. The TFJA Proceedings and the NAFTA Proceedings Involve Different Relief and Are Based Upon Different Legal Regimes

176. Mexico has spilled much ink on the spurious proposition that ExO is pursuing the same claims before the TFJA as it is before this Tribunal.[434] This proposition is wrong; the two actions are very different. While ExO is seeking declaratory relief that SEMARNAT's decision breached Mexican law in the TFJA process, in the NAFTA proceeding, Odyssey is requesting this Tribunal to award damages under international law. Table No. 1 below shows a series of differences between the two proceedings:

Table No. 1: Comparison between the TFJA and the NAFTA Proceedings		
	TFJA Proceedings	**NAFTA Proceedings**
Applicable law	Mexican Law.	International Law (Chapter 11 of NAFTA).
Alleged breaches	SEMARNAT breached the Ley Federal de Procedimiento Contencioso Administrativo ("**LFPCA**") and Article 17 of the Mexican Constitution insofar as it failed to properly support its conclusions to deny the MIA.[435]	Mexico breached NAFTA Articles 1105, 1110, and 1102.[436]
Measures that are being questioned	SEMARNAT's administrative breaches for not properly taking into account the available scientific evidence.[437]	Secretary Pacchiano's arbitrary decision to deny the Project, the indirect expropriation of Claimant's investment, and the discriminatory treatment of Claimant vis-à-vis Mexican investors.[438]

434 Respondent's Counter-Memorial, ¶¶ 379-384; Respondent's Rejoinder, ¶¶ 18-46; *see also* **RD-0001**, Respondent's Opening Presentation, pp. 17-25.

435 *See* **C-0186**, ExO's Nullity Appeal before the TFJA, 19 August 2019, pp. 13-14.

436 *See* Claimant's Memorial, ¶¶ 433(b)-(d); Claimant's Reply, ¶¶ 585(b)-(d).

437 *See* **C-0186**, ExO's Nullity Appeal before the TFJA, 19 August 2019, pp. 15-188 (Spanish), pp. 14-184 (English).

438 *See* Claimant's Memorial, Section IV; Claimant's Reply, Section IV.

Relief sought	Declaratory relief – annulment of SEMARNAT's Second Denial and for the TFJA to order SEMARNAT to grant the Don Diego MIA's authorization.[439]	Monetary damages – compensation sought for the NAFTA breaches under international law.[440]
Respondent entity	SEMARNAT as the issuing entity.[441]	The United States of Mexico.[442]
Tribunal	Mexico's Administrative Law Tribunal – Tribunal Federal de Justicia Administrativa.	International Arbitration Tribunal constituted under Chapter 11 of NAFTA.

177. Mexico has not challenged the *admissibility* of Odyssey's claim, likely because it recognizes the differences between these proceedings and those before the TFJA. Nonetheless, Respondent has repeatedly suggested that the TFJA proceedings should somehow preclude this Tribunal from issuing an award. Mexico does not cite any legal basis for this position,[443] and it is wrong as a matter of international law. NAFTA tribunals have consistently confirmed that domestic declaratory relief proceedings do not prevent a tribunal from ascertaining liability for NAFTA breaches that arise out of the same underlying facts.[444]

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439 *See* **C-0186**, ExO's Nullity Appeal before the TFJA, 19 August 2019, pp. 196-197 (Spanish), pp. 194-195 (English).

440 *See* Claimant's Memorial, ¶ 433(e); Claimant's Reply, ¶ 585(e).

441 *See* **C-0186**, ExO's Nullity Appeal before the TFJA, 19 August 2019, pp. 5-6, 196-197 (Spanish), pp. 5-6, 194-195 (English).

442 *See* Claimant's Memorial, ¶ 1; Claimant's Reply, ¶ 1.

443 Respondent's Counter-Memorial, ¶¶ 382-384; Respondent's Rejoinder, ¶¶ 18-30.

444 **CL-0129**, *Detroit International Bridge Company v. Government of Canada* (PCA Case No. 2012-25) Award on Jurisdiction, 2 April 2015, ¶ 176 ("Article 1121(1)(b) and (2)(b) contains a limited exception for injunctive and declaratory proceedings brought against Canada in Canada, as long as those proceedings are 'not involving the payment of damages.'"). *See also* **CL-0068**, *Marvin Feldman v. Mexico* (ICSID Case No. ARB(AF)/99/1) Award, 16 December 2002, ¶ 78 ("[W]e are not barred from making that determination by the fact that not all of the issues have yet been resolved by Mexican courts. Otherwise, any arbitral tribunal could be prevented from making a decision simply by delaying local court proceedings. Nor is an action determined to be legal under Mexican law by Mexican courts necessarily legal under NAFTA or international law."); **CL-0027**, *Cargill, Incorporated v. United Mexican States* (ICSID Case No. ARB(AF)/05/2) Award, 18 September 2009, ¶ 303 ("[T]he Tribunal does not, and need not, rest its holding on the import permit requirement being domestically unlawful given its conclusion that the requirement is manifestly unjust and akin to an act in bad faith . . . the lawfulness of a domestic law does not presuppose its lawfulness under international law. Indeed, this is the very rationale for the customary international law minimum standard

178. Additionally, Respondent's NAFTA breaches are not before the TFJA, and the TFJA does not have the power to rectify those breaches. In the words of the *Marvin Roy Feldman v. Mexico* tribunal:[445]

> [Q]uestions as to whether Mexican law as determined by administrative authorities or Mexican courts is consistent with the requirements of NAFTA and international law are to be determined in this arbitral proceeding, and we are not barred from making that determination by the fact that not all of the issues have yet been resolved by Mexican courts. Otherwise, any arbitral tribunal could be prevented from making a decision simply by delaying local court proceedings.

C. There Is No Risk of Double Recovery

179. The pending TFJA proceedings and the TFJA's hypothetical decision regarding the Second Denial should not impact the Tribunal's determination of the appropriate compensation that Claimant is owed. In this regard, the tribunal's decision in *Chevron v. Ecuador* is instructive: faced with a similar question, the tribunal explained that "the Claimants' recovery should not be reduced based on the uncertain possibility of a favorable outcome in the national court proceedings."[446] Here, there is no risk that Odyssey will be compensated twice for Mexico's wrongful actions for the following reasons.

180. First, even though it theoretically could do so, the TFJA has never approved a MIA in practice.[447] The most the TFJA can be expected to do, as it did with ExO's First Denial, is

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of treatment of aliens: regardless of the views of each State, there is a minimum, a floor below which a State will be held internationally responsible for its conduct.").

445 **CL-0068**, *Marvin Feldman v. Mexico* (ICSID Case No. ARB(AF)/99/1) Award, 16 December 2002, ¶ 78

446 **CL-0259**, *Chevron Corporation (USA) and Texaco Petroleum Company (USA) v. The Republic of Ecuador* (PCA Case No. 34877), Partial Award on the Merits, 30 March 2010, ¶ 557.

447 *See* **C-0158**, Ley Federal de Procedimiento Contencioso Administrativo, 27 January 2017, art. 52(V). For example, in annulling the First Denial and declining to grant the Don Diego MIA, the TFJA explained that "el Tribunal no cuenta con la capacidad técnica para analizar dichas propuestas, y de analizarse las mismas por parte de este Tribunal, éste se estaría sustituyendo en las facultades que son propias y exclusivas de la Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT)." **C-0170**, TFJA Ruling, 21 March 2018, p. 187 (Spanish), p. 172 (English) ("the Tribunal does not have the technical capacity to analyze said proposals, and were the Tribunal to analyze the same, it would be standing into faculties that are proper and exclusive to the Ministry of the Environment and Natural Resources (SEMARNAT)." (counsel translation)).

annul SEMARNAT's decision and remand it back to SEMARNAT for a new decision,[448] and even then SEMARNAT could appeal the TJFA's ruling before superior courts.[449] Furthermore, given SEMARNAT's response to the TFJA's prior ruling, including publicly declaring it would deny the MIA again just days after it was notified of the TFJA's 2018 decision,[450] it is unreasonable to assume that any such future ruling would result in the MIA's approval. Moreover, even if the TFJA ordered SEMARNAT to issue a MIA, it could take several years until the MIA was finally approved (if at all).

181. If anything, the events of the last four years make it more likely, not less, that domestic politics would negatively impact SEMARNAT's treatment of the Don Diego MIA. Indeed, the stridency of the positions taken by Respondent throughout the arbitration does not remotely suggest that SEMARNAT will be any less influenced by an even more intensely political environment surrounding Odyssey's investment, especially taking into account the public statements of President Andrés López Obrador, who has denounced Mexican citizens working with foreign mining companies as traitors.[451]

182. Second, even if SEMARNAT were to grant Don Diego's MIA, it would not cure the NAFTA breach stemming from Secretary Pacchiano's arbitrary denial which rendered Odyssey's

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448 When annulling decisions by SEMARNAT, the TFJA regularly follows the same approach it did here, when it annulled the First Denial.

449 **C-0158**, Ley Federal de Procedimiento Contencioso Administrativo, 27 January 2017, arts. 52(IV), 53, 54, 57(II), and 63.

450 *See* **C-0470**, Informational Note (Tarjeta Informativa), 18 April 2018.

451 *See* Claimant's Interim Measures Request, ¶¶ 21-24. For example, as reported in **C-0338**, S. Sarmiento, "Traición a la patria," Pulso, 26 February 2021, Mexico's President stated: "Es 'una verguenza . . . que abogados mexicanos estén de empleados de empresas extranjeras que quieren seguir saqueando a México. Claro que son libres, pero ojalá vayan internalizando que eso es traición a la patria'" ("It is 'a disgrace . . . that Mexican lawyers are employed by foreign companies that want to continue looting Mexico. Of course, they are free to do so, but I wish that they start internalizing that that is treason to the nation.'" (counsel translation)); **C-0340**, Press Conference of President Andrés Manuel López Obrador, 11 March 2021, 2:25-2:48: "he who **gives the country's natural resources to foreigners is a traitor to the nation**." (counsel translation; emphasis added). President López Obrador made these remarks at a press briefing on 11 March 2021. **C-0341**, N. Jiménez and F. Martínez, "Ninguna nueva concesión para explotación minera, ratifica AMLO," La Jornada, 11 March 2021; **C-0342**, P. Villa y Cana and A. Morales, "AMLO intimida a juez por frenar ley eléctrica," El Universal, 13 March 2021, p. 1 (recording that the President accused a judge who granted injunctions against the government's energy reform of "actu[ar] como empleado subordinado de las empresas nacionales y extranjeras en matería energética . . . ." ("acting as a subordinate employee of national and foreign companies in energy matters . . . ." (counsel translation))); *see also* **C-0343**, A. Guthrie, "Mexican Lawyers Raise Voices to Defend Judicial Independence," Law.com International, 18 March 2021.

investment worthless. At most, a hypothetical granting of the MIA at some unknown point in the future could have an impact on damages, but attempting today to evaluate that impact would be speculative, if not impossible, and in any event could be addressed were it to happen.

183. Third, Mexico's internal legal system should have sufficient safeguards to prevent a situation of double recovery. As the *Chevron v. Ecuador* tribunal observed, "international law and decisions as well as domestic court procedures offer numerous mechanisms for preventing the possibility of double recovery."[452] On this point, the decision in *Lion v. Mexico* is instructive when stating: "[i]f in the future any Mexican criminal Court is to issue a decision in favour of Lion, and by that time Lion has collected any of the amounts awarded in its favour in the present arbitration, it is for the Mexican Court to adopt the appropriate measures to avoid double recovery."[453]

184. Finally, Odyssey represents to this Tribunal that it undertakes to prevent double recovery in this case. The *Chevron* tribunal explained that when a party gives an undertaking that it will not receive duplicative recovery for the same harm, "there is no danger of double recovery."[454] Other investment tribunals have considered this kind of statement as sufficient proof that there would be no double recovery.[455]

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452 **CL-0259**, *Chevron Corporation (USA) and Texaco Petroleum Company (USA) v. The Republic of Ecuador* (PCA Case No. 34877), Partial Award on the Merits, 30 March 2010, ¶ 557.

453 **CL-0260**, *Lion Mexico Consolidated L.P. v. United Mexican States* (ICSID Case No. ARB(AF)/15/2) Award, 20 September 2021, ¶ 798.

454 **CL-0259**, *Chevron Corporation (USA) and Texaco Petroleum Company (USA) v. The Republic of Ecuador* (PCA Case No. 34877), Partial Award on the Merits, 30 March 2010, ¶¶ 517, 557 (finding that "there is no danger of double recovery" where the claimants had undertaken to prevent such an outcome in the event that the tribunal rendered an award in favor of claimants for the full amount sought, and upon receiving full payment from the respondent).

455 *See also* **CL-0261**, *Venezuela Holdings, B.V., and others v. The Bolivarian Republic of Venezuela* (ICSID Case No. ARB/07/27) Award, 9 October 2014, ¶ 380 ("The Claimants have expressly stated that 'in the event of an award in this case in favor of the Claimants, the Claimants are willing to make the required reimbursement to PDVSA'. The Tribunal has no reason to doubt the Claimants' representation"); **CL-0262**, *CME Czech Republic B.V. v. The Czech Republic* (UNCITRAL) Final Award, 14 March 2003, ¶ 185 ("[T]here is no danger of any double recovery by the Claimant. Czech law prevents such an occurrence. Furthermore, the Clamant has expressly undertaken to prevent any such outcome"); **CL-0263**, *Burlington Resources Inc. v. Republic of Ecuador* (ICSID Case No. ARB/08/5) (formerly *Burlington Resources Inc. and others v. Republic of Ecuador and Empresa Estatal Petróleos del Ecuador* (*PetroEcuador*)) Decision on Counterclaims, 7 February 2017, ¶¶ 1084-1085 ("[P]rior to the end of the Hearing on counterclaims, counsel for Ecuador

185. Consequently, any risk of double recovery is speculative and theoretical, and can be managed if it materializes.

VI. CLAIMANT HAS PROVEN ITS CASE ON QUANTUM

A. Overview

186. Mexico's unlawful denial of the MIA for the Don Diego Project caused Odyssey substantial economic harm because of the truly extraordinary value of the Project. More specifically, because of (i) the size and quality of the explored phosphate resource at Don Diego; (ii) the relatively low cost of extracting, processing, and transporting that resource to market (compared to comparable terrestrial phosphate deposits); (iii) the global demand for phosphate due to its essential role in agricultural production; and (iv) the strategic value of the explored resource as well as the exploration potential of the unexplored areas of the Don Diego Deposit, the Don Diego Project had enormous economic value, which vanished as a result of Mexico's wrongful denial of the MIA.

187. Regarding the quantum of Odyssey's harm, the parties' arguments and evidence stand in stark contrast. On the one hand, Odyssey has presented two valuations using commonly accepted primary valuation methods. ***First***, Compass Lexecon values Don Diego using the DCF (discounted cash flow) method for Phase I and a variant of DCF, ROV (real options valuation), for Phase II (collectively, the "**Income Approach**"), arriving at a total value of [redacted].[456] As Compass Lexecon explains, "[t]he DCF is the main tool used by valuators and market participants because it allows for the use of tailored market-based assumptions that can best reflect the particularities of the asset under consideration."[457] ***Second***, Agrifos values Don Diego using the "**Comparable Transactions**" method, which assesses value based on the price paid in multiple transactions involving comparable

clearly stated that Ecuador does not seek double recovery in its claims . . . . The tribunal takes due notice of Ecuador's representations, which are in line with the general principle prohibiting double recovery.").

456 Compass Lexecon ER1, Sections IV-VII, pp. 23-59; Compass Lexecon ER2, ¶ 26, Table 1.

457 Compass Lexecon ER1, ¶ 8.

phosphate resource projects at a similar stage of development, arriving at a total value in the range of [redacted].[458]

188. The fact that these two valuations—which are performed independently by highly qualified and experienced valuation experts using different valuation approaches—arrive at similar results (*i.e.*, valuations differing by only around 20%) confirms that both valuations are reasonable, robust, and highly reliable.

189. In contrast, Mexico's case on quantum is a master class in obstruction and obfuscation. To begin with, Mexico argues that the valuation of Don Diego in the "**But For**" scenario should assume that the MIA was neither denied nor granted, based on a facile argument regarding the import of the valuation date and a mischaracterization of Mexico's violations of NAFTA. To comport with the full reparation principle under international law, however, the damages awarded to Odyssey must compensate for the denial of the MIA, and thus the But For scenario must assume that the MIA was granted. Mexico's argument has no basis in law or fact and should be rejected for the reasons explained below.

190. Second, Mexico fails to engage with the vast majority of the evidence Odyssey has presented regarding Don Diego's enormous value. Mexico does not present any valuation of its own using the Income Approach, the Comparable Transactions method, or in fact any valuation method that is considered suitable for primary valuation in the mining industry. Instead, Mexico relies primarily on a valuation from Dr. Flores at Quadrant Economics that attempts to infer the value of Don Diego from Odyssey's stock price (the "**Market Capitalization**" method), which values Don Diego at [redacted].

191. As a methodology, however, Market Capitalization is only suitable for use as a secondary valuation tool, and Quadrant's valuation suffers from numerous fatal defects, including Dr. Flores' tendentious and unsupported selection of the date for Odyssey's stock price, his failure to address confounding factors such the value of control,[459] the increase in

458 Agrifos ER, Sections C-E, pp. 16-36, and ¶ 21.

459 Compass Lexecon ER2, ¶¶ 110-119.

value that would have occurred had the MIA been approved,[460] the drag effect of Odyssey's legacy shipwreck business and associated financial distress,[461] and market distortion due to short-selling activity.[462] Because of these confounding factors, the Market Capitalization method is typically reserved for single-asset entities for which such issues are non-existent or minimal. Moreover, when Compass Lexecon corrects all of Dr. Flores' errors, its valuation under the Market Capitalization method is much closer to and corroborates its Income Valuation and Agrifos' Comparable Transactions valuation.

192. In addition to these legal and methodological defects, Mexico's case on quantum also should be rejected because its experts are simply not credible. As became clear at the hearing, and is summarized below, Mexico's mining experts at WGM have no real expertise on many of the issues on which they opined and did not thoroughly engage with Odyssey's expert evidence on the issues within their scope of expertise (*i.e.*, the quantity and quality of mineral resources). Moreover, perhaps because they were out of their depth, WGM made numerous errors in their reports, many of which were revealed embarrassingly on cross-examination.

193. Likewise, the evidence from Dr. Flores is difficult to take seriously because of his haphazard adoption of—followed swiftly by attempts to distance himself from—extreme and transparently absurd positions on key issues, such as the theory in his first report that Odyssey's market value was heavily influenced by the *Billion Dollar Wreck* TV series, and his manipulation of the risk premium in the discount rate based on a (misapplication of) a PhD student's teaching notes. In addition, Dr. Flores deliberately obscured key facts that are inconsistent with his opinions, such as the existence of an entire project stage between Exploration and Development in the CIMVAL and VALMIN standards (discussed below). Troublingly, when confronted with the numerous defects in their opinions, both WGM and Dr. Flores frequently dissembled, making it difficult to conclude that their errors were inadvertent. But regardless of whether WGM's and Quadrant's many errors

460 Compass Lexecon ER2, ¶¶ 120-125.
461 Compass Lexecon ER2, ¶¶ 126-149.
462 Compass Lexecon ER2, ¶¶ 150-153.

reflect incompetence, something more pernicious, or some mixture of both, their opinions are plainly not reliable, and should be rejected.

194. Finally, no doubt because it recognized it has no serious rebuttal to Odyssey's Income and Market Capitalization valuations on their merits, Mexico resorts to the extreme position that the Tribunal should reject those valuations entirely, and only award damages in the amount of Odyssey's historical costs incurred to explore the Don Diego resource (the "**Cost Approach**"). The sole basis for this argument is Mexico's mischaracterization that Don Diego was an "early exploration stage" project because it did not have a formal Pre-Feasibility Study ("**PFS**"), which according to Mexico means that the Income Approach is too speculative to establish the amount of Odyssey's losses with the requisite level of "reasonable certainty." There are numerous problems, however, with Mexico's argument:

a. *First*, the correct legal standard of compensation is the FMV of Don Diego, which is based on the price that a hypothetical buyer would pay in an arms' length transaction. The evidence in this case overwhelmingly demonstrates that a potential buyer of the Don Diego Project would value it using the Income Approach based on exactly the kind of technical and cost evidence that Odyssey has advanced to support its claim, notwithstanding that Odyssey had not yet prepared a formal PFS;

b. *Second*, Mexico's NAFTA breaches are the sole reason that Odyssey did not commission a formal PFS for Don Diego. Odyssey planned to commission a formal feasibility study after it obtained the MIA, which is a common practice in the mining industry.[463] Mexico's argument that the Tribunal should award less than full reparation because Don Diego did not have a formal PFS would allow Mexico to benefit from its own unlawful conduct and would create perverse incentives (*i.e.*, a "moral hazard") for States to take unlawful action regarding the permitting of projects like Don Diego, whose economic value is evident already at the permitting stage;

c. *Third*, even assuming that Mexico's argument had some merit as to the Income Valuation (which it does not), it still would be inapplicable to Agrifos' Comparable Transactions valuation, which is a variant of the "**Market Approach**" that both CIMVAL and VALMIN consider to be appropriate to value exploration stage properties. Indeed, even as Mexico and Dr. Flores tout Market Capitalization as

463 *See* Bryson WS1, ¶ 216.

an alternative Market Approach method, CIMVAL and VALMIN are clear that it is secondary to the Comparable Transactions method, which is considered a primary valuation method in the mining industry.

d. *Fourth*, Mexico did not properly submit any valuation using the Cost Approach because it first asserted that position in its Rejoinder. In any event, Mexico's own expert (Dr. Flores) acknowledges that Odyssey's sunk costs do not reflect the FMV of Don Diego, and in fact expressly rejected the Cost Approach as the appropriate method for determining for compensation in this matter.[464]

195. While there may be some cases in which the cost, production volume, and other inputs into a DCF model are simply too speculative to achieve "reasonable certainty," this is not one of them. Rather, in this case, all of the inputs into Compass Lexecon's DCF model are supported by evidence from world-class experts in their respective fields—including Mr. Lamb, Dr. Selby, Mining Plus, Dr. Sheehan, Mr. Gruber, and Dr. Heffernan. The evidence from these experts demonstrates that the information about Don Diego's future costs, production volume, and market was already at a PFS level of confidence on the Valuation Date. Mexico's failure to call any of these experts for cross-examination, together with its own experts' failure even to engage meaningfully with that evidence, is perhaps the best indication that Compass Lexecon's Income Valuation is reliable to a degree of reasonable certainty. One of the main advantages of the DCF method in an arbitration setting is that the confidence level of the valuation can be increased by scrutinizing the DCF inputs with the assistance of experts and, if appropriate, adopting more conservative inputs. Mexico's decision not even to attempt that exercise, and instead to rely almost completely on the superficial position that to use the Income Approach, a mining project needs a formal PFS report, strongly suggests that it has no credible answer to the quality of the inputs in the Compass Lexecon valuation.

196. In the sections that follow: **Section VI.B** discusses the full reparation principle in international law, and establishes why any assessment of Odyssey's losses must assume that Mexico granted the MIA in the But For scenario in order to compensate Odyssey fully for Mexico's illegal conduct; **Section VI.C** discusses the FMV standard, and demonstrates

[464] Quadrant ER1, ¶ 12 ("Sunk costs are not an indicator of the FMV of the Project, as value is a forward-looking concept that does not depend on how much was spent in the past.").

that the Income Approach should be the primary approach and the Comparable Transactions Method is superior to the Market Capitalization Method for the Market Approach; **Section VI.D** discusses the evidence adduced in this case regarding the Income Approach, including the technical evidence on the Mineral Resources, extraction and processing, and phosphate market price, and demonstrates that Compass Lexecon's DCF and ROV valuations are both reasonable and reliable; **Section VI.E** discusses the evidence adduced in this case regarding the Comparable Transactions valuation, demonstrating that the Agrifos valuation is reasonable and reliable; **Section VI.F** discusses the evidence adduced in this case regarding the Market Capitalization valuation, demonstrating that Quadrant's valuation is not reasonable or reliable, and that when corrected by Compass Lexecon, that method corroborates the Income and Comparable Transactions valuations; **Section VI.G** discusses why the Cost Approach should not be used at all; and Section **VI.H** discusses some final valuation issues, including the value of the Don Diego's exploration potential and strategic premium, the appropriate interest rate to apply to Odyssey's losses, the tax treatment of the award, and a summation of the different components of Claimant's quantum claim, which in total exceeds US$ 3.1 billion (gross of taxes) or US$ 2.4 billion (net of taxes).

B. In Accordance with Full Reparation, Any Assessment of Odyssey's Losses Must Assume That Mexico Granted the MIA in the But For Scenario

197. Applying the "full reparation" standard in international law, Odyssey's quantum claim is based on the FMV of the Don Diego Project on the day that SEMARNAT first denied the MIA (7 April 2016, the Valuation Date), assuming that SEMARNAT had instead granted the MIA.[465] Under the full reparation standard (derived from the venerable decision in *Chorzów Factory*), reparation must, "as far as possible, wipe out all the consequences of the illegal act and reestablish the situation which would, in all probability, have existed if that act had not been committed."[466] The full reparation standard is also reflected in the International Law Commission's Articles on State Responsibility for Internationally

[465] Claimant's Memorial, ¶ 373; Compass Lexecon ER1, ¶ 2.

[466] **CL-0029**, *Case concerning Rights of Minorities in the factory at Chorzow (Germany v. Poland)* (PCIJ) Judgment, 13 September 1928, p. 47.

Wrongful Acts, which obligate states "to make full reparation" for the injuries caused by their internationally wrongful acts.[467]

198. Although Mexico does not seriously dispute that the full reparation standard applies in this case,[468] it argues that any award of damages should only restore Odyssey to a position in which Mexico had neither denied nor granted the MIA. While not entirely clear, Mexico's position appears to rest on two grounds: (i) a technical legal argument that the Valuation Date must be the day before the denial of the MIA, and thus the But For scenario cannot assume that the MIA was granted; and (ii) a factual argument that Mexico's breach did not cause all of the claimed damages because Mexico's compliance with NAFTA would not have guaranteed that the Don Diego's MIA would have been granted. These arguments have no merit because Mexico incorrectly conflates the issue of valuation *date* with the assumptions that must be included in the But For scenario in order to wipe out the consequences of Mexico's NAFTA violations, and baldly mischaracterizes its violations of NAFTA in this case.

199. As an initial matter, Mexico's argument that NAFTA Article 1110 requires damages to be assessed as of the day before the breach occurred is baseless because that Article does not provide the standard of reparation applicable in this case. As Odyssey explained in its Reply, Article 1110 merely codifies the well understood rule that compensation should not be discounted by the fact that a State's wrongful acts may have depressed an investment's FMV before the breach crystallized.[469] It is also well-settled that Article 1110 does not supply the standard of compensation for *unlawful* expropriation or other

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467 **CL-0059**, ILC Draft Articles on State Responsibility with Commentaries, art. 31; *see generally* Claimant's Memorial, ¶¶ 364-370.

468 As Odyssey noted in Claimant's Reply, Respondent's Counter-Memorial accepted the applicability of the full reparation standard. *See* Claimant's Reply ¶ 322, *citing* Respondent's Counter-Memorial, ¶¶ 628-633. Although Mexico denies that it actually accepts the applicability of the full reparation standard (*see* Respondent's Rejoinder, ¶ 494) the fact remains that it raises no disagreement with that standard other than the issue of the Valuation Date discussed above. In any event, the law is very clear that the full reparation standard applies to Mexico's NAFTA violations in this case. *See* Claimant's Memorial, ¶¶ 360-372.

469 *See* Claimant's Reply, ¶ 342.

violations of NAFTA.[470] Rather, it sets out the conditions for *lawful* expropriation of investment.[471] NAFTA tribunals have consistently held that the correct standard for compensation for violations of NAFTA is the full reparation standard under customary international law,[472] and many tribunals have reached the same conclusion regarding the compensation due for breaches of similarly worded BITs.[473]

200. In any event, regardless of whether the valuation date should be April 6 or 7,[474] Mexico's argument is also flawed because it wrongly conflates the issue of valuation date with the assumptions that must be included in the But For scenario in order to satisfy the full reparation standard. In the now-ubiquitous exercise of calculating compensation based on the difference in value of a claimant's investment in the But For and Actual scenarios, the full reparation standard is implemented by assuming that the two scenarios are identical in every respect, *except* that in the But For scenario, the respondent's unlawful actions are assumed not to have occurred.

201. In some contexts, a valuation date immediately before the breach occurred is sufficient by itself to exclude the unlawful conduct from the But For scenario. For example, in cases involving outright expropriation on a particular date that was unforeseeable to the market before it occurred, the FMV of the investment immediately before the expropriation will naturally exclude the impact of the expropriation from the But For scenario. In other contexts, however, the valuation date alone is insufficient to exclude

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470 **CL-0103**, *S.D. Myers, Inc. v. Government of Canada* (UNCITRAL) Partial Award, 13 November 2000, ¶¶ 308-09; **CL-0010**, *Archer Daniels Midland Company and Tate & Lyle Ingredients Americas, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/04/5) Award, 21 November 2007, ¶ 275; **CL-0124**, *Windstream Energy LLC v. Government of Canada* (PCA Case No. 2013-22) Award, 27 September 2016, ¶ 473; **CL-0027**, *Cargill, Incorporated v. United Mexican States* (ICSID Case No. ARB(AF)/05/2) Award, 18 September 2009, ¶¶ 554, 556, 559.

471 *See* Claimant's Memorial, ¶ 361.

472 *See* Claimant's Memorial, ¶ 362, fn. 750.

473 *See* Claimant's Memorial, ¶ 363, fn. 751.

474 The fallacy in Mexico's argument is highlighted by the fact that there was no change in the FMV of the Don Diego Project between April 6 and 7, *other than the denial of the MIA*. This is not a case in which some extrinsic event (like a recession) affected the value of the investment between the parties' proposed valuation dates, and the Tribunal must thus decide which party should bear that risk. Rather, the only implication of the dispute over valuation date in this case is whether Mexico must compensate Odyssey for the denial of the MIA itself, and that question is answered by the full reparation principle.

the unlawful conduct from the But For scenario. For instance, if the market already anticipated the expropriation before it finally occurred, or the treaty breach involved multiple acts that spanned a period of time, a valuation date immediately before the breach became final will not by itself exclude the full impact of the unlawful conduct from the But For scenario.[475] In such cases, it remains necessary to define the But For scenario using assumptions that exclude the unlawful conduct (regardless of what valuation *date* is used), and Mexico's argument that the valuation date necessarily dictates the assumptions in the But For scenario is incompatible with the full reparation standard.

202. Mexico further argues that the But For scenario should assume that the MIA decision remains undetermined, rather than assuming that the MIA was granted, because compliance with NAFTA at most required some changes to the administrative process through which it assessed the MIA application rather than the actual issuance of the MIA.[476] Mexico's argument, however, is predicated on the false notion that Mexico's NAFTA breaches do not encompass SEMARNAT's ultimate denial of the MIA. As discussed in Section II.B, the evidence in this case is overwhelming that but for Secretary Pacchiano's unlawful intervention, SEMARNAT would have issued the MIA for the Don Diego Project.

203. Although Mexico has not identified what legal authority (if any) supports its position, any reliance on *Bilcon v. Canada* for this point is unwarranted because that case was in a very different posture, both factually and legally. There, the majority found that Canada breached NAFTA by evaluating the investor's environmental permit application under a standard that was not defined in law or notified to the investor, which denied the investor

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475 *See, e.g.*, **RL-0067**, *Amoco International Finance Corporation v. Iran* (Iran-US Claims Tribunal) Partial Award, 14 July 1987 ("[I]t has always been recognized that the effects of the prospect of expropriation on the market price of expropriated assets must be eliminated for the purpose of evaluating the compensation to be paid, since they are artificial and unrelated to the real value of such assets."). In fact, NAFTA Article 1110(2) provides that compensation for lawful expropriation "shall not reflect any change in value occurring because the intended expropriation had become known earlier." **CL-0081**, NAFTA, art. 1110(2). This is a clear recognition, even in the context of a lawful expropriation, that the amount of compensation cannot be calculated in a way that is reduced by the expropriative conduct itself.

476 Hrg. Day 1 Tr., Respondent's Opening Presentation, 24 January 2022, pp. 154:17-156:7, 165:16-166:10 (Spanish Tr.), pp. 136:3-137:5, 145:1-13 (English Tr.).

"a fair opportunity to know the case it had to meet."[477] Furthermore, that tribunal found that the investor failed to prove that it would have received an environmental permit if Canada had complied with requirements of procedural fairness.[478] Because its liability finding was based on the defective process that Canada had applied in the environmental review procedure, rather than a finding that Canada would have issued the environmental permit if it had complied with its legal obligations, when it came to assess compensation, the *Bilcon* majority did not assume the issuance of an environmental permit in its But For scenario.[479]

204. The facts in this case are entirely different. As discussed above in Section II.B, the evidence in this case demonstrates convincingly that the DGIRA already had concluded that the MIA should be approved (and accordingly was in the process of drafting the approval decision), and the only reason for the denial was due to Secretary Pacchiano's improper, arbitrary, and politically-motivated interference with the normal decision-making process. Moreover, the evidence in this case—including the expert reports of Federico Kunz, a Mexican mining law expert with more than 45 years' experience in the mining industry, whom Mexico elected not to call for cross-examination—demonstrates that the MIA was the final gating permit for the Don Diego Project, and that the few additional permits necessary to commence operations were relatively ministerial and would have followed inexorably from the issuance of the MIA as a matter of Mexican law.[480] Because the evidence demonstrates that SEMARNAT would have issued the MIA but for Secretary Pacchiano's unlawful interference, the Tribunal must assume that the

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477 **CL-0122**, *William Ralph Clayton, William Richard Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 590.

478 **CL-0123**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware v. Government of Canada* (PCA Case No. 2009-04) Award on Damages, 10 January 2019, ¶ 276.

479 **CL-0123**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware v. Government of Canada* (PCA Case No. 2009-04) Award on Damages, 10 January 2019, ¶ 276.

480 *See* Kunz ER1, ¶¶ 9-10; Kunz ER2, ¶¶ 16-33. This fact alone also distinguishes this case from *Bear Creek v. Peru*, where the tribunal found that independent of Peru's breach of the applicable treaty, the project "had not received many of the government approvals and environmental permits it needed to proceed," and there was "little prospect" that it would. *See* **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, ¶ 600; *see also* Claimant's Reply, ¶¶ 352-353.

Don Diego Project received the MIA in the But For scenario in order to meet the full reparation standard under international law.

C. Don Diego Should Be Valued Primarily Using the Income Approach or Comparable Transactions Method

1. The Applicable Standard of Compensation Is the FMV of Don Diego, and Mexico's Arguments Premised on "Reasonable Certainty" Incorrectly Undermine the FMV Standard

205. Apart from Mexico's baseless argument that Don Diego's FMV in the But For scenario should not assume that the Project has received the MIA authorization, Mexico does not dispute that the applicable standard of compensation in this case is the FMV of Don Diego But For Mexico's breaches of NAFTA.[481] Furthermore, Mexico also does not contest that FMV means "el precio que un comprador dispuesto pagaría a un vendedor dispuesto en circunstancias en las que cada uno tenía información fidedigna, cuando cada uno deseaba maximizar su ganancia financiera, y ninguno estaba bajo coacción o amenaza."[482]

206. This is a question of fact, not a question of law. Consequently, the Tribunal must answer this question based on the record evidence concerning how a willing buyer in a hypothetical FMV transaction would value the Don Diego Project, including how such a buyer would address uncertainty arising from the Project's development stage. As discussed further below, because the evidence in this case demonstrates that actual market participants would have valued Don Diego primarily using an Income Approach on the date of valuation and would have addressed any uncertainty arising from the Project's development stage through the cash flow and discount rate assumptions in that Income Valuation, the Tribunal likewise should apply the Income Approach to value the Don Diego Project here.

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481 Respondent's Counter-Memorial, ¶¶ 631-632; *see also* Claimant's Memorial, ¶¶ 373-376.

482 Respondent's Counter-Memorial, ¶¶ 631-632 ("the price that a willing buyer would pay to a willing seller in circumstances in which each had good information, each desired to maximize his financial gain, and neither was under duress or threat") (accepting the definition of FMV advanced by Claimant, apart from its incorrect reservation based on the alleged implications of the Valuation Date).

207. Mexico's arguments regarding the "reasonable certainty" principle do not change this conclusion. Odyssey does not dispute that the Tribunal should only award damages that are established to a degree of reasonable certainty, but it does not follow that the Tribunal should therefore discard the Income Approach. Rather, when applying the FMV standard that both parties agree is controlling, the Tribunal must address questions of uncertainty in the manner that actual buyers in the market would. While the Tribunal of course can take notice of how tribunals in other cases have approached these issues, it should not confuse any factual conclusions with principles of law that dictate what valuation approach should be applied. In addition, the Tribunal should be critically aware of differences in the factual context in such cases (such as the industry involved and the time period in relation to market participants' growing acceptance of addressing valuation uncertainty using the Income Approach).[483]

208. Moreover, Mexico's argument would create a perverse incentive for States to take unlawful actions so long as they do so early enough, after the value of a project has become apparent to market participants (including States) but before it has passed some arbitrary threshold of exploration or is operationality deemed sufficient to apply the Income Approach. In particular, Mexico's suggestion that the Tribunal should resolve development stage uncertainty by using the Cost Approach would create a systematic incentive for unlawful State conduct as soon as it becomes clear that the prospective value of a project significantly exceeds its historical investment costs. Because rational investors typically will only undertake an expensive permitting process for those projects that have significant future value, a rule that projects still in the permitting phase must be valued based on sunk costs rather than future income would incentivize States to deny permits unlawfully in order to reassign valuable projects to politically favored investors or to exploit such projects themselves.

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483 *See* Claimant's Reply, ¶¶ 347-353 (discussing crucial differences between valuing a start-up in an uncertain industry versus a project in an extractive industry, and distinguishing extractive industry cases such as *S.A. Silver v. Bolivia and Bear Creek v. Peru* based on the specific facts of those cases).

209. This is precisely why the Tribunal must be guided by how actual market participants value projects and assess uncertainty, rather than applying rigid (and outdated) principles or "rules of thumb" that are inconsistent with actual market practice. As discussed in the sections that follow, the evidence is clear that actual market participants would value Don Diego primarily using the Income Approach and/or the Comparable Transactions Method, would not use the Market Capitalization Method as a primary method (and would only use it as a secondary method with sufficient adjustments appropriate to address the method's significant weaknesses), and would not use the Cost Approach at all.

210. Before turning to that evidence, however, it is important to recognize that while all of these valuation approaches involve some uncertainty, the Market Capitalization Method actually introduces *more* uncertainty than the DCF or Comparable Transactions Methods, especially in a dispute context. That heightened uncertainty arises from the fact that the Market Capitalization method does not directly value the actual asset in dispute (*i.e.*, a controlling stake in Don Diego *in the But For scenario*). Rather, it values publicly-traded non-controlling shares in Don Diego *and* the shipwreck business in the *Actual scenario*, and thus adjustments must be made (i) to disaggregate Don Diego from Odyssey's shipwreck business, (ii) to account for the very issue in dispute (*i.e.*, the additional value from obtaining the MIA), and (iii) to account for the value of control, which is not reflected in the share prices of publicly-traded companies. Those adjustments must be assessed *using some other valuation method* (*e.g.*, based on the permit bump and control premium observed in comparable transactions). In contrast, the Comparable Transactions and DCF Methods both address these issues directly: the DCF uses cash flow projections and a discount rate that are specific to the Don Diego Project in the But For scenario, and the Comparable Transactions Method uses comparators that are controlling stakes in similar projects facing no significant permit hurdles.

211. In short, it is simply a myth that the Market Capitalization Method involves less uncertainty than the DCF Method because it derives the value from independent market evidence. The adjustments that must be made to infer the value of Don Diego in the But For scenario from Odyssey's stock price also introduce uncertainty. Moreover, that

uncertainty is highly opaque and difficult to resolve reliably because there is not a lot of transparent evidence regarding the necessary adjustment factors (*e.g.*, the appropriate permit bump to apply in this situation). All of these factors no doubt inform why CIMVAL only considers Market Capitalization to be a secondary valuation method.

212. In contrast, the main source of uncertainty in a DCF (*i.e.*, the potential for inaccuracy or bias of the valuator) can be addressed reliably through the adversarial process. Mexico, however, has not seriously challenged any of the inputs into Compass Lexecon's DCF model (other than the discount rate, which is discussed in Section VI.D.6 below), to the point that it did not even call Odyssey's experts on resource volume and characteristics, CAPEX, OPEX, technical feasibility, production rates, product quality, and market/pricing for cross-examination. Having elected not even to confront Odyssey's evidence on the issues that could give rise to uncertainty in the DCF valuation, the Tribunal should conclude that the inputs into the DCF model are reasonable and reliable and reject Mexico's argument that the DCF valuation should be disregarded entirely in favor of a Market Capitalization valuation that involves even more uncertainty.

213. Finally, the fact that Income and Market valuations all entail some uncertainty is not a valid reason for the Tribunal not to award damages, or to award damages using an inappropriate valuation method (such as the Cost Approach, discussed further in Section VI.G). It is well-settled in international law that "the fact that damages cannot be assessed with certainty is no reason not to award damages when a loss has been incurred."[484] Rather, the quantum of damages must be established with "reasonable certainty."[485] As discussed in the sections that follow, Odyssey has established its damages claim with reasonable certainty because its valuation methods are the very methods that actual market participants would use to value a project like Don Diego at its stage of

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484 **CL-0187**, *Southern Pacific Properties (Middle East) Limited v. Arab Republic of Egypt* (ICSID Case No. ARB/84/3) Award on the Merits, 20 May 1992, ¶ 215; *see also* **CL-0037**, *Compañia de Aguas del Aconquija S.A. and Vivendi Universal S.A. v. Argentine Republic* (ICSID Case No. ARB/97/3) Award, 20 August 2007, ¶ 8.3.16; **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September 2014, ¶ 829-832.

485 **CL-0054**, *Gemplus, et al. v. United Mexican States* (ICSID Case Nos. ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, ¶¶ 13-91.

development, and its valuations are supported by robust evidence (much of which Mexico has not contested).

2. CIMVAL Standards and VALMIN Code Support the Income Approach for the Don Diego Project

a. DCF, ROV, and Comparable Transactions Are Primary Valuation Methods, While Market Capitalization Is at Most a Secondary Valuation Method

214. As discussed above, the applicable compensation standard is FMV, which means "el precio que un comprador dispuesto pagaría a un vendedor dispuesto en circunstancias en las que cada uno tenía información fidedigna, cuando cada uno deseaba maximizar su ganancia financiera, y ninguno estaba bajo coacción o amenaza."[486] This is a question of fact, and the valuation approach and methods that the Tribunal should apply to answer this question depend inexorably on which valuation approach and methods a willing buyer in the market would employ to determine the price it is willing to pay.

215. The logical starting point for assessing this issue are the valuation standards and guidelines published by CIMVAL[487] and VALMIN.[488] Among other things, CIMVAL and VALMIN exhaustively discuss the different approaches and methods that can be used to value mineral properties and make recommendations regarding when and how to apply the different approaches and methods based on a project's stage of development. It is undisputed that the CIMVAL and VALMIN valuation principles are used widely all over the world to value mineral properties, and both parties' experts refer to them extensively. In fact, Mexico's valuation expert, Dr. Flores, agreed on cross-examination that a "hypothetical buyer in a fair-market-value analysis would consider industry guidelines such as CIMVal and VALMIN," and thus that those industry norms "provide useful

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486 Respondent's Counter-Memorial, ¶¶ 631-632 ("the price that a willing buyer would pay to a willing seller in circumstances in which each had good information, each desired to maximize his financial gain, and neither was under duress or threat").

487 **C-0196**, CIMVAL Standards 2003.

488 **C-0195**, VALMIN Code 2015.

guidance about how a prudent buyer out in the real world in the market would approach the valuation of an asset like Don Diego."[489]

216. The CIMVAL Standards and Guidelines explain that "[s]ome methods can be considered to be primary methods for Valuation while others are secondary methods or rules of thumb considered suitable only to check Valuations by primary methods."[490] Regarding the methods at issue in this case, CIMVAL categorizes the DCF, ROV, and Comparable Transactions as primary methods for the valuation of mineral properties, but categorizes Market Capitalization as merely a secondary method:[491]

Valuation Approach	Valuation Method	Method Ranking	Comments
Income	Discounted Cash Flow (DCF)	Primary	Very widely used. Generally accepted in Canada as the preferred method.
Income	Monte Carlo Analysis	Primary	Less widely used, but gaining in acceptance
Income	Option Pricing	Primary	Not widely used and not widely understood but gaining in acceptance
Income	Probabilistic Methods		Not widely used, not much accepted
Market	Comparable Transactions	Primary	Widely used with variations
Market	Option Agreement Terms	Primary	Widely used but option aspect commonly not discounted, as it should be
Market	Gross "in situ" Metal Value		Not acceptable
Market	Net Metal Value or Value per unit of metal	Secondary	Widely used rule of thumb
Market	Value per Unit Area	Secondary	Used for large Exploration Properties
Market	Market Capitalization	Secondary	More applicable to Valuation of single property asset junior companies than to properties
Cost	Appraised Value	Primary	Widely used but not accepted by all regulators
Cost	Multiple of Exploration Expenditure	Primary	Similar to the Appraised Value Method but includes a multiplier factor. More commonly used in Australia
Cost	Geoscience Factor	Secondary	Not widely used

489 Transcript of Day 6 of Hearing ("**Hrg. Day 6 Tr**."), Testimony of Quadrant, 29 January 2022, pp. 1514:19-1515:17.

490 **C-0196**, CIMVAL Standards 2003, G3.4, p. 22.

491 **C-0196**, CIMVAL Standards 2003, pp. 22-23.

217. Moreover, in its comments, CIMVAL characterizes the DCF Method as "very widely used" and the "preferred method,"[492] and while noting that ROV is not widely used or understood, it observes that ROV is "gaining in acceptance" (already in 2003), and also characterizes it as a primary valuation method.

218. On the other hand, when categorizing the Market Capitalization method as secondary, CIMVAL explicitly explains that it is "[m]ore applicable to Valuation of single property asset junior companies."[493] This explanation for the limited usefulness of the Market Capitalization method is a clear acknowledgement of the difficulties that arise in inferring the value of a property (like Don Diego) from the stock price of a company that has multiple properties or businesses, and Dr. Flores acknowledged that his Market Capitalization valuation had to include adjustments to address this very issue (*i.e.*, to disaggregate the value of Don Diego from the value of Odyssey's legacy shipwreck business).[494] Additionally, as discussed below in Section VI.F, the need to infer an appropriate "permit bump" in order to provide full reparation for Mexico's unlawful conduct is a similar confounding factor that makes the Market Capitalization method even less suitable.

b. The DCF Method Is Appropriate to Value Don Diego Phase I Because It Was at the Development Stage

219. As Odyssey explained in its Memorial, the DCF method is appropriate to value Phase I of the Don Diego Project because the information and data about the Project's Mineral Resource volume, production plan, costs, and market were developed to a PFS level of confidence on the Valuation Date, and thus the Project is fairly characterized as a Development stage project for which CIMVAL and VALMIN both recommend the Income Approach as an appropriate valuation method.[495] Mexico argues that the Tribunal should reject the DCF method entirely (even as a secondary method), and only use the Market Capitalization method. Mexico bases this argument exclusively on the proposition that

492 **C-0196**, CIMVAL Standards 2003, pp. 22-23.
493 **C-0196**, CIMVAL Standards 2003, pp. 22-23.
494 *See* Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, p. 1559:1-6.
495 *See* Claimant's Memorial, ¶¶ 382-398.

CIMVAL and VALMIN require the completion of a formal PFS to use the Income Approach,[496] which is an egregious mischaracterization of those guidelines.

220. CIMVAL and VALMIN both recognize that the Income Approach is appropriate for the valuation of "Development" stage projects (and even in some cases for the valuation of projects that have not reached the Development stage, as discussed in the next section):[497]

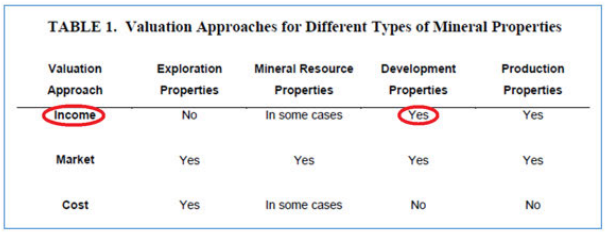
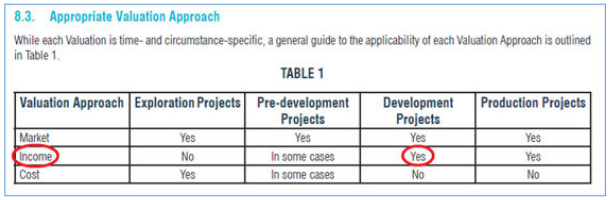


TABLE 1. Valuation Approaches for Different Types of Mineral Properties

Valuation Approach	Exploration Properties	Mineral Resource Properties	Development Properties	Production Properties
Income	No	In some cases	Yes	Yes
Market	Yes	Yes	Yes	Yes
Cost	Yes	In some cases	No	No



8.3. Appropriate Valuation Approach

While each Valuation is time- and circumstance-specific, a general guide to the applicability of each Valuation Approach is outlined in Table 1.

TABLE 1

Valuation Approach	Exploration Projects	Pre-development Projects	Development Projects	Production Projects
Market	Yes	Yes	Yes	Yes
Income	No	In some cases	Yes	Yes
Cost	Yes	In some cases	No	No

221. CIMVAL defines the Development stage to mean a 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."[498] Similarly, VALMIN defines the Development stage to mean a project that is "not yet commissioned or operating at design levels," but for which "[e]conomic viability . . . will be proven by at least a Pre-Feasibility Study."[499]

222. As an initial matter, these provisions from CIMVAL and VALMIN definitively refute Mexico's and Dr. Flores' central argument that the Income Approach cannot be used to value Don Diego because the Project had not yet commenced commercial operation.[500] CIMVAL and VALMIN are clear that a project need not be "under construction" or "commissioned" (respectively) in order to be a Development stage project for which the Income Approach is appropriate. While a lengthy operating history may be a sensible

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496 *See* Hrg. Day 1 Tr., Respondent's Opening Presentation, 24 January 2022, pp. 156:21-157:19, 175:1-7 (Spanish Tr.), pp. 137:20-138:10, 152:16-20 (English Tr.).

497 **C-0196**, CIMVAL Standards 2003, Table 1; **C-0195**, VALMIN Code 2015, § 8.3.

498 **C-0196**, CIMVAL Standards 2003, S1.0, p. 8.

499 **CLEX-0028**, The VALMIN Code, 2015 Edition, Effective January 30, 2016, p. 39 (emphasis added).

500 *See* Claimant's Reply, ¶¶ 346-347.

prerequisite to Income valuation in some other contexts (*e.g.*, for an entirely new or unique product where costs and/or demand are completely unpredictable), CIMVAL and VALMIN recognize that mining projects can be reliably valued using the Income Approach at an early stage in their life cycle (and prior to commencing operations) because minerals like phosphate are a well-understood commodity and mining costs using well-understood methods (like dredging) can be projected reliably based on decades of experience.[501]

223. Furthermore, the evidence from Claimant's independent experts in this case demonstrates conclusively that the Don Diego Project was at a PFS stage of development when Mexico unlawfully denied Odyssey's MIA. As discussed further in Sections VI.D.1-3 below, Odyssey submitted independent analysis of all of the technical and cost inputs into the Compass Lexecon DCF model, including the quantity and quality of Don Diego's Mineral Resources, the technical feasibility of the production plan, and the CAPEX and OPEX of all aspects of the Project. Those experts are all global leaders in their respective fields, and they all concluded that the information available on the Valuation Date was at a PFS level of confidence.[502] Moreover, these independent experts based their conclusions on evidence that already existed on the Valuation Date.

224. Mexico, however, chose not to cross examine any of these experts. Considered alongside the fact that Mexico did not present its own expert evidence on most of these issues, as well as the fact that its experts at WGM and Quadrant largely ignored Odyssey's expert evidence on these points, the Tribunal would be well-justified to infer that Mexico has no substantive answer to the unanimous conclusion of Odyssey's experts that Don Diego was at a PFS level of development.

225. Rather, Mexico bases its argument that Don Diego was not a Development stage project solely on the fact that Odyssey had not yet commissioned the preparation of a formal

501 *See* Claimant's Reply, ¶¶ 346-347.

502 Selby ER1, ¶ 85; Selby ER1, Annex 3; ADBP ER, pp. 1, 4-6; Gruber ER1, p. 1; Lomond & Hill ER1, pp. 4-5 and ¶¶ 5.2.1-5.2.2; MP Geostatistics ER, p. 50.

report titled "Pre-Feasibility Study."[503] However, nothing in CIMVAL or VALMIN imposes any such requirement. For instance, CIMVAL defines a PFS as follows:[504]

> **Prefeasibility Study and Preliminary Feasibility Study mean a comprehensive study** of the viability of a mineral project that has advanced to a stage where the **mining method**, in the case of underground mining, or the pit configuration, in the case of an open pit, has been established, and which, if an **effective method of mineral processing** has been determined, includes a **financial analysis based on reasonable assumptions of technical, engineering, operating, economic factors** and the assessment of other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be classified as a Mineral Reserve (adapted from NI 43-101, Section 1.2 Definitions). A Prefeasibility Study is at a lower confidence level than a Feasibility Study.

226. The VALMIN definition is materially identical.[505] Notably, these definitions do not impose any requirement that the results of the study be compiled in a formal report, much less that such a report follow a particular format or be certified and filed in a particular way. In contrast, CIMVAL defines the term "Technical Report" (*e.g.*, the Lamb Report[506]) to mean "a report prepared, filed and certified in accordance with NI 43-101 and Form 43-101F1 Technical Report (NI 43-101, Section 1.2 Definitions)."[507] This contrast in definitions makes clear that the essential requirement for a PFS is a comprehensive study of the mining, processing, and financial issues "**sufficient for**" a Qualified Person to make reserve classifications, rather than a formal report prepared by a Qualified Person.[508] This is precisely the point made by Mining Plus in its review of the materials and data in existence as of the Valuation Date where it noted that "[t]he quality of geological understanding and P_2O_5 grade continuity at the Don Diego deposit" is appropriate "**to**

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503 *See*, e.g., Hrg. Day 1 Tr., Respondent's Opening Presentation, 24 January 2022, p. 157:10-19 (Spanish Tr.), p. 138:5-10 (English Tr.).

504 **C-0196**, CIMVAL Standards 2003, S1.0, p. 10 (emphasis added).

505 **C-0195**, VALMIN Code 2015, § 15, p. 42.

506 *See* **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014.

507 **C-0196**, CIMVAL Standards 2003, S1.0, p. 12. A similar contrast exists between the VALMIN definition of PFS (*see* **C-0195**, VALMIN Code 2015, p. 42), and VALMIN's discussion of the contents of a Public Report (*see* **C-0195**, VALMIN Code 2015, pp. 15-16).

508 **C-0196**, CIMVAL Standards 2003, S1.0, p. 10 (emphasis added).

sufficiently support reserve conversion in a Pre-Feasibility Study (PFS), as defined in the CIM guidelines."[509] This understanding of the term PFS is also consistent with the fact that CIMVAL and VALMIN contemplate use of the Income Approach to value properties for which no classification of Mineral *Reserves* has yet been made.[510]

227. Furthermore, Mexico's formalistic argument also fails because the FMV standard focuses on what a hypothetical willing buyer would have paid for Don Diego on the Valuation Date, and a hypothetical buyer would base its valuation on its own due diligence rather than any report prepared by the seller (entitled PFS or otherwise). For example, the International Valuation Standards cited by Dr. Flores state that FMV "presumes that both the willing buyer and the willing seller are reasonably informed about the nature and characteristics of the asset, its actual and potential uses, and the state of the market as of the valuation date."[511] Moreover, Dr. Flores confirmed during cross-examination that in a FMV analysis, the hypothetical buyer is presumed to consider "all of the information that is reasonably available as of the Valuation Date" and to "make its own independent assessment of that information."[512] In fact, Dr. Flores himself cited a document prepared by AMC Consultants as evidence of what market participants in the mining industry consider in standard valuation practice, which states that *"[a] pre-feasibility study may also be prepared in full or in part by potential purchasers as part of the due diligence process.*"[513]

228. Indeed, Mexico's mining experts at WGM—who, unlike Dr. Flores, actually advise market participants in real world transactions in mineral properties—acknowledged that the Income Approach is both appropriate and preferred, even absent a PFS:[514]

> Q. And if possible, you conduct an Income Approach valuation because that's the preferred method of valuing mineral properties if key information such as mineral-resource estimates, operating

509 MP Geostatistics ER, p.11 (emphasis added).

510 *See* Claimant's Memorial, ¶¶ 373-376.

511 **QE-0090**, International Valuation Standards Council, "International Valuation Standards – Effective 31 January 2020," 2019, p. 19.

512 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, p. 1514:9-18.

513 *See* **QE-0072**, AMC Consultants website, "Feasibility Studies for Mining Projects," p. 2 (second bullet point).

514 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1197:2-16; *see also* Claimant's Reply, ¶¶ 367-71.

> and Capital Cost estimates, and revenue assumptions is available; right?
>
> A. (Mr. Hinzer) In some circumstances we do. We look at all of the information that's provided. And if we believe that the information provided has too high a risk factor, we will not use a DCF.
>
> Q. And, surely when providing due diligence services for clients in buy or sell transactions, you've used the income or DCF Valuation Method even when a Pre-Feasibility Study does not exist; right?
>
> A. (Mr. Hinzer) That is correct.

229. As discussed below, this admission by WGM corresponds with the unanimous view of other experts in this arbitration, from major phosphate industry participants like Agrifos to experienced mining, processing and offshore project engineers like Lomond & Hill, who confirm that market participants routinely use Income valuations like a DCF to estimate the value of projects even at early stages.[515] Based on all of this evidence, it is clear that Phase I of the Don Diego Project should be considered a Development stage project for the purpose of a FMV analysis because the available evidence was sufficient for a hypothetical buyer to prepare its own PFS and/or value the project using the Income Approach, regardless of the fact that Odyssey had not yet commissioned preparation of a formal PFS itself.

c. The Income Approach Is Appropriate to Value the Don Diego Project Because It Was at a Minimum a Pre-Development Project

230. In the alternative, even if Don Diego Phase I were not a Development stage property at the date of valuation because it did not have a formal PFS, it nevertheless "would have to be characterized as in the pre-development stage (equivalent to 'Mineral Resource Property' as per CIMVAL definitions) and not as an exploration one (as wrongly claimed by Dr. Flores) according to VALMIN and CIMVAL definitions."[516] Additionally, Don Diego Phase II also was in the pre-development stage on the Valuation Date.[517] Both CIMVAL

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515 *See infra*, ¶ 248.

516 Compass Lexecon ER2, ¶ 44.

517 Compass Lexecon ER1, ¶ 60.

and VALMIN expressly contemplate use of the Income Approach to value projects in the stage immediately prior to the Development stage (*i.e.*, a "Mineral Resource Property" or "Pre-development Project" in the CIMVAL and VALMIN nomenclature, respectively).

231. CIMVAL defines "Mineral Resource Property" to mean "a Mineral Property which contains a Mineral Resource that has not been demonstrated to be economically viable by a Feasibility Study or Prefeasibility Study," and clarifies that the category includes "advanced exploration properties [and] projects with Prefeasibility or Feasibility Studies in progress."[518] VALMIN defines "Pre-development Project" to mean "holdings where Mineral Resources have been identified and their extent estimated (possibly incompletely), but where a decision to proceed with development has not been made," and clarifies that the category includes "[p]roperties at the early assessment stage."[519]

232. There is no serious dispute that Don Diego contains Mineral Resources.[520] Mr. Lamb estimated Measured, Indicated, and Inferred Resources in an NI 43-101 Technical Report in June 2014,[521] and then concluded in May 2015 that a portion of the Resources was so highly concentrated that a commercial phosphate rock product could be produced with particle sizing alone.[522] Furthermore, while not necessary to conclude that Don Diego contained Mineral Resources and was a Mineral Resource/Pre-development Project, both Dr. Selby and Mining Plus subsequently validated Mr. Lamb's Mineral Resource estimates to a PFS level of confidence, and described Mr. Lamb's conclusions as conservative.[523]

233. Mexico's mining experts at WGM do not credibly dispute the fact that Don Diego contained Mineral Resources. Odyssey's Reply has already detailed the many reasons why WGM's assertion in its expert reports that Mr. Lamb's classification of Mineral

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518 **C-0196**, CIMVAL Standards 2003, S1.0, p. 10.

519 **C-0195**, VALMIN Code 2015, § 14, p. 38.

520 CIMVAL defines "mineral resources" by cross-reference to the definitions adopted (and periodically amended) by CIM, which are "included by reference in NI 43-101." **C-0196**, CIMVAL Standards 2003, S1.0, p. 10.

521 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014.

522 **C-0112**, H. Lamb Report, "Technical Memo: Preliminary Assessment of the Potential to Produce a Sized Phosphate Rock Product," 14 May 2015.

523 Selby ER1, ¶¶ 58, 78, 84-85; MP Geostatistics ER, pp. 6, 50; MP HGR ER, pp. 4-9.

Resources was "questionable"[524] is facially defective.[525] And at the hearing, WGM proved incapable of maintaining the fiction that Don Diego contained no Mineral Resources at all. On cross-examination, when asked whether WGM disputed Mr. Lamb's estimation of Mineral Resources, Mr. Hinzer answered only that WGM disagreed with Mr. Lamb's use of the word "ore," and did not otherwise articulate any issue with Mr. Lamb's conclusion that Don Diego contained Mineral Resources.[526] Similarly, when questioned about Dr. Selby's validation of Mr. Lamb's Mineral Resource estimate, Mr. Hinzer again only took issue with Dr. Selby's use of the term "ore," but did not identify other disagreements with Dr. Selby's conclusions regarding Don Diego's Mineral Resources.[527] Then, when pressed on the issue again, Mr. Hinzer acknowledged that the main (if not sole) basis for WGM's disagreement that Don Diego contained Mineral Resources was the fact that Odyssey did not publicly file Mr. Lamb's Technical Report:[528]

> The definitions and guidelines that WGM adhered to in this process was that, in order for a Mineral Resource to be identified for the purposes of a valuation in the public markets, a Technical Report defining those Mineral Resources had to be published and put in on--as a public document, and no such document was ever filed publicly by the issuer.

234. As Mr. Hinzer also had to admit, however, Don Diego is not located in Canada, and Mr. Lamb's Technical Report and the other information prepared in the course of Odyssey's technical and financial assessment of Don Diego were not prepared for purposes of a public securities disclosure in Canada.[529] The fact that Odyssey did not *publicly file* the Technical Report and related documents, because it was not a Canadian public company,

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524 *See* WGM ER1, ¶ 51.

525 *See, e.g.*, Claimant's Reply, ¶¶ 358-488.

526 See Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1168:10-1169:7. As Mr. Hinzer confirmed, he disagreed with Mr. Lamb's use of the word "ore" based on the rules of the Canadian Securities Commission that require a Feasibility Study in order to use that term in public disclosure documents. Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1168:10-1169:7. *No* issue of public disclosure is present in this case, and in any event, Mr. Lamb's use of the term "ore" does not invalidate his estimation of Mineral Resources. *See* Selby ER2, ¶¶ 91-93.

527 *See* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1170:9-1171:12.

528 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1203:7-14.

529 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1203:15-1204:2.

provides no basis whatsoever for disregarding the conclusion in those documents that Don Diego contained Mineral Resources.

235. In any event, WGM also confirmed that it did not independently assess whether Don Diego contained Mineral Resources, conduct an independent geostatistical analysis, or contest the conclusions of Mining Plus.[530] WGM acknowledged that it had the data necessary to carry out such analysis, but it did not. In other words, rather than raise any response to the substance of Mr. Lamb's, Dr. Selby's, and Mining Plus' evidence regarding the existence, quantity, and quality of Mineral Resources at Don Diego, WGM primarily took issue with vocabulary choices and inapplicable filing requirements in order to sidestep the inconvenient fact that Don Diego had Mineral Resources, which both CIMVAL and VALMIN consider appropriate to value using the Income Approach, and which WGM itself would value using the Income Approach in its advisory practice.

236. For his part, Dr. Flores took even greater pains to obfuscate the fact that CIMVAL and VALMIN contemplate using the Income Approach before a project reaches the Development stage. In his reports, Dr. Flores affirmatively relied on the CIMVAL and VALMIN standards to argue that the Income Approach should not be used because Don Diego was an "exploration stage" project.[531] The sole basis for his conclusion, however, was the fact that Don Diego was not a *Development stage* project because it did not have a PFS:[532]

> The Project did not have a pre-feasibility study, let alone a more advanced feasibility study. A feasibility study is vital as it outlines the development plan, processing methods, and confirms whether the project is economically viable. **According to mining guidelines, a pre-feasibility or feasibility study is also a necessary condition to classify a mining project as a "Development Project." . . . Don Diego was therefore an exploration stage project**, meaning that

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530 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1173:16-1174:1, 1174:22-1176:2, 1188:13-17. Additionally, Dr. Selby discusses the lack of rigor in WGM's analysis of Don Diego's Mineral Resources in his second report. *See* Selby ER2, ¶¶ 21-93.

531 Quadrant ER1, ¶¶ 12, 155-175.

532 Quadrant ER1, ¶¶ 25-26 (emphasis added); Second Expert Report of Quadrant Economics, dated 19 October 2021 ("**Quadrant ER2**"), ¶¶ 42-49.

> the property had "been acquired, or is being explored . . . but for which economic viability has not been demonstrated."

237. There is a fundamental and obvious problem, however, with Dr. Flores' conclusion: CIMVAL and VALMIN both define an entire category ***between*** the Exploration and Development stages—namely, the Mineral Resource/Pre-development stage—***which Dr. Flores completely ignores***. Neither CIMVAL nor VALMIN requires an economic feasibility finding to classify a project in this category; to the contrary, CIMVAL's definition of Mineral Resource Property explicitly includes properties that have "not been demonstrated to be economically viable by a Feasibility Study or Prefeasibility Study."[533]

238. On cross-examination, Dr. Flores admitted that he ignored the Mineral Resource category in his reports.[534] As he did many times, however, Dr. Flores then dissembled, asserting:[535]

> I did focus on the Development Property because that's the one that Compass Lexecon suggested, so perhaps we skipped the one in the middle because not none [*sic*] of the Experts has been advocating for that one. I proposed one, they proposed the other, so, these are the two ones that I discuss in my Report.

239. Dr. Flores' explanation is simply false. As early as their first report, Compass Lexecon discussed that Don Diego Phase II was in the Mineral Resource/Pre-development category.[536] Then, in their second report, Compass Lexecon responded specifically to Dr. Flores' position that Phase I was at the exploration stage, explaining:[537]

> Even if we were to accept that Phase I was not at the development stage (which is inconsistent with the analysis of the Technical Experts), **it would have to be characterized as in the pre-development stage (equivalent to "Mineral Resource Property"** as per CIMVAL definitions) and not as an exploration one (as wrongly claimed by Dr. Flores).

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533 **C-0196**, CIMVAL Standards 2003, S1.0, p. 10 (emphasis added).
534 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, pp. 1521:22-1522:12.
535 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, p. 1522:13-18.
536 Compass Lexecon ER1, ¶¶ 60-61.
537 Compass Lexecon ER2, ¶ 44 (emphasis added).

240. Thus, Dr. Flores has no excuse whatsoever for his complete failure to acknowledge and analyze the Mineral Resource/Pre-development category, especially in his second report. He simply ignored the fact, despite its obvious relevance, because it was inconsistent with his desired conclusion.

241. Indeed, Dr. Flores' dogged determination to ignore inconvenient facts continued during the hearing. Dr. Flores actually conceded during cross-examination that the only requirement for a project to be included in Mineral Resource/Pre-development category is the presence of Mineral Resources, and that Mr. Lamb's Technical Report concluded in June 2014 that Don Diego contained Mineral Resources.[538] But when pressed to accept the logically inescapable point that Don Diego was thus at least a Mineral Resource/Pre-development property, Dr. Flores continued to maintain that Don Diego was not "at the advanced exploration stage" because it "didn't have a Pre-Feasibility or Feasibility Study in progress."

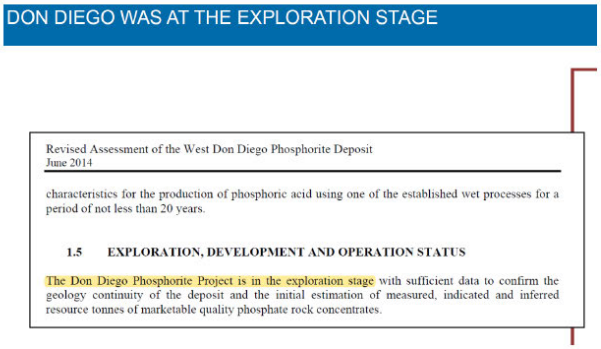
242. There are numerous problems with Dr. Flores' reasoning. First, CIMVAL and VALMIN do not require a project to be at an "advanced exploration" stage in order to fall into the Mineral Resource/Pre-development category. They require the presence of Mineral Resources, and Dr. Flores acknowledged—and in any event, has no qualifications to dispute—that Mr. Lamb already had estimated Mineral Resources in June 2014.[539]

243. Second, Mr. Lamb stated in his Technical Report—again, in June 2014, two years before the Valuation Date—that Don Diego already was "in a mature exploration stage and progressing toward being reclassified as an early stage development project."[540] In his reports and during his presentation at the hearing, Dr. Flores affirmatively cited Mr. Lamb's Technical Report for the proposition that Don Diego was in the "exploration stage,"[541] but completely omitted Mr. Lamb's conclusion (on the same page, only one

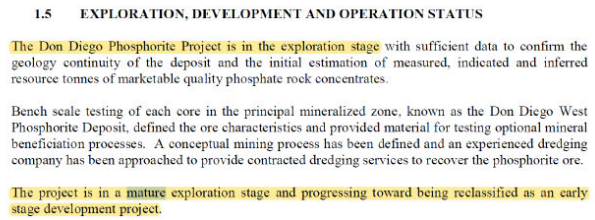
538 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, pp. 1522:22-1523:17, 1524:18-1525:1.
539 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, pp. 1522:22-1523:17, 1524:18-1525:1.
540 **CLEX-0003**, NI 43-101 Technical Report, June 30, 2014, p. 13.
541 Quadrant ER1, ¶ 26; **RD-0007**, Expert Presentation of Quadrant, p. 8.

paragraph away) that Don Diego was in a *mature* exploration phase and progressing toward the development stage:

Flores Hearing Presentation (Slide 8)



Lamb Technical Report



244. Third, CIMVAL does not require that a PFS be in progress in order for a project to be in the Mineral Resource category; it is only one item in the definition's non-exclusive list of projects that may be classified in the Mineral Resource category.[542] In any event, Dr. Flores also ignores that Odyssey had extensively studied all of the elements required for a PFS (*i.e.*, mining and processing plans, technical and economic viability) after Mr. Lamb already had concluded in June 2014 that Don Diego was progressing toward the Development stage.

245. Fourth, and in some ways most importantly, Dr. Flores did not discuss any of this in his reports. While one might charitably conclude that Dr. Flores simply overlooked the existence of the Mineral Resource/Pre-development category in the midst of his extensive workload in 2021,[543] that is very difficult to believe. Rather, the evidence seems plain that Dr. Flores deliberately passed over this intermediate project stage because it contradicted his argument that without a formal PFS, Don Diego was necessarily an "early exploration stage" project for which CIMVAL and VALMIN do not recommend valuation using the Income Approach. Considered alongside WGM's refusal to recognize the Mineral Resource estimates in Mr. Lamb's Technical Report on transparently specious

542 **C-0196**, CIMVAL Standards 2003, S1.0, p. 10.

543 Dr. Flores produced 28 expert reports in 23 different disputes, and testified eight times, in 2021. Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, pp. 1511:16-1512:8.

grounds, including that the report was not publicly filed in Canada, Dr. Flores' lack of candor raises questions about his objectivity and lays bare that Mexico's position on this issue is disingenuous and wrong.

246. In summary, even if Don Diego was not a Development stage project because it lacked a formal PFS, which Odyssey does not accept, the evidence firmly establishes that Don Diego was at least a Mineral Resource/Pre-development project, for which CIMVAL and VALMIN contemplate the use of the Income Approach in some cases. While CIMVAL and VALMIN do not define explicitly what they mean by "in some cases," it is reasonable to conclude that one such case would be when all of the information necessary to prepare a formal PFS exists, but the owner is waiting to receive its gating permit before it commissions a formal PFS or feasibility study, as was the case here.[544]

247. Furthermore, in addition to the CIMVAL and VALMIN standards, Odyssey also has presented survey evidence regarding the valuation approaches that market participants actually apply at different stages of a project's life cycle. That survey, conducted by the Management and Economics Society of the Canadian Institute of Mining (*e.g.*, the same CIM that promulgated the CIMVAL Standards and Guidelines), plainly reflects that market participants use the Income Approach far more often than the Market Approach, even before a project has reached the PFS stage:[545]

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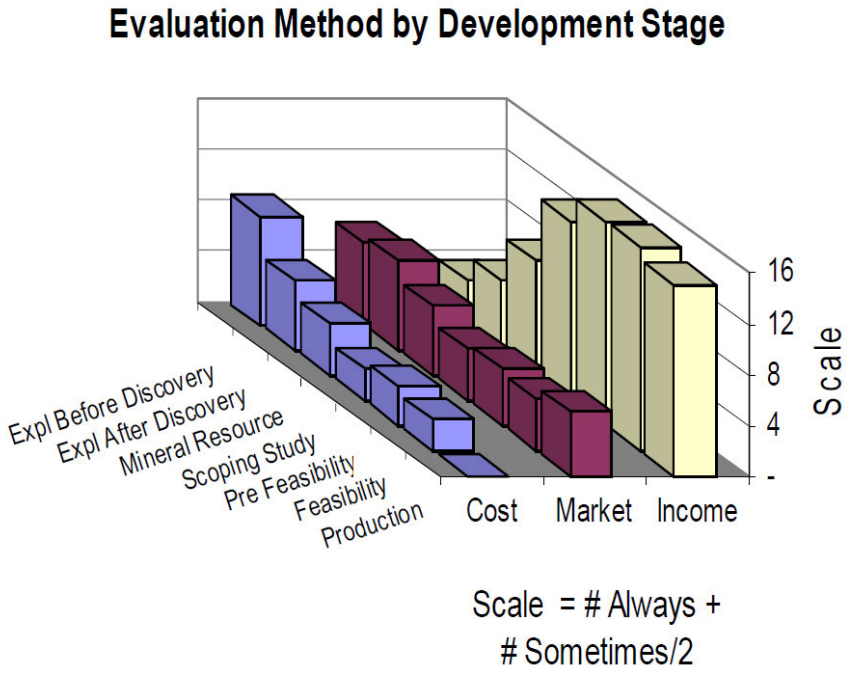
544 Bryson WS1, ¶ 216.

545 **CLEX-0037**, Smith, Lawrence D., MES Survey of Evaluation Practices in the Mineral Industry, CIM Management & Economics Society, p. 2.



248. Unsurprisingly, this survey matches the real-world views of major phosphate industry participants like Agrifos, experienced mining, processing and offshore project engineers like Lomond & Hill, economists specializing in natural resource valuations, and national securities regulators, all of whom confirm that market participants regularly use Income valuations like a DCF to estimate the value of projects even at early stages.[546]

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546 As Agrifos notes, "[r]eal world counterparties in phosphate and other mineral projects, including Agrifos itself, **use DCF analyses regardless of CIMVAL or VALMIN guidelines**." Agrifos ER, ¶ 48 (emphasis added). Mr. Fuller observes that, "[i]n a case such as Odyssey's Don Diego Project, a company would use a DCF model based on the NI 43-101 Technical Report and associated business planning (such as [redacted]) to decide whether to proceed with the next phase of a project." Lomond & Hill ER2, ¶ 6.4. As Mr. Fuller notes, the DCF is "**the de facto standard in the resources and mining sectors**," and even for early-phase projects, "[t]he approach outlined by Quadrant . . . is simply not how resource companies operate in the real world." Lomond & Hill ER2, ¶¶ 6.5, 6.7 (emphasis added). *See also* **C-0466**, R. Caldwell, et al., "Chapter 11: Valuing Natural Resource Investments," in: *Contemporary and Emerging Issues on the Law of Damages and Valuation in International Investment Arbitration* (2018), p. 302 (cited in Compass Lexecon ER2, ¶ 42, fn. 52) ("Projects in the extractive and renewables sectors, even pre-production projects, often exhibit characteristics that facilitate the development of reliable cash flow forecasts and risk adjustments. These characteristics explain the **routine use of the DCF method by developers for valuing such projects**.") (emphasis added); **WGM-13**, Australian Securities and Investments Commission, Mining and Resources – Forward-looking Statements, October 2016, p.12 ("'[E]ntities develop or engage others to develop scoping studies (or studies of a more preliminary nature) for internal management purposes and, in particular, to help inform a decision on whether to commit the entity to the next stage of exploration or development.' . . . These preliminary studies sometimes contain forward-looking statements such as production targets, forecast financial information and **income-based valuations. This is common and acceptable practice.**") (emphasis added).

249. Finally, as the Compass Lexecon experts explained at the hearing, the CIMVAL Guidelines explicitly discuss how a valuator should apply the Income Approach in situations exactly like this one. Guideline 4.7 states:[547]

> **G4.7** Where Measured and Indicated Mineral Resources are used in the Income Approach and/or where technical and related parameters are at a lower confidence level than Prefeasibility Study level it is recommended that the higher risk or uncertainty be recognized by some means, which might include using a higher discount rate, reducing the quantum of the Mineral Resources, or delaying the timing of production of the Mineral Resources in the Income Approach model, or some other appropriate means of reflecting the higher risk of including Mineral Resources.

250. As Dr. Spiller explained at the hearing (and is discussed further below in Section VI.D.1.d and VI.D.6), the Compass Lexecon DCF model followed this guideline by (i) reducing the resource estimate to account for the increased risk that Mineral Resources (as opposed to Reserves) would not translate into production, and (ii) including a risk premium in the discount rate to account for Don Diego's stage in the development cycle.[548]

251. It is one thing for Mexico to argue that Compass Lexecon should have applied even higher discounts in its DCF model to account for Don Diego's stage of development (as Dr. Flores argues, albeit unpersuasively, for the reasons discussed in Section VI.D.6). But in light of the fact that the CIMVAL Guidelines explicitly contemplate the use of the Income Approach to value Mineral Resources even when "technical and related parameters are at a lower confidence level than Prefeasibility Study level," along with the uncontested evidence from Odyssey's technical experts establishing that the inputs into the Compass Lexecon DCF model were at a PFS level of confidence at the Valuation Date, it is simply beyond the pale for Mexico to argue that the Income Approach should be disregarded entirely because Don Diego had no formal PFS when Mexico denied the MIA.

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547 **CD-0005**, Expert Presentation of Compass Lexecon, p. 7, citing **C-0196**, CIMVAL Standards 2003, G4.7, pp. 24-25.

548 **CD-0005**, Expert Presentation of Compass Lexecon, pp. 8-9; Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1411:12-1414:22; Compass Lexecon ER2, ¶¶ 46-47.

D. Compass Lexecon's Income Valuation Is Reasonable and Well-Supported

252. As discussed above, the FMV standard focuses on the price that a hypothetical willing buyer would have paid for Odyssey's interest in the Don Diego project. Consistent with that standard, and the overwhelming evidence that real-world buyers would primarily value Don Diego using the Income Approach based upon their own assessment of all data available as of the Valuation Date, Dr. Spiller and Mr. López Zadicoff of Compass Lexecon value Don Diego using the DCF method for Phase I, and the DCF plus ROV methods for Phase II. In total, Compass Lexecon concludes that the Don Diego project had a total value [redacted].[549]

253. As discussed in the prior section, the Tribunal should reject Mexico's generic argument that the Income Approach is inappropriate because Don Diego was at an early stage in its development cycle. Instead, as in any case involving Income valuation, the Tribunal should scrutinize the quality of the inputs into the valuation model in order to assess whether Odyssey's Income valuation satisfies the requirement of reasonable certainty.

254. Notably, Mexico did not submit an alternative Income valuation. Rather, its experts (primarily WGM and Dr. Flores) simply criticized certain of the inputs into Compass Lexecon's Income valuation, without producing their own Income valuation using inputs that they deem to be more reliable. As discussed in the sections below, none of those criticisms of the inputs into the Compass Lexecon Income valuation has any merit, and thus the Tribunal should simply accept Compass Lexecon's Income valuation in its entirety (particularly given that Mexico did not submit an Income valuation of its own). Nonetheless, if the Tribunal disagrees with any of the inputs into Compass Lexecon's Income valuation, it can adopt alternative assumptions that it deems appropriate to satisfy the requirement of reasonable certainty, and Compass Lexecon can assist the Tribunal in recalculating Odyssey's damages based on any such alternative findings.

549 **CLEX-0067**, Compass Lexecon Updated DCF Model, "Summary Results."

255. In the subsections that follow, Odyssey will summarize the evidence regarding each of the main inputs into the Income valuation model, demonstrating that the Compass Lexecon model is reasonable and reliable, and that Mexico's criticisms have no merit.

1. Don Diego Is a Massive Resource, and the Mineral Resource Estimates Are Reasonable and Reliable

a. Don Diego's Resources Were Classified by World-Renowned Geologist Henry Lamb

256. Mr. Lamb is a world-renowned geologist and "Qualified Person" for purposes of JORC and NI 43-101 reporting, whose credentials are undisputed even by Mexico's experts in this arbitration.[550] He is "widely considered one of the most knowledgeable, experienced and reliable [phosphate geologists] in the field."[551] After conducting extensive analysis, Mr. Lamb determined that Don Diego is a massive, continuous and homogenous sedimentary phosphate sand deposit with the potential to produce a commercial phosphate rock concentrate with dredging and simple, well-established beneficiation techniques of particle sizing and flotation.[552] Mr. Lamb presented his analysis in a 1,357-page, world-class NI 43-101 Technical Report, wherein Mr. Lamb estimates the Measured, Indicated, and Inferred Mineral Resources of the Don Diego Project. Mr. Lamb published the NI 43-101 Technical Report on 30 June 2014,[553] and the report only addresses the original Concession Area, and not the Don Diego Norte or Sur Concessions.[554]

257. Mr. Lamb reviewed the initial laboratory analysis and mapping, and advised Odyssey as it planned the next cruises to continue mapping the deposit, obtain additional samples, and

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550 *See* **C-0459**, Henry James Lamb CV, 21 June 2021; *see also* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1168:4-9: ("Q. (Mr. Burnett) You don't dispute that Mr. Lamb's credentials--you don't dispute Mr. Lamb's credentials and don't dispute that he's a world-renowned QP in the phosphate industry, do you? A. (Mr. Hinzer) I certainly do not dispute his credentials at all. Thank you.").

551 Agrifos ER, ¶ 23.

552 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 45, 72, 77-78.

553 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, p. 1.

554 As discussed further below, Mr. Lamb supplemented his Mineral Resource estimate in August 2014 with additional tonnage based on updated data from FIPR's analysis of core samples from the Don Diego Norte Concession. **C-0223**, Don Diego West Resource Estimate With Northern Extension, 21 August 2014. Compass Lexecon only included Mineral Resources located in the original Concession area in its Income Valuation. *See* Compass Lexecon ER1, ¶ 12, fn. 19.

better define the phosphorite deposit. In total, the Odyssey team recovered [redacted] core tubes (the locations of which were geolocated and logged),[555] and also mapped the sea floor bathymetry (topography) with sonar.[556] Following that work, Mr. Lamb used results from [redacted] Vibracore core tubes up to a depth of 6 meters taken throughout the resource area, each divided into approximately one-meter segments (intervals) for testing,[557] in order to prepare the resource estimate in his NI 43-101 Technical Report.[558]

258. Additionally, over [redacted] were assayed at FIPR, an independent, internationally-recognized phosphate laboratory and research center, in order to determine the chemical makeup, moisture, and density of samples (including overall P_2O_5 percentage, as well as weight percentages and chemical makeup of different particle size fractions).[559]

259. Even though Mexico disputes the sufficiency of Odyssey's data, Mexico's experts at WGM conceded at the hearing that they often declare a Mineral Resource even without this level of data, and without much of the data they disingenuously claim is necessary for a Mineral Resources classification.[560]

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555 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, p. 77.

556 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 35-40.

557 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, p. 45.

558 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, p. 46. Vibracoring is a type of core drilling unit. Because it obtains long, well-preserved cores, it permits the stratigraphic layers with sediment depth to be captured while preserving the depositional sequence of sediments, with younger sediments at the top and older ones at the bottom. *See also* **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 42-43; Selby ER, ¶ 47.

559 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 45-46.

560 *See* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1191:12-1192:3 ("Q. (Mr. Burnett) Now, I would like to show you Exhibit C-375, which is on Page 89, PDF Page 94, and this is WGM's Technical Report for the AsiaPhos Project in China in which WGM states that, 'while variograms were generated for each deposit to determine if grade-distribution trends exist, there is insufficient data to produce meaningful conclusions about sample dependence at either deposit.' Do you see that? A. (Mr. Breede) Um-hmm. Q. However, isn't it true that WGM declared a resource in spite of not having enough data to make useful variograms? A. Yes. That's quite common."). *See also* Claimant's Reply, ¶¶ 399, 403, 413, 416, 421, 425 (demonstrating that WGM had declared Mineral Resources in a deposit in China: (i) with drill hole spacing twice as large as Don Diego, in a deposit with much more complex geology, despite claiming Don Diego's drill spacing was inadequate; (ii) without enough data to construct variograms despite claiming they are required; (iii) without assays of certain chemical components despite claiming they are required; (iv) without analyzing the continuity of various chemical components despite claiming it is required; (v) without referencing any "mining, metallurgical, economic, marketing or environmental studies . . . in the preparation of these Resources," despite claiming such studies are required; and (vi) while using the term "ore" despite claiming such use is forbidden) (citing **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014).

260. Dr. Selby and Mining Plus both validated Mr. Lamb's Mineral Resource estimates using independent analyses of the 2013-2014 Don Diego drill hole sample and location datasets that formed the basis for the NI 43-101 Technical Report. Dr. Selby's contour modelling method, and Mining Plus' geostatistical method using variograms, both validated Mr. Lamb's estimates, and indeed, confirmed that both his volume estimates and his Resource classifications were extremely conservative.[561]

261. Using the above data, Mr. Lamb declared Measured, Indicated, and Inferred Resources using fixed areas of influence around each Resource Vibracore location [redacted].[562] In total, Mr. Lamb's NI 43-101 Technical Report of June 2014 estimated total Mineral Resources in the Don Diego West Phosphorite Deposit of [redacted], as follows:[563]

[redacted]

262. After issuing the NI 43-101 Technical Report, in August 2014, Mr. Lamb prepared a second resource estimate that classified a Resource within the Don Diego Norte Concession (also referred to as the Northern Concession or Northern Extension).[564] When the Don Diego

561 Claimant's Reply, ¶¶ 405-411; Selby ER1, ¶¶ 80-83; MP Geostatistics ER, p. 51; MP HGR ER, p. 40; Selby ER2, ¶ 62. *See also* Agrifos ER, ¶ 23 (Agrifos further notes that Mr. Lamb has a reputation "for realistic – even conservative – resource estimations.").

562 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 66-67, 69-70.

563 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, p. 67, Tables 17-1, 17-2, 17-3.

564 **C-0223**, Don Diego West Resource Estimate With Northern Extension, 21 August 2014.

Norte Concession is included, the total Resource estimate comprises [redacted][565]

263. Finally, Mr. Lamb's subsequent analysis of the above data indicated that a portion of the Mineral Resources was so highly concentrated that a commercial phosphate rock product could be produced with particle sizing alone using selective mining (estimated [redacted] of inferred high-grade resource).[566]

b. Odyssey's Experts in this Arbitration Confirm That Mr. Lamb's Estimates Were Conservative and Reliable

264. As Odyssey's other experts and witnesses in this arbitration have confirmed, Mr. Lamb's estimates were conservative and highly reliable:

a. The size of the Project was enormous,[567] among the world's largest phosphate deposits in development at the time.[568]

b. The deposit is continuous and homogenous,[569] which reduces the mineralization risks as compared to more complex deposits.[570]

c. The raw concentration of phosphate is so high that simple mechanical particle separation can produce commercial-grade phosphate rock with no further beneficiation steps or costs.[571]

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565 **C-0223**, Don Diego West Resource Estimate With Northern Extension, 21 August 2014. The resource assessment breaks down [redacted]

566 **C-0112**, H. Lamb Report, "Technical Memo: Preliminary Assessment of the Potential to Produce a Sized Phosphate Rock Product," 14 May 2015.

567 *See* **C-0223**, Don Diego West Resource Estimate With Northern Extension, 21 August 2014 ([redacted]); *see also* **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 72, 77-78; Agrifos ER, ¶ 69; Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1292:5-6.

568 **C-0090**, Investment Bank Valuation, 29 July 2014, pp. 11-12; Agrifos ER, ¶ 69.

569 *See* MP Geostatistics ER, p. 26 ("Phosphate deposits with this continuity are very rare."); Agrifos ER, ¶ 69; Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1291:19.

570 *See* Selby ER1 ¶ 68; Agrifos ER, ¶ 69; **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 29, 33-34.

571 *See* **C-0112**, H. Lamb Report, "Technical Memo: Preliminary Assessment of the Potential to Produce a Sized Phosphate Rock Product," 14 May 2015; Gruber ER1, pp. 1-12; **C-0469**, Jacobs Engineering Bench Scale Phosphoric Acid Pilot Plant Testing, 19 May 2015, p. 2; Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1293:15-21.

d. The resource is exposed or nearly exposed at the surface, avoiding the costs and "years to prepare for active mining" normally required to dig mineshafts or strip substantial overburden to access deep resources.[572]

e. The Project is strategically located on the North American West Coast, which not only would hedge against supply disruptions and price shocks[573] but would "greatly reduc[e] the carbon footprint of phosphate supply to this part of the world."[574]

265. In addition to several experts finding that the information available at the time Mexico unlawfully denied the MIA was at PFS level, both Dr. Selby and Mining Plus further concluded that Mr. Lamb's estimates in the Technical Report NI 43-101 were "conservative assumptions;"[575] "the studies supporting the Don Diego project were realistic;"[576] and "[t]he quality of geological understanding and P_2O_5 grade continuity at the Don Diego deposit is appropriate for future resources that could be classified as Indicated and Measured to sufficiently support reserve conversion in a Pre-Feasibility Study (PFS), as defined in the CIM guidelines."[577] As discussed in the next section, Mexico's experts at WGM do not seriously contest, and barely even discuss, any of the conclusions from Dr. Selby and Mining Plus.[578]

266. Therefore, the Tribunal can take a high level of comfort in the information Mr. Lamb provided in his Technical Report, which Mexico has failed (and largely has not even attempted) to dispute.

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572 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, p. 16; Bryson WS1 ¶¶ 16-17; Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1291:8-13.

573 Bryson WS1, ¶ 148; Longley WS1 ¶¶ 22-32; Longley WS2, ¶ 17.

574 Bryson WS1, ¶ 148.

575 Selby ER1, ¶ 132.

576 Selby ER2, ¶ 112

577 MP Geostatistics ER, p. 50.

578 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1188:7-17 ("Q. (Mr. Burnett) Mr. Breede, my question is--so, Mining Plus was able to do a geostatistical analysis, a three-dimensional variograms, block model and resource estimate using the drillhole spacing in Mr. Lamb's Report; right? A. Yes, that's right. Q. And you don't contest Mining Plus's conclusions regarding drillhole spacing in your Second Report, do you? A. No, we do not address Mining Plus's Report.").

c. WGM's Conclusions Are Neither Credible nor Supported

267. As became evident at the hearing, WGM was clearly out of its depth when analyzing an offshore phosphate dredging project such as Don Diego. The witnesses from WGM admitted that they are not experts in marine mineral resource projects[579] or dredging operations.[580] Moreover, while WGM may be qualified in principle to opine on the Mineral Resource estimates and related analysis performed by Mr. Lamb, Dr. Selby, and Mining Plus, WGM's testimony at the hearing revealed that their analysis was superficial at best, and riddled with basic errors and inconsistencies.

268. For instance, at the hearing, WGM admitted that Mining Plus' and Dr. Selby's Mineral Resource estimates, which validated Mr. Lamb's Mineral Resource estimates using independent analyses of the 2013-2014 Don Diego data that formed the basis for the NI 43-101 Technical Report, were within 5% of each other.[581] Yet despite having received all of the same Don Diego data that Dr. Selby and Mining Plus used to conduct their analysis, Mexico's experts presented no alternative analysis, models or data whatsoever. Indeed, WGM could not even get its story straight regarding the internal work it performed with this data. Mr. Hains claimed that WGM ***did not*** put the underlying geological data,[582] 3D

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579 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1112:9-16 ("Q. (Ms. Thorn) Okay. And your menu of resources doesn't--and the dropdowns for geological or mining don't include marine mineral resource projects, do they? A. (Mr. Hinzer) Not specifically, no. Q. Not at all; right? A. (Mr. Hinzer) And as far as what is on our website, no.").

580 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1113:7-9 ("Q. (Ms. Thorn) Okay. And to be clear, WGM isn't here holding themselves out as dredging experts, are they? A. (Mr. Hinzer) Certainly not.").

581 *See* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1172:18-1173:2: ("Q. (Mr. Burnett) Now, if we look at PDF 96 of Selby 2, which is Mining Plus Report, isn't it true that Mining Plus concluded that the difference between the estimates--its estimate and Mr. Lamb's is only about 5 percent. It's in the first paragraph. A. (Mr. Hinzer) Yes, I see that is what Mining Plus's conclusions were.").

582 *See* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1175:17-1176:2 ("Q. (Mr. Burnett) Just so I get a clear answer to my question, sir, WGM has not independently reviewed the underlying geological data. That's a "yes"; right? A. (Mr. Hains) No. We reviewed all of the data that was available that was provided in Mr. Lamb's Report. Did we take all of that data, put it into a new computer program and generate a new geological model and resource estimate? No.").

bathymetry data,[583] or drillhole database[584] into a computer program in order to generate a new geological model or resource estimate. Mr. Breede, however, admitted that WGM ***did*** conduct an independent geostatistical analysis of this data, but that they decided not to produce it or even discuss it in their reports.[585] There is only one plausible explanation for WGM to both deny that they analyzed the data, and to admit that they analyzed the data but withheld the results. Independent analysis of the Don Diego core sample data confirms the validity of the Mineral Resource assessment every time, from every angle—but WGM has approached its assignment with bias and a lack of professionalism, refusing full stop to engage with evidence that falsifies the thesis it is trying in vain to advance.

269. WGM also did not meaningfully engage with any of the evidence presented by Dr. Selby and Mining Plus in this arbitration, even though it falls squarely within WGM's area of expertise. WGM's reports reference Dr. Selby's analysis a total of five times, all regarding issues of scant relevance to Dr. Selby's conclusions.[586] Similarly, WGM's reports reference the Mining Plus reports only once, in a single conclusory statement with no supporting analysis.[587]

270. At the hearing, Mr. Hinzer explained WGM's failure to confront Claimant's expert evidence on issues within its field of expertise on the ground that "since the Report was

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583 *See* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1176: 9-19 ("Q. (Mr. Burnett) Thank you. So, sir, did you--you didn't review the bathymetry 3-D model data of the seafloor surface taken by multi-beam sonar, did you? A. (Mr. Hains) Yeah, we looked at the outputs of that in terms of the figures that were provided within the various documents. Did we independently take all of that information and enter it into a computer database to generate a new surface? No. That is beyond what would be undertaken in any due-diligence exercise.").

584 *See* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1177:3-11 ("Q. (Mr. Burnett) And you didn't review the drillhole database, which is the GPS location of each drillhole and time taken on the exploration vessel, did you? A. (Mr. Hains) We looked at the drillhole data. Did we take the data for the GPS locations for the drillholes, put those into a computer program to generate an independent--yeah, yeah, model of where the drillholes were? No. Q. No, thank you.").

585 *See* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1190:13-17 ("Q. (Mr. Burnett) And it sounds to me like WGM conducted some sort of geostatistical analysis, but you guys kept it in-house; right? It wasn't produced in this case, and it wasn't discussed in any way, shape or form; right? A. (Mr. Breede) Correct."). *See also* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1173:16-1174:1 ("Q. (Mr. Burnett) Did you--Mr. Breede, did you--did WGM conduct a similar geostatistical analysis to Mining Plus in this case? A. (Mr. Breede) Not to the same breadth of detail that Mining Plus has done. Q. And you haven't submitted it with any of your Reports, obviously? A. (Mr. Breede) No.").

586 WGM ER1, ¶¶ 61, 67, 108; WGM ER2, ¶¶ 54, 56.

587 WGM ER2, ¶ 60.

produced after the Valuation Date, we believe that its conclusions are immaterial to what was the case at the Valuation Date."[588] But as Mr. Hinzer was forced to acknowledge, Mining Plus and Dr. Selby analyzed Project data and information that did exist as of the Valuation Date—**the same data and information that were provided to WGM**.[589] In the context of a FMV analysis, the objective is to understand how a hypothetical buyer would have assessed the information about Don Diego that was available as of the Valuation Date, and thus the expert opinions of Dr. Selby and Mining Plus are directly material to that issue. Indeed, WGM's justification for failing to consider that evidence is transparently absurd because **WGM's reports were prepared after the Valuation Date**, and thus WGM's entire analysis would be irrelevant if its reasoning had any merit.[590]

271. WGM's failure to consider Claimant's expert evidence is devastating to its credibility. For example, one of WGM's main criticisms of Mr. Lamb's Technical Report is that the space between drill holes was too large to support Mr. Lamb's conclusions, given the continuity level of the Don Diego deposit. WGM, however, did not conduct any independent analysis of the continuity of the deposit (at least that it produced in the arbitration).[591] Moreover, WGM did not even consider the Mining Plus report, which performed a geostatistical

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588 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1172:1-4.

589 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1172:5-17.

590 Dr. Flores gives similarly inconsistent and evasive reasons for his selective consideration of the evidence from the technical experts in this case. On the one hand, Dr. Flores criticizes Compass Lexecon for basing its DCF model on "the opinions prepared by Claimant's technical experts in the context of this Arbitration, rather than relying on feasibility studies and other contemporaneous documents prepared prior to the Valuation Date." Quadrant ER1, ¶ 92. Dr. Flores, however, relies on WGM's post-Valuation Date analysis of the Lamb Report, rather than the Lamb Report itself, to support his conclusion that "the Don Diego deposit did not even have properly defined mineral resources [and therefore] the tonnage in the [Lamb] Report cannot be used as a reliable basis to perform a DCF valuation." Quadrant ER1, ¶ 114. When pressed on cross-examination whether it is thus the Tribunal's responsibility to weigh the credibility of the respective technical experts, Dr. Flores then deflected, answering that "If the Tribunal agrees with me that the Market Capitalization Method is an appropriate method to evaluate based on contemporaneous information as of the Valuation Date, what was the value of the Project, then you don't even need to delve into saying which expert writing reports in 2020 and 2021 is correct or is not correct." Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, p. 1535:8-14. Dr. Flores thus apparently forgot that he himself relied on the post-Valuation Date opinion of WGM to support his conclusion that Don Diego should be valued using the Market Capitalization method rather than the DCF method in the first place.

591 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1190:13-17 ("Q. (Mr. Burnett) [I]t sounds to me like WGM conducted some sort of geostatistical analysis, but you guys kept it in-house; right? It wasn't produced in this case, and it wasn't discussed in any way, shape or form; right? A. (Mr. Breede) Correct.").

analysis of the deposit and concluded that Don Diego is "an extremely uniform deposit that has little to no short-range variation, and a strong grade relationship between samples over a very long range along strike. The current drill spacing is more than sufficient to define continuity in a deposit with these characteristics."[592] As Mr. Breede acknowledged on cross-examination, WGM does not contest Mining Plus' conclusions regarding drillhole spacing.[593]

272. Furthermore, much of WGM's analysis consists of generic criticisms that are not only ill-founded, but inconsistent with its own practice when it advises clients in non-contentious matters. For example, WGM opines that Mr. Lamb's report contains no indication that "geostatistical methods such as variograms were used to evaluate spatial statistics for the project," and that absent such evidence, "WGM finds the continuity assumptions for the deposit to be unsupported."[594] There are several problems here. To begin with, as Mr. Breede was forced to acknowledge on cross-examination, Odyssey's evaluation of Don Diego (specifically the MTG Button report from February 2014) *did* include a geostatistical analysis with variograms, which WGM did not discuss in its reports (and which Mr. Breede admitted he did not even review).[595] Mr. Breede also had to acknowledge that Mining Plus had validated Mr. Lamb's continuity assumptions in a geostatistical report that WGM did not consider and does not dispute.[596] Moreover, Mr. Breede then admitted that it is "quite common" for mineral valuators to declare resources even without sufficient geostatistical data to produce variograms, relying instead on their experience and expertise.[597] In fact, WGM itself did so in a Technical Report for a phosphate project in China.[598]

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592 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1187:13-21, discussing Mining Plus ER1, p. 50.

593 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1188:13-17.

594 WGM ER1, ¶¶ 65-66.

595 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1188:18-1190:11, discussing **C-0201**, Mining Resource Model, February 2014.

596 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1187:10-1188:17.

597 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1191:12-1192:12.

598 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1191:12-1192:3, discussing **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014.

273. WGM's analysis also contains obvious errors. For instance, WGM opines that "Lamb, in his resource estimate, has used a constant density for estimation of tonnage," even though "there were considerable variations in coarse and fine waste percentages and thus in-situ density by resource classification."[599] On the latter point, WGM further states that "[redacted]," citing Tables 17-1, 17-2, and 17-3 of the Lamb Technical Report.[600] In one of the more memorable moments during the hearing, however, it quickly became apparent that those tables in the Lamb Technical Report presented the absolute volume of fine waste (in tonnes) for each category, not the percentage proportion of fine waste in each category.[601]

[redacted]

274. As Mr. Hains had to admit on cross-examination, when WGM's error is corrected, the "[redacted]."[602]

d. Compass Lexecon Risk-Adjusted Mr. Lamb's Resource Estimates

275. As discussed above, Compass Lexecon recognized that mining industry norms (such as the CIMVAL guidelines) recommend including risk adjustments in an Income valuation of Mineral Resources to account for the additional riskiness of the lower confidence level of

599 WGM ER2, ¶ 49.

600 WGM ER2, ¶ 68. Although WGM's citation refers to Gruber ER1 on this point, the correct reference is to page 67 of **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, which contains Tables 17-1, 17-2, and 17-3. Mr. Hains acknowledged at the hearing that WGM's report cites to the Lamb Report for this point. *See* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1183:1-8.

601 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1185:5-15 ("Q. (Mr. Burnett) Sir, you say that this is 27.2 percent, 55.6 percent, and 41.8 percent, but that actually refers to tons; right? A. (Mr. Hains) Well-- Q. (Mr. Burnett) Right? A. (Mr. Hains) Yes. Q. (Mr. Burnett) So, since there are tons, in order to determine the percentage of fine waste of the total resource category, you divide the fine waste by the total ore and multiply that by a hundred; right? A. (Mr. Hains) That's correct.").

602 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1186:10-16.

Resources (compared to Reserves). As the figure below illustrates, Compass Lexecon applied two adjustments:[603]

276. First, Mr. Lamb's August 2014 Technical Report estimated total Mineral Resources in Don Diego's Primary Concession and North Extension of [redacted]. His estimate for the North Extension, however, was not included in a formal Technical Report, and thus Compass Lexecon excluded those volumes from its analysis, reducing the total estimated Mineral Resources by approximately [redacted].

277. Second, Compass Lexecon applied a downward adjustment to account for the risk that Mineral Resources would not translate into production. Relying on Dr. Selby's evidence regarding the probability of Mineral Resources converting into Reserves and then production, Compass Lexecon assumed that only [redacted] of Measured and Indicated Resources, and only [redacted] of Inferred Resources, would translate into production.[604] Mexico has not contested the basis for these projections (by, for example, calling Dr. Selby for cross-examination), and has not submitted alternative conversion ratios that it deems more reasonable.

278. Mexico's failure to consider this risk adjustment reveals a very misleading statement in its opening presentation at the hearing. Using the following slide, Mexico's counsel alleged that Inferred Resources (which have the lowest level of confidence) account for [redacted] of Don Diego's total Resources, without mentioning the risk adjustment applied by

603 **CD-0005**, Expert Presentation of Compass Lexecon, p. 8.

604 **CD-0005**, Expert Presentation of Compass Lexecon, p. 8; Compass Lexecon ER1, ¶¶ 67-68.

Compass Lexecon, thus implying that Inferred Resources account for [redacted] of the total value of Don Diego:[605]

279. In fact, as Dr. Spiller explained at the hearing, the Inferred Resources account for a much lower percentage of the total production projected in Compass Lexecon's DCF model due to the risk adjustment discussed above. In addition, Compass Lexecon projects that all of the Inferred Resources would be extracted during Phase II, which is subject to a higher discount rate to account for the increased riskiness of that phase of the Project. Taken together, this means that Inferred Resources contribute only [redacted] of the total value of the Don Diego project.[606] Not only is this far less than the [redacted] figure that Mexico presented at the hearing, but this small contribution falls squarely within Mexico's counsel's own characterization during opening arguments that Inferred Resources "no sería motivo de preocupación si estos representaran una proporción relativamente menor del total."[607]

2. The Production Plan in the DCF Model Is Reasonable and Well-Supported

280. Odyssey developed the engineering and production plan for Don Diego over a period of approximately two years, from May 2013 to September 2015.[608] The project was led by

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605 **RD-0001**, Respondent's Opening presentation, p. 75; Hrg. Day 1 Tr., Respondent's Opening Presentation, 24 January 2022, pp. 178:8-179:13 (Spanish Tr.), pp.155:10-156:8 (English Tr.).

606 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, p. 1413:5-16.

607 Hrg. Day 1 Tr., Respondent's Opening Presentation, 24 January 2022, p. 179:5-7 (Spanish Tr.), p. 156:2-3 (English Tr.) (Inferred Resources "wouldn't be a matter of concern if they represented a relatively lower proportion of the total").

608 **CD-0005**, Expert Presentation of Compass Lexecon, p. 3.

Mr. Bryson, who had extensive prior experience designing, implementing, and managing both terrestrial and marine mining projects, including highly comparable ocean floor diamond dredging and processing projects and continental shelf marine aggregate dredging.[609]

281. Mr. Bryson worked closely with Boskalis to develop the production plan for Don Diego. Odyssey selected Boskalis for the project because it is universally acknowledged as one of the world's leading dredging and dredged-materials processing companies, because it had a large Mexican subsidiary with extensive experience executing projects in that country, and because of its membership in the "Building With Nature" consortium for superior environmental stewardship.[610] Drawing heavily on Boskalis' extensive technical expertise and experience, Mr. Bryson and Boskalis developed a comprehensive engineering and production plan for all phases of the Don Diego production cycle, including dredging the phosphate sands, separating and processing the phosphate products, returning tailings to the ocean floor, and transporting the phosphate products to market.[611] Importantly, throughout that process, Boskalis "incorporated highly conservative assumptions into its engineering proposal as contingencies that would have the likely effect of generating additional value at the detailed engineering stage by overcompensating at the outset for any possible inefficiencies in material processing."[612]

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609 Bryson WS1, ¶¶ 5-11; **CD-0005**, Expert Presentation of Compass Lexecon, p. 3.

610 Bryson WS1, ¶ 2. Dr. Selby explains that Boskalis is "one of the largest marine contractors" and among the "notable world-leading dredging and offshore contractors that operate on a global basis," stressing that they have "a strong reputation for delivery of dredging and infrastructure projects in a wide range of marine environments around the world." Selby ER1, ¶ 91. *See also* ADBP ER, Section 3.3, p. 3 (describing Boskalis as "among the world's largest and most experienced dredging contractors"). As Mr. Bryson adds, "Boskalis was (and is) a company with enormous resources," noting that it "owned and operated over 1,100 vessels around the world, with over 15,600 employees." Bryson WS1, ¶ 39. Even Mexico's expert Taut testified that it was "very familiar" with Boskalis and agreed that it was "among the largest and most experienced dredging companies in the world." Hrg. Day 5 Tr., Testimony of Taut, 28 January 2022, p. 1236:11-17. *See also* Hrg. Day 2 Tr., Testimony of Craig Bryson, 25 January 2022, pp. 364:9-366:2; Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, pp. 1296:14-1297:8; Claimant's Memorial, ¶¶ 62, 64; **C-0187**, Boskalis Presentation, "Building with Nature," 28 August 2019.

611 Bryson WS1, ¶¶ 41-224.

612 Bryson WS1, ¶ 103.

282. In September 2015, Odyssey formalized the production plan in a comprehensive business model presented to [redacted][613] The production estimates [redacted] were derived from projections prepared by Boskalis based on its extensive experience in comparable dredging and processing operations.[614] In total, [redacted], which included Boskalis' conservative contingencies for potential process inefficiencies mentioned above.[615]

283. Compass Lexecon, however, did not rely solely on the [redacted] for the production inputs into its DCF model. Rather, those inputs were scrutinized and validated by independent experts in this arbitration: Dr. Selby, Dr. Sheehan, and Mr. Gruber. Dr. Selby is a Qualified Person and one of the world's foremost geologists of the continental shelf who has spent his entire career in the marine minerals sector, with a particular focus on aggregate dredging projects that are highly similar to the Don Diego Project.[616] Dr. Sheehan is chartered structural engineer with a PhD in dredged material management and extensive experience in project management and feasibility studies for dredging projects worldwide.[617] Mr. Gruber is a Qualified Person and phosphate beneficiation specialist with over 45 years of experience in the design and operation of phosphate processing facilities.[618]

284. Dr. Selby and Mr. Gruber both independently endorsed the production estimates in the [redacted].[619] In fact, Dr. Selby concluded that the [redacted] projections were conservative, both as to the annual production estimates and the total high grade resource that could be extracted during Phase I of the Don Diego Project.[620] Mexico chose

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613 **C-0134**, [redacted], 22 September 2015.
614 Bryson WS1, ¶¶ 187, 213.
615 **C-0134**, [redacted] 22 September 2015, p. 19.
616 Selby ER1, ¶¶ 6-9, and Appendix 1, Curriculum Vitae.
617 ADBP ER, Section 1.3, p. 1 and Appendix A, Curriculum Vitae.
618 Gruber ER2, p. 1; **GG-0002**, Glenn Gruber CV.
619 Selby ER1, ¶¶ 124-25, 133; Gruber ER1, p. 1.
620 Selby ER1, ¶¶ 81, 123-24.

not to cross-examine Dr. Selby and Mr. Gruber, and has not submitted any qualified expert evidence of its own on these issues. Although WGM opined on dredging and marine mineral operations,[621] they admitted having no expertise in these fields.[622] In fact, when this was brought to their attention in the Reply,[623] they relied instead in their second report on Taut,[624] which admitted it also had no expertise in these fields,[625] and denied being the source of some of the technical quotations attributed to it in WGM's second report.[626]

3. The CAPEX and OPEX Projections in the DCF Model are Reasonable and Well-Supported

285. As with the production estimates, the CAPEX and OPEX estimates in [redacted] were derived from projections prepared by Boskalis based on its extensive experience in comparable dredging and processing operations after more than two years of studying and refining the engineering and production plan.[627] By the time the production plan was incorporated into [redacted], "the estimate accuracy level for Boskalis' price quotations had reached +/-25%, meaning that the projected CAPEX and OPEX costs associated with achieving the designated production outcomes would be expected to vary up or down by no more than 25% (with, typically, a 50% confidence level)."[628] It is

621 WGM ER1, ¶¶ 104-109.

622 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1113:7-9 ("Q. (Ms. Thorn) Okay. And to be clear, WGM isn't here holding themselves out as dredging experts, are they? A. (Mr. Hinzer) Certainly not."). *See also* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1112:9-16.

623 Claimant's Reply, ¶ 439.

624 WGM ER2, ¶¶ 76-77, 82-84.

625 *See* Hrg. Day 5 Tr., Testimony of Taut, 28 January 2022, pp. 1232:22-1237:20; at p. 1234:12-22 Mr. Curren testified as follows: "Q. (Mr. File) And you haven't developed capital or operating expenditure estimates for Feasibility Study or Pre-Feasibility Study for a Dredging Project; is that right? A. (Mr. Curren) That is correct. Q. (Mr. File) And you wouldn't consider yourself competent to do so? A. (Mr. Curren) No. Q. (Mr. File) All right. You wouldn't consider yourself an expert in TSHD operations or management; right? A. (Mr. Curren) That is correct." *See also* Hrg. Day 5 Tr., Testimony of Taut, 28 January 2022, p. 1237:10-16: "Q. (Mr. File) So, you don't have experience with the technology that's used for particle separation when processing mineral sediments like phosphate ore? A. (Mr. Curren) No. Q. (Mr. File) And you don't know how much they cost to buy or operate; right? A. (Mr. Curren) Nope, not at all."

626 *See* Hrg. Day 5 Tr., Testimony of Taut, 28 January 2022, pp. 1231:17-1232:21: "Q. (Mr. File) . . . So, is it fair to say this is not from your Report? A. (Mr. Curren) That is correct. Q. (Mr. File) Okay. Do you know where it comes from, or who WGM is quoting there? A. (Mr. Curren) No, I do not."

627 Bryson WS1, ¶¶ 41-224.

628 Bryson WS1, ¶ 213.

undisputed that an accuracy level of +/- 25% is typical for projects at the PFS stage of development.[629] Furthermore, as Mr. Bryson has explained, Boskalis' CAPEX and OPEX estimates include numerous different contingency buffers that resulted in a conservative projection.[630]

286. Additionally, once again, Compass Lexecon did not rely solely on [redacted] for the cost inputs into its DCF model. Rather, those inputs were scrutinized and validated by independent experts in this arbitration—Dr. Sheehan, Mr. Fuller, and Dr. Selby.

287. First, Dr. Sheehan examined the CAPEX and OPEX for the dredging part of the operation (*i.e.*, the Trailing Suction Hopper Dredger ("**TSHD**")). Dr. Sheehan has a PhD in dredged material management, and his company (ADBP) is one of the world's most experienced and foremost consultants on complex dredging projects.[631] Applying the same cost estimation methodology that ADBP has applied to similar dredging projects internationally, Dr. Sheehan concludes that the Boskalis CAPEX and OPEX estimates for the TSHD operation are conservative and accurate to a PFS level of confidence.[632]

288. Second, Mr. Fuller analyzed the CAPEX and OPEX estimates for the processing part of the operation (*i.e.*, the Floating Processing Storage Plant ("**FPSP**")). Mr. Fuller has more than 19 years of experience in the design and analysis of mineral processing operations.[633] Using industry standard estimation techniques, Mr. Fuller prepared an independent estimate of the CAPEX for the FPSP operation, which was 16-28% less than the Boskalis estimate (for Phase I and II, respectively).[634] Mr. Fuller also independently assessed Boskalis' OPEX estimates for the FPSP project and concluded that they are reasonable,

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629 Bryson WS1, ¶¶ 212-13. *See also* Lomond & Hill ER2, ¶ 4.3 (citing WGM ER1, ¶ 41) (noting that WGM refuses to acknowledge the existence of Boskalis' "+/- 25% estimates, which correspond to a PFS level of development"); WGM ER1, ¶ 41 ("The level of accuracy for a PFS is approximately +/- 25%.").

630 Bryson WS1, ¶¶ 31, 84-85, 103-04, 182.

631 ADBP ER1, p. 1.

632 ADBP ER1, pp. 3-6.

633 Lomond & Hill ER1, p. 35.

634 Lomond & Hill ER1, 5.3.1-5.3.3.

except for a discrepancy that Mr. Fuller detected and corrected in Odyssey's [redacted] OPEX projection for Phase II.[635]

289. Third, Dr. Selby also reviewed the cost estimates for the dredging operation in the [redacted] as well as the independent assessment of Dr. Sheehan, based on his own extensive experience in the marine minerals industry. Dr. Selby concluded that "the conservative CAPEX assumption made by Boskalis is more than adequate to account for the mobilisation/demobilisation and full range of modifications that may be required, particularly at PFS level," and that the Boskalis OPEX projections were "reasonable to high."[636]

4. The Market Demand and Price Projections in the DCF Model Are Reasonable and Well-Supported

290. Odyssey prepared the market and price projections in the [redacted] internally based on publicly-available data on the phosphate market, prices, and transportation costs, as well as consultant analysis.[637] Odyssey applied a [redacted].[638]

291. Once again, however, Compass Lexecon did not simply incorporate Odyssey's own price projections in the [redacted] into its DCF model. Rather, Compass Lexecon adopted the more detailed and refined price projections prepared by Dr. Heffernan of CRU, who conducted an independent assessment of the global phosphate market. CRU is arguably the world's foremost consultant for global phosphate markets and pricing, and Dr. Heffernan has over 30 years of experience in this industry, including as the former head of CRU's fertilizer consulting practice (now retired).[639] Working with a team of CRU

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635 Lomond & Hill ER1, 7.3.4-7.3.6 (noting that Phase II would require two FPSPs operating in parallel, while Odyssey's [redacted] assumed the economies of scale of one large FPSP for Phase II, which meant that the OPEX savings per tonne of product for Phase II would be somewhat less than assumed), 7.5.1-7.5.3.

636 Selby ER1, ¶¶ 126-132.

637 **C-0134**, [redacted], 22 September 2015, pp. 8-13; **C-0203**, Transport Cost Analysis for Marine Phosphates, March 2014.

638 **C-0134**, [redacted], 22 September 2015, p. 8.

639 Heffernan ER1, p.1 Heffernan ER2, pp. 1-2.

fertilizer industry consultants and analysts,[640] Dr. Heffernan conducted a comprehensive independent assessment of the market available to Don Diego's products and the prices that those products could command while capturing the necessary market share to absorb Don Diego's supply.[641]

292. Mexico did not call Dr. Heffernan for cross-examination, or present evidence on the fertilizer market from experts in the field. The WGM experts did comment on Dr. Heffernan's analysis in their reports, but as discussed further below, they are not experts on the fertilizer market and phosphate pricing, and their market analysis is riddled with serious errors and not at all persuasive. As a result, the evidence in this case clearly demonstrates that a market existed for the profitable sale of Don Diego's phosphate products and Odyssey would have been able to profitably sell Don Diego's products (including flotation feed product [redacted]).

a. A Market Existed for the Profitable Sale of Don Diego's Phosphate Products

293. Odyssey has demonstrated that a market existed for the profitable sale of the output of the Don Diego Project. Evaluating this question requires assessing the credibility of the expert witnesses that gave evidence on this topic: CRU and WGM. As discussed below, CRU is the world's pre-eminent phosphate market analyst, providing cogent expert reports supporting the marketability of Don Diego's products, while WGM is not an expert in phosphate market analysis and submitted reports containing serious errors, many of which WGM admitted on cross-examination. And notably, Mexico made no effort to challenge CRU's analysis through cross-examination. In these circumstances, the Tribunal should accept CRU's analysis and conclusions, and disregard those of WGM due to its lack of credibility and impartiality.

294. Further, [redacted] was an obvious likely customer for Don Diego's flotation feed product as demonstrated by its ongoing enthusiasm for the Project and its undeniable need for a reliable, low-cost source of phosphate rock. The vague, self-serving claims to the contrary

640 Heffernan ER1, p. 1.

641 Heffernan ER1, pp. 77-95; Heffernan ER2, pp. 12-22.

by two former executives [redacted] should be given little weight—they are unsupported by, and indeed contradicted by, contemporaneous evidence and expert testimony as discussed below.

295. Claimant's phosphate market expert—CRU—is the undisputed global leader in phosphate market analysis and pricing. It performs analysis for "the world's largest phosphate producers, financial institutions, and governments," has "the most comprehensive set of industry data and analysis … across all key geographies," and has carried out "decades of research visits to the mines and plants associated with the phosphate industry's largest and most important suppliers."[642] Mexico has not contested this point, and elected not to challenge CRU's qualifications, analysis or conclusions with cross-examination at the hearing.

296. CRU has accurately analyzed the projected price of Don Diego phosphate rock as of the Valuation Date and has concluded that "due to the cost competitiveness of Odyssey's planned production, all of the phosphate rock produced for the duration of the project could have been placed in the global phosphate rock market."[643] In order to accurately forecast the FOB nominal price for sized rock and flotation feed for both Phase I and Phase II of the Project that Compass Lexecon could use in its DCF model, CRU calculated the "Value-in-Use" ("**VIU**") of the Don Diego phosphate rock by taking into account its chemical characteristics and costs of transport to anticipated markets, comparing these to the industry-standard benchmark characteristics of Morocco K10 phosphate rock, and making price adjustments based on differences in the Don Diego rock.[644] CRU then analyzed how introducing the projected volume of Don Diego's rock production would impact the phosphate market over time and the level of price discounts that would allow

642 Heffernan ER2, pp. 1-2; *see also* Claimant's Reply, ¶¶ 471-488; *see further* Agrifos ER, ¶ 38.

643 Heffernan ER1, pp. 2, 80.

644 As Claimant has noted previously, VIU is important to understanding phosphate market dynamics because differences in the product specifications, such as the percentage of P_2O_5 contained in the phosphate rock, or the percentage of certain impurities, can affect the buyer's production costs or operational productivity in downstream uses, and therefore can affect the amount a buyer is willing to pay for the phosphate rock. *See* Claimant's Reply, ¶ 474. *See also* Heffernan ER1, Section 8; Heffernan ER2, pp. 6-7.

ExO to displace incumbent producers.[645] This thorough, heavily-researched and analytically sound approach embodies CRU's standard of providing "detailed, high-quality, and comprehensive market analysis, underpinned by robust and transparent methodologies."[646]

297. WGM, however, is not by any measure an expert in the field of phosphate market or pricing analysis.[647] Indeed, Mr. Hains, the WGM representative responsible for its market and pricing commentary, sought to conceal his lack of qualifications as an expert at the hearing with repeatedly evasive and non-responsive answers to questions about his professional qualifications.[648] Notably, in a phosphate project technical report issued by WGM as part of its consulting business and co-authored by Mr. Hains, WGM evidently did not consider itself qualified to perform the phosphate market analysis itself; for that task, it turned to the Claimant's expert, CRU.[649]

298. WGM's lack of experience as a phosphate market or pricing expert was on display at the hearing as Mr. Hains gave confused, unconvincing testimony exposing major methodological defects in the WGM analysis behind Table 3 of the first WGM Report,[650] as well as basic arithmetical errors. As CRU has pointed out, WGM's use of average Egyptian phosphate rock prices as the baseline for their discussion of expected Don Diego phosphate rock prices (rather than the higher, industry-standard Moroccan K10 benchmark price) is inappropriate and misleading for several reasons: there is no single, consistent Egyptian rock grade to use as a point of comparison for pricing analysis in the first place, and WGM compounds this problem by cherry-picking two of Egypt's highest-

645 Heffernan ER1, Section 8.4.3, pp. 94-96; Heffernan ER2, Section 2.4, pp. 19-23.

646 Heffernan ER2, p. 1.

647 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1115:1-6, 1118:6-9, 1121:7-10, 1126:18-1127:8. *See also* Agrifos ER, ¶ 24 ("Respondent's expert WGM is a firm with little to no recognition in the phosphate industry, regardless of its other credentials.").

648 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1126:18-1127:8 (for the third time, ". . . Q. (Ms. Thorn) Are you holding yourself out as an expert in the field of phosphate market analysis, forecasts, and phosphate price assessments? A. (Mr. Hains) I repeat my answer, that I have extensive experience in those fields.").

649 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 104 (PDF p. 109) (relying on "[t]he recent independent CRU International Limited ('CRU') market review" prepared for the project).

650 *See* WGM ER1, ¶ 92, Table 3.

quality rock products from a single producer, MCC (which is not a representative sample) and then assigning those specifications to CRU's average export price for all Egyptian rock, which is generally of much lower quality.[651] This manipulation artificially lowers the baseline price estimate that WGM assigns to Don Diego phosphate rock, because it associates low-grade average rock prices with higher-grade rock similar to the [redacted] Don Diego rock product.

299. At the hearing, Mr. Hains readily agreed with CRU that Moroccan K10 phosphate rock "is used as the industry benchmark,"[652] and denied that he had made adjustments to the "Egyptian indicative prices" before ultimately admitting that he had, testifying: "Yeah, sorry, I'm mistaken. Yeah, I was a bit confused there, yeah."[653] When confronted with the fact that he was inappropriately attributing selected high-grade MCC phosphate rock characteristics to CRU's average Egyptian indicative prices, Mr. Hains admitted he was using the "highest grade products that MCC produces."[654] Nonetheless, he claimed numerous times that his selected high-grade MCC rock was representative of average Egyptian phosphate rock[655] before ultimately acknowledging that he did not know whether this was true, testifying that CRU "may be correct" that his selected high-grade rock was "far from representative of the typically much lower grade Egyptian phosphate rock exports," and that he has "no basis of saying that they are incorrect or correct."[656]

300. Mr. Hains also made basic mathematical errors when further discounting the artificially low Egyptian baseline price he used for Don Diego rock—errors which had the effect of lowering his estimated prices even more. On cross-examination, when the calculations were performed in front of him, he first insisted "[n]o, no, you don't get that, actually"

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651 Claimant's Reply, ¶¶ 476-478; Heffernan ER2, pp. 6-11. *See also* Agrifos ER, ¶ 38 ("Agrifos is not familiar with any case where Egyptian phosphate rock prices were used as commercial reference for a long-term contract for rock from another origin."); Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1308:2-7 ("Egyptian rock . . . it's a benchmark that absolutely nobody in the industry would rely on for pricing any product from any place other than Egypt, and that's a function of the fact that Egyptian rock is highly variable in quality.").

652 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1133:21-22.

653 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1140:19-20.

654 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1149:3-13.

655 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1149:14-1152:17.

656 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1152:21-1153:8.

before realizing his errors and accepting that "[y]eah, we should correct the Report"—which would make the estimated prices for Don Diego sized product and flotation feed five dollars higher per tonne than WGM calculated in its reports.[657]

301. Likewise, Mr. Hains also dissembled about the source of his indicative price for Egyptian flotation feed.[658] Acknowledging that he failed to identify his source in WGM's first expert report,[659] he suggested that the source "was from looking at the charts that CRU provided,"[660] before changing his answer to say "I probably used the Egyptian—that export price to India" from two phosphate rock shipments to India in November 2016.[661] After accepting he had misstated the date of one of these shipments by a year in the WGM expert report,[662] Mr. Hains insisted they were "representative of traded prices"[663] even though he admitted he did not have access to trade price data[664] and did not dispute that: (i) there was no information on product grade for one shipment and the product grade for the other was lower than Don Diego flotation feed;[665] (ii) November 2016 was the lowest point for phosphate prices that year;[666] and (iii) those two shipments constituted only 0.14 percent of Egyptian phosphate exports that year.[667]

302. Choosing two non-representative spot shipments from Egypt to India from a point when the market was at its lowest price in the year to derive an indicative price for Don Diego phosphate flotation feed, and then failing to document this method in its expert reports or to be forthcoming about it on cross-examination, raises grave concerns about WGM's

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657 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1143:8-1144:14.

658 *See* WGM ER1, ¶ 92, Table 3.

659 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1158:1-3 ("Q (Ms. Thorn) You don't explain that or footnote that here, do you? A. (Mr. Hains) No, I do not.").

660 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1157:16-17.

661 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1158:4-12.

662 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1158:10-11 ("No--yeah--okay--I stand corrected.").

663 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1161:8.

664 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1161:9 ("trade data was not available to myself").

665 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1160:3-15.

666 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1160:16-21. *See also* Heffernan ER2, p. 10 ("The two shipments arrived in India a day apart at the end of November 2016 when prices had reached their lowest point of the year based on CRU's published price reports in 2016.").

667 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1160:22-1161:3. *See also* Heffernan ER2, p. 10 ("Combined, these sales represent just 0.14% of Egyptian exports over the course of that year and neither price is in any way representative of Egyptian rock prices over the course of 2016.").

competence, impartiality and professionalism. Either WGM truly believes such an approach is methodologically valid, in which case it reflects gross incompetence, or WGM knowingly used non-representative samples to reverse-engineer the lowest possible price estimate, in which case its bias and lack of professionalism are plain.

303. These deficiencies addressed on cross-examination are just some of the many critical flaws in WGM's discussion relating to pricing and marketability, including: (i) incorrectly dividing the global phosphate market into rigid grade categories in order to grossly exaggerate the market share that the Don Diego Project would need to capture;[668] (ii) assuming an arbitrary and unsupported flat percentage price discount for market entry rather than using a delivered cost analysis as CRU did to methodically identify the discounts that would be required to displace specific high-cost producers;[669] and (iii) inappropriately reducing the estimated price for Don Diego phosphate rock due to an assumed, but unsupported, [redacted].[671]

304. Under these circumstances, WGM's expert opinions should be disregarded as not credible. In contrast, CRU's expert analysis is thorough, professional and unbiased, and clearly demonstrates that Odyssey, through ExO, would have been able to profitably sell Don Diego's phosphate rock output.

5. [redacted] Was a Likely Customer for Don Diego's Flotation Feed Product

305. [redacted] was a likely customer for Don Diego's flotation feed product. The evidence demonstrates a serious, sustained interest on the part of [redacted] that

668 WGM ER 1, ¶¶ 99-100; Heffernan ER2, pp. 13-19

669 WGM ER1, ¶ 92, Table 3, line 14; Heffernan ER2, pp. 11 (value-in-use and market entry are separate analyses), 18-20.

670 WGM ER1, ¶ 92, Table 3, line 12.

671 **C-0087**, Boskalis, [redacted], 18 June 2014, pp. 13, 20; Bryson WS1, ¶¶ 109-110; Hrg. Day 2 Tr., Testimony of Craig Bryson, 25 January 2022, pp. 396:22-402:12 (Mr. Bryson confirming the [redacted] and adding that they were "very conservative" due to the fact that they were conducted on a full particle range, including fine clays that would not be present in the separated Don Diego phosphate rock products).

is corroborated by objective, technical information confirming that [redacted] would have derived obvious benefits from this product. Mexico's only effort to counter this evidence consists of vague, self-serving denials [redacted] that are wholly unsupported.

306. Mr. Gordon provided detailed evidence[672] supported by extensive contemporaneous documentation[673] demonstrating that [redacted] consulted with the Project Qualified Person, Henry Lamb, to obtain information about the Don Diego Project,[674] held numerous senior-level meetings between July 2014 and February 2016, advised Odyssey on its MIA application, requested in 2017 several deposit samples for testing which confirmed that the Don Diego product was of high quality and suitable for use at [redacted] processing plant, and proposed different forms of joint ventures with Odyssey. This interest continued even as [redacted], and even after the MIA was denied, when there were moments of hope that the decision would be reversed.[675] As Mr. Gordon's testimony and the associated documentary evidence demonstrates, [redacted], only months before SEMARNAT made good on its declaration that it would deny the MIA for a second time.[676]

672 Gordon WS2, ¶¶ 4-39; *see also* Gordon WS1, ¶¶ 60-67.

673 [redacted]

674 [redacted]; *see also* Gordon WS2, ¶¶ 36-39.

675 Gordon WS2, ¶¶ 36-37.

676 Gordon WS2, ¶¶ 37-38; [redacted]

307. Technical experts also confirm that [redacted] in the Don Diego Project made eminent sense from a commercial perspective. For instance, Mr. Lamb confirmed [redacted] that Don Diego phosphate ore was compatible with [redacted].[677] Similarly, Mr. Gruber, who has personally paid visits [redacted] discusses in great detail how Don Diego phosphate rock would have been an ideal replacement [redacted].[678] Likewise, CRU and Agrifos confirm this analysis based on their own knowledge [redacted].[679] This expert evidence squares with the feedback Mr. Gordon and his team received [redacted], and shows that if the Don Diego Project had been permitted to proceed to operations, [redacted] was highly likely to become a customer.[680]

308. Against the weight of this evidence, Mexico has provided the unsupported witness statements of [redacted][681] [redacted] is apparently unable to recall a meeting does not mean that the recollections of Mr. Gordon about that meeting, which are supported by

677 [redacted]; see also Gordon WS2, ¶¶ 36-39.

678 Gruber ER2, pp. 8-10.

679 Heffernan ER2, pp. 20-21; *see also* Heffernan ER1, pp. 2-3, 77-78; Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, pp. 1308:16-1309:2 ([redacted]").

680 Gordon WS2, ¶¶ 33, 36-37, 39.

681 [redacted]

contemporaneous e-mail documentation describing it, are "false." Moreover, it is notable that [redacted].[684]

309. [redacted]

682 Gordon WS2, ¶ 26.
683 Gordon WS2, ¶ 29.
684 Gordon WS2, ¶ 33.
685 Hrg. Day 3 Tr., [redacted], 26 January 2022, pp. 624:5-632:16 (Spanish Tr.), pp. 548:2-552:7 (English Tr.); [redacted], dated 29 September 2021 [redacted] ¶ 4.
686 [redacted]
687 [redacted]

310. [redacted]

311. [redacted]."[691]

312. But this is not a relevant or useful comparison, because "the rock available in the international market," *i.e.* from Morocco, is a finished product that has already been sized and floated to achieve a P_2O_5 content of above 28% for use in phosphoric acid plants, [redacted]

688 [redacted]

689 Hrg. Day 3 Tr., [redacted] 26 January 2022, pp. 636:17-637:8 (Spanish Tr.), p. 556:8-21 (English Tr.); **C-0422**, Business Cards collected by C. Lozano.

690 [redacted] Hrg. Day 3 Tr., [redacted] 26 January 2022, pp. 640:13-642:1 (Spanish Tr.), pp. 560:3-561:12 (English Tr.).

691 [redacted]

[redacted].[696]

313. Ultimately, it is clear that a market existed for the profitable sale of the output of the Don Diego Project—this is supported by the in-depth, highly credible analysis of the world's leading phosphate market analyst, CRU, and the documented facts on the ground [redacted] Neither the methodologically defective and results-driven opinion of WGM (who is not, in any event, a qualified expert in phosphate market analysis), nor the bare-bones and questionable witness statements [redacted] can alter this conclusion.

6. The Discount Rate in the DCF Model Is Reasonable and Well-Supported

314. Compass Lexecon applied a discount rate of 13.95% to Don Diego's Phase I cash flows, and a discount rate of 15.95% to Don Diego's Phase II cash flows, as illustrated in the following figure from their hearing presentation:[697]

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692 Gordon WS2, ¶¶ 29-30; **C-0424**, [redacted], 22 August 2017.

693 Gordon WS2, ¶¶ 30-32.

694 Gordon WS2, ¶¶ 31-21; **C-0425**, [redacted] 8 September 2017; **C-0426**, [redacted] 22 September 2017.

695 Gordon WS2, ¶ 32.

696 Hrg. Day 3 Tr., [redacted] 26 January 2022, p. 648:14-22 (Spanish Tr.) ("[redacted]").

697 **CD-0005**, Expert Presentation of Compass Lexecon, p. 9.

315. As Dr. Spiller explained at the hearing, Compass Lexecon's discount rate has two components. First, they derived a discount rate for an operating mine in Mexico (10.45%) using the standard "build-up" method based on the Capital Asset Pricing Model.[698] Dr. Flores quibbles on the margin with some aspects of this calculation, but he ultimately uses the same 10.45% discount rate for an operating mine in his sensitivity analysis.[699]

316. Compass Lexecon then adds a premium to the discount rate to account for the additional risk arising from the fact that Don Diego was not yet operating on the Valuation Date, of 3.5% for Phase I and 5.5% for Phase II.[700] As Dr. Spiller explained at the hearing, Compass Lexecon derived those risk premiums from a study performed by the Canadian Institute of Mining, Metallurgy and Petroleum of three different surveys of the discount rate premiums that market participants apply to projects in different stages of development.[701]

317. In contrast, Dr. Flores proposes a discount rate of nearly 26%, around double the discount rate that Compass Lexecon calculated for Phase I. While Quadrant begins with the same base discount rate of 10.45% for an operating mine in Mexico, Quadrant adds a pre-operational premium of 13.25% (nearly four times the premium applied by Compass

698 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, p. 1414:4-12.

699 Quadrant ER1, ¶¶ 151-152.

700 Compass Lexecon ER1, ¶ 90(b).

701 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1414:13-1415:15, citing **CLEX-0037**, Smith, Lawrence D., MES Survey of Evaluation Practices in the Mineral Industry, CIM Management & Economics Society, p. 3; *see also* Compass Lexecon ER1, ¶ 90.

Lexecon for Phase I), and a premium for illiquidity. There is no factual or logical basis for either of these numbers, which seem transparently designed to arbitrarily increase the discount rate in order to radically reduce the value of the Don Diego Project. First, Dr. Flores' premium for pre-operational risk rests on the erroneous premise that Don Diego was at the exploration stage and would use novel technology. Neither assertion is true. As already extensively discussed, on the Valuation Date the Project had reached a PFS level of confidence, equivalent to a Development (or at least Pre-development) stage in the project life cycle. Further, as discussed above in Section VI.D.2-3, the Project would have employed proven and well-established technology and had cleared all regulatory hurdles (but-for the unlawful denial of the MIA).[702] Thus, there is no valid factual basis for Dr. Flores' risk premium.

318. More egregiously, however, Dr. Flores did not simply use a baseless risk premium; he took that premium and averaged it with a much higher figure he found in a short, seven-page article authored by a PhD student.[703] As Compass Lexecon discusses in its Second Report,[704] the author's aim appears to be providing an illustration of the discount rate methodology generally, rather than an empirical study of discount rates in the mining industry. The specific risk premiums that Quadrant cites appear to be taken from "class notes on a (now deleted) website published by [another person], who seems to have been a teaching assistant at the University of California-Berkeley Haas School of Business at the time."[705] Accordingly, there is "no indication that these figures are related to the mining industry, or to any industry for that matter, and hence they do not have the necessary scientific or practical foundation to be relied upon for cost of capital computation."[706] In addition to the highly questionable source material, Quadrant compounds its error through double counting. Specifically, Quadrant adds the pre-operational risks for an

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702 Compass Lexecon ER2, ¶¶ 91-92. *See also* Kunz ER1, ¶¶ 9-10; Kunz ER2, ¶¶ 16-33.

703 Quadrant ER1, ¶ 220; **QE-0050**, Mohsen Taheri, Mehdi Irannajad, and Majid Ataee-Pour, "Risk-adjusted discount rate estimation for evaluating mining projects," The FINSIA Journal of Applied Finance, Issue 4, 2009, p. 40.

704 Compass Lexecon ER2, ¶¶ 93-97.

705 Compass Lexecon ER2, ¶ 94.

706 Compass Lexecon ER2, ¶ 94.

early exploration project (which, discussed above is the wrong project stage) and the risks for "adding a new project to an existing complex" (which the article does not explain, and on its face, would not apply to the Project).[707]

319. Notably, Dr. Flores did not say a word about the discount rate calculation during his presentation at the hearing. Claimant's counsel did not mince words on this issue during Claimant's opening presentation:[708]

> It is transparently obvious that the purpose behind averaging the already inflated Risk Premium derived from the survey evidence with this highly dubious figure from a teaching note, was simply to drive the Risk Premium up by nearly 700 basis points. But I would submit that if there were any serious basis for Dr. Flores to dispute the survey evidence from which the Compass experts derived their pre-operational Risk Premiums, he would have presented something better than this.

320. The fact that Dr. Flores had nothing to say on this issue during his subsequent presentation is clear confirmation that he has no response, and his calculation of the discount rate, therefore, is unsupported and unreliable.

321. Finally, Dr. Flores' illiquidity premium is similarly inappropriate for two different reasons. First, Dr. Flores justifies the premium as necessary to account for the supposed time and difficulty of selling a privately-held asset.[709] As Compass Lexecon explains, however, the logic underlying that position runs counter to one of the basic principles of FMV, namely that neither party is assumed to be under any compulsion (or time constraint) to engage in the transaction.[710]

322. Indeed, the International Valuation Standards that Dr. Flores himself uses make this point very clearly. Those standards explain that the definition of "market value"—which Dr.

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707 Quadrant ER1, ¶ 220; **QE-0050**, Mohsen Taheri, Mehdi Irannajad, and Majid Ataee-Pour, "Risk-adjusted discount rate estimation for evaluating mining projects," The FINSIA Journal of Applied Finance, Issue 4, 2009, p 41. *See also* Compass Lexecon ER2, ¶ 95.

708 Hrg. Day 1 Tr., Claimant's Opening Presentation, 24 January 2022, pp. 86:15-87:3.

709 Quadrant ER, ¶¶ 153-155.

710 Compass Lexecon ER2, ¶¶ 98-99. It is also inapplicable on its face to the Project since "potential buyers for the Don Diego Project would be able to acquire ownership through OMEX shares, which would not demand an illiquidity discount." Compass Lexecon ER2, ¶ 100.

Flores confirmed to be consistent with the FMV standard applicable in this case[711]—is defined by a series of principles that further elucidate the concept.[712] Among others, those principles clarify that (i) that the hypothetical willing seller is "neither an over-eager nor a forced seller prepared to sell at any price"; (ii) the sale is presumed to occur "after proper marketing," which means that the asset has been "exposed to the market in the most appropriate manner to effect its disposal at the best price reasonably obtainable"; and (iii) that the "exposure period occurs prior to the valuation date."[713] In other words, the FMV standard seeks to determine the full value of the asset, not the value that can be obtained in a rushed fire sale, and thus Dr. Flores' illiquidity premium in the discount rate is unjustified.

323. Moreover, Dr. Flores' illiquidity premium also lacks any supporting evidence as it is based on an analysis of "size premiums" observed in the stock prices of U.S. companies. As Compass Lexecon has explained, this is misguided in at least two ways. First, the use of a size premium as a proxy for an illiquidity premium has been criticized in the economic literature for being unreliable.[714] Second, Dr. Flores also double-counts risks because the country risk premium applied by Compass Lexecon (2.48%) already accounts for the fact that the Mexican market is smaller than the U.S. market.[715]

324. In summary, the discount rates that Compass Lexecon applies are appropriate to address the uncertainty in the production and cost assumptions that arise from the fact that Don Diego was not yet in operation, and was still at a PFS level of development. As Dr. Spiller explained at the hearing, by adding a pre-operational risk premium to the discount rate, together with the risk adjustment to the Resource estimate to account for the lower probability that Mineral Resources (as opposed to Reserves) would translate into

711 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, p. 1546:18-21.

712 **QE-0090**, International Valuation Standards Council, "International Valuation Standards – Effective 31 January 2020," p. 18.

713 **QE-0090**, International Valuation Standards Council, "International Valuation Standards – Effective 31 January 2020," p. 19.

714 Compass Lexecon ER2, ¶ 101.

715 Compass Lexecon ER2, ¶¶ 100-102.

production, Compass Lexecon's DCF model conservatively reduced the value of Don Diego by more than 57% (from [redacted]).[716]

7. Compass Lexecon's ROV for Phase II is Reasonable and Well-Supported

325. Compass Lexecon's ROV analysis for Phase II is similar to its DCF analysis for Phase I, but it also seeks to quantify the additional value of the managerial flexibility arising from the fact that Odyssey was under no obligation to embark on Phase II, and would not need to make that decision until after it had gleaned useful information about Don Diego from Phase I.[717] An option gives its holder the right to purchase a specific asset at a specified price at a specified date.[718] A buyer pays a price for this right, which constitutes the FMV of Phase II.[719] Compass Lexecon's ROV valuation for Phase II amounts to [redacted].[720]

326. As already discussed, the foundation for Compass Lexecon's ROV valuation of Don Diego Phase II is a DCF model, which provided the value of the "underlying asset" in the ROV analysis. Therefore, the main cash flow inputs into the ROV valuation are robust and reliable for the same reasons as in the DCF valuation for Phase I, discussed above. Additionally, Compass Lexecon applied a higher discount rate in the DCF model for Phase II, reflecting the additional risk arising from the fact that the operational plans for Phase II were less well-developed than for Phase I at the Valuation Date.[721]

327. Apart from his general disagreement with using any Income Approach (discussed above), Dr. Flores did not even mention Compass Lexecon's ROV valuation during his direct presentation at the hearing. Consequently, Odyssey relies on Compass Lexecon's evidence regarding this valuation in its expert reports and at the hearing.[722]

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716 **CD-0005**, Expert Presentation of Compass Lexecon, p. 16.
717 Compass Lexecon ER1, ¶ 113
718 Compass Lexecon ER1, ¶ 114.
719 Compass Lexecon ER1, ¶ 114.
720 **CD-0005**, Expert Presentation of Compass Lexecon, p. 3.
721 Compass Lexecon ER1, ¶ 90(b).
722 Compass Lexecon ER1, Section VI, pp. 47-58; Compass Lexecon ER2, Section III.2, pp. 29-35; **CD-0005**, Expert Presentation of Compass Lexecon, p. 32.

E. Agrifos' Comparable Transactions Method Valuation Is Reasonable, Reliable, and Confirms Compass Lexecon's DCF and ROV Method Valuation

328. Agrifos, an experienced phosphate project owner, operator and investor with decades of experience buying and selling such projects, has valued the Don Diego Project independently using the Comparable Transactions method. As discussed below, this approach offers robust support that corroborates Compass Lexecon's DCF valuation while demonstrating that Quadrant's valuation using the Market Capitalization method is patently unreasonable.

329. The hearing confirmed that Agrifos has extensive experience as a participant in the phosphate industry, including owning and operating phosphate and fertilizer projects, commercial matters such as buying or selling phosphate rock and phosphate fertilizers, project financing and approximately [redacted] in transactions buying or selling phosphate projects.[723] As such, it is deeply familiar with the valuation methods employed by parties in real-world transactions for phosphate projects and assets around the world.[724]

330. Agrifos' Market valuation using the Comparable Transactions method is straightforward, methodologically sound, and informed by industry experience and practice: it examines nine comparable transactions and public companies with phosphate resource projects from around the time of the Valuation Date in order to derive the value per metric tonne of contained phosphate in each underlying resource,[725] evaluates whether there were factors (positive and negative) that would drive a higher (or lower) value for Don Diego phosphate when compared with these resources, and then applies the resulting value to Mr. Lamb's estimate of [redacted] of contained P_2O_5 in the Don Diego resource (derived from [redacted]).[726]

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723 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, pp. 1273:21-1275:15; **CD-0004**, Expert Presentation of Agrifos, p. 2. *See also* Agrifos ER, Appendix A, pp. 38-39.

724 **CD-0004**, Expert Presentation of Agrifos, p. 2. *See also* Agrifos ER, Appendix A, pp. 38-39.

725 Agrifos ER, ¶ 13.

726 Agrifos ER, ¶ 17.

331. Using this approach, Agrifos concludes that had the MIA been granted, the value for Don Diego phosphate would have been [redacted] of P_2O_5 for an estimated Project value of between [redacted].[727] As Agrifos explains, this estimate accounts for Don Diego's clear operational advantages compared to other phosphate mining operations, including its "very advantageous position" for material handling,[728] "[t]he high P_2O_5 content of the ore,"[729] "simple mechanical beneficiation,"[730] a sandy granulometry that is "just about ideal from a material handling point of view,"[731] and a "very low stripping ratio" that is "considerably lower than typical terrestrial mines,"[732] all of which leads to a material handling ratio that is "exceptional"[733] and an "extremely low cost compared to the industry and compared to other projects at the time."[734] These advantages were in addition to its "world-class,"[735] "very large,"[736] "continuous and homogenous" orebody[737] and its "very credible counter-parties" including "Boskalis, Jacobs, [and] Henry Lamb."[738]

332. Respondent's critiques of Agrifos' approach are unfounded.[739] First, Respondent's criticism of the Agrifos Report for not including documentation of the prices underpinning its comparables analysis is unavailing because the transactions are described in detail in the Report and all but one of those transaction values are publicly available, common knowledge in the industry, and easily verifiable—indeed, Respondent does not ultimately

727 Agrifos ER, ¶ 21.
728 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1293:10-11.
729 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1293:15.
730 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1293:19-20.
731 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1290:12-13.
732 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1291:8-16.
733 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1295:20.
734 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1302:6-8.
735 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1309:3.
736 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1292:5-9.
737 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1291:19.
738 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1313:7.
739 Although Respondent has alluded to objecting to the timing of Agrifos' Expert Report (*see* Respondent's Rejoinder, ¶ 696), it has not pursued any remedies such as requesting the exclusion of the report from the arbitral record and has not suffered any prejudice in any event. Indeed, Respondent availed itself of the opportunity to respond substantively to the Agrifos Expert Report in its Rejoinder Memorial and in Rejoinder Expert Reports from Quadrant and WGM, and Respondent affirmatively called Agrifos for cross-examination at the Hearing.

claim that any of those figures are incorrect.[740] As to the one non-public transaction value Agrifos uses as a comparable, Hinda,[741] Agrifos detailed at the hearing the context surrounding its acquisition of this information and it is consistent with other comparables Agrifos has identified.[742]

333. Although Respondent and its experts attempt to argue that the two closest comparables that Agrifos uses in estimating Don Diego's value—Baobab and Hinda—are not similar to Don Diego, these arguments actually confirm the strength of Claimant's position. For example, Quadrant highlights the fact that Baobab had a lower estimated CAPEX than Don Diego, and began production within a year of the January 2016 transaction in question.[743] But as Quadrant should know, it is meaningless to look at CAPEX in isolation without also considering estimated OPEX to understand the overall estimated project costs[744]—and when they are considered together, as Agrifos notes, "Don Diego stands out as by far the lowest cost operation."[745] Agrifos also accurately points out that "when the Baobab transaction took place, it did not have a Reserve estimate, it did not have a PFS, or a Feasibility Study, an EPC, Operating Agreements or an Off-Take Agreement," but

740 Agrifos ER, Appendix C; Hrg. Day 6 Tr., Testimony of Agrifos, 29 January 2022, p. 1386:11-19 ("[W]e provide the clear references to the Projects, to the Transactions we were using in one of the appendices of our Report. I mean, we certainly weren't trying to hide anything, and that information was all available publicly by, you know, Google searching or looking at appropriate securities exchange databases. There is nothing--nothing magical in assembling that information.").

741 *See* Respondent's Rejoinder, ¶ 703; WGM ER2, ¶ 102; Quadrant ER2, ¶ 260.

742 *See* Agrifos ER, ¶¶ 54, 61 ([redacted]).

743 *See* Respondent's Rejoinder, ¶ 702; Quadrant ER2, ¶¶ 257, 259.

744 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, pp. 1301:6-1302:4 ("I think there was an observation by someone that the Capital Costs at Baobab were lower than Don Diego. Well, yes, that's true as you see here in our Report, but I'm surprised that that point hasn't been further extended to consider Operating Costs because, of course, you need to consider both together to have any kind of sensible economic evaluation, and of course Don Diego's Operating Costs are much lower. And that's, in fact, why in our Report we created this sort of cost index that's explained in our Report, and I'm not going to repeat the explanation unless somebody has a question, but essentially at 100 it's just an index, it's not an absolute value. At 100, Don Diego stands out as by far the lowest cost operation. And in fact, if you add the 25 percent, sort of margin of error to CAPEX and OPEX, you would simply bump that 100, that index value of 100 up to 125, and it would still be, by far, the lowest cost operation compared to the comparables that we selected.").

745 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, pp. 1301:6-1302:4.

"[i]t had an identified resource" and plans to exploit it—just like Don Diego.[746] As such, Baobab was at a very similar development stage to Don Diego at the time of the transaction, revealing it not only to be a good comparable, but critically disproving WGM's and Quadrant's superficial arguments that phosphate projects without a formal PFS or market study, or offtake agreements, are necessarily remote from development and operations.[747] Indeed, as Agrifos made clear at the hearing, among all nine comparables, "none of the Projects provided bulk samples, none had announced off-takes, none had arranged financing, yet all of these projects had value."[748]

334. Likewise, Quadrant's observation that, as of 2021, Hinda had not yet commenced production[749] actually supports Claimant's argument because, as Agrifos notes, it demonstrates that pre-operational mines can attract significant value in the marketplace.[750]

335. For WGM's part, much like its fundamental errors in other areas of its reports, several of its criticisms of Agrifos are wrong on their face and continue to seriously undermine WGM's credibility as a purported expert. For example:

- WGM is plainly wrong about the size and grade of the NI 43-101 Resource estimate as of the Valuation Date.[751] Agrifos' inclusion of the Northern Extension resource volumes in the total resources it considered for its comparables valuation was

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746 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, pp. 1282:9-1283:1. *Contra also* Respondent's Rejoinder, ¶ 706 (citing WGM ER2, ¶ 99, contending that while Agrifos assumes an existing market for Don Diego phosphate, no formal market analysis had been performed or letters of intent obtained).

747 Quadrant's argument that in 2016 CRU had classified Baobab as "firm" while classifying Don Diego as "speculative" has already been addressed by CRU, which stressed that its classification of Don Diego was not a reference to the potential competitiveness or feasibility of the Project, but rather based on insufficient public information coupled with the lack of an environmental permit. *See* Heffernan ER2, pp. 23-24.

748 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, pp. 1302:21-1303:2.

749 Quadrant ER2, ¶ 261.

750 Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1283:10-20 ("Quadrant observes that Hinda had yet started mining in the 2016, and that's true. I guess, our comment there would be notwithstanding that Hinda was highly valued by investors, and I think that goes to support the point that projects at this general stage of development can attract significant value. Doesn't really matter what label you want to attach to it. If the projects are advancing as Don Diego was advancing and have good ore characteristics and other things that we'll talk about, then they can attract significant value.").

751 Respondent's Rejoinder, ¶¶ 704-706; WGM ER2, ¶ 99.

entirely appropriate, because Henry Lamb included the Northern Extension in his figures as of August 2014.[752]

- WGM's allegation that Agrifos held management or ownership interests in GB Minerals and Aguia Resources, and that they were improper to use as comparables[753] is also demonstrably wrong. WGM likely confused "Agrifos" with "Itafos," a completely different entity.[754] When this was brought to WGM's attention on cross-examination, Mr. Hains repeatedly insisted it was "not explicit but contained within the references," but was unable to point to any support for this in the WGM reports or exhibits.[755]

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752 **C-0223**, Don Diego West Resource Estimate With Northern Extension, 21 August 2014. *See also* Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, pp. 1309:18-1310:5 ("About Don Diego specifically, what we assumed, . . . is that we included the northern extension in our Report. I think there was an objection from, I believe, WGM to that because it was supposedly not in evidence as the Valuation Date. That's not true. Henry Lamb's northern extension figures were available in 2014 as far as I recall. If not 2014, then certainly 2015, well before 2016."). Moreover, as Agrifos has explained, including Inferred Resources in a comparables valuation is absolutely routine and replicates how experienced market participants would approach such a valuation. *See, e.g.*, Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1305:1-8 ("Of course we pay attention to the distinctions. We understand the distinctions. But we and others are fully capable of parsing Resources and Reserves into their appropriate buckets and thinking about how to use those in an economic analysis, and that includes Inferred Resources. We absolutely would consider Inferred Resources in an analysis."); Hrg. Day 6 Tr., Testimony of Agrifos, 29 January 2022, p. 1378:6-19 ("Q. (Mr. Barragán) Okay. Your valuation analysis does consider a significant proportion of Inferred Resources; correct? A. (Mr. Cotton) For both Don Diego and all the other projects, that's correct. I mean, I would simply say that the fact that NI 43-101 reports are not allowed to use Inferred Resources, is not a barrier to transaction counter-parties actually using them. And in my experience, they do use them all the time, so I appreciate the rigidity of the reporting guidelines, you know, prevents Mr. Lamb from commenting on their economic value or WGM or people trying to produce reports like this, but that's not how the practice actually takes place in the marketplace."). *Contra* Respondent's Rejoinder, ¶ 705; Quadrant ER2, ¶ 263.

753 WGM ER2, ¶ 101.

754 *See, e.g.*, **WGM-47**, GB Minerals Limited, Press releases dated Nov 28, 2017, and February 23, 2018, p. 5 (referencing "Itafos," not "Agrifos"); Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, pp. 1283:21-1284:10 ("WGM observed that Agrifos--or its associates had equity or management interests in GB Minerals and Aguia resources. I'm not sure where that--how they came to that conclusion. It's absolutely incorrect. None of the Agrifos principals, or employees for that matter, have ever had any interests of any kind--equity, ownership, management, directorships of any kind--with those two entities. If there was confusion with Itafos, a totally different company, then I would say the same is true of Itafos. We've never had any of those kind of associations with Itafos either.").

755 Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, pp. 1165:20-1166:12.

- WGM also mistakenly identifies [redacted][757]

- WGM fundamentally misunderstands Agrifos' analysis in valuing public companies. WGM accuses Agrifos of valuing additional loans or equity investments from existing shareholders in relation to Aguia Resources' Tres Estradas project and Arianne Phosphate's Lac a Paul project,[758] while in actuality, Agrifos used those companies' publicly traded share prices on the Valuation Date to ascertain their value.[759]

336. Finally, the premiums Agrifos used when estimating the value of the Don Diego Project are reasonable, if not conservative. The control premium Agrifos added to minority transactions to create parity with majority acquisitions is uncontroversial and logical, and quantitatively, the 30% control premium Agrifos included is indeed reasonable based on Agrifos' extensive experience in the industry.[760] Quadrant also does not take issue with the fact that Agrifos made upward adjustments of 20-30% to its low and high value estimates for Don Diego based on well-documented, specific advantages the Don Diego Project had over comparables such as Baobab and Hinda—Quadrant merely questions

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[756] WGM ER2, ¶ 103 ("Investigation of the details of the transaction indicates the transaction was an option agreement for a minority interest in an early-stage exploration, not an acquisition or equity investment in the project and should therefore not be considered a comparable transaction.").

[757] [redacted] *See also* Hrg. Day 5 Tr., Testimony of WGM, 28 January 2022, p. 1283:2-9.

[758] WGM ER2, ¶ 104.

[759] Agrifos ER, ¶ 61 ("Enterprise value implied by the average share price in April 2016"); Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1284:13-17 ("[T]hat misunderstands our analysis, as I just noted a few slides ago. For Aguia resources and Arianne, we used their publicly traded Share Price as of April 2016 and not some specific investment or per--or other transaction.").

[760] Hrg. Day 6 Tr., Testimony of Agrifos, 29 January 2022, pp. 1384:21-1385:22 ("Agrifos has been involved in many, many transactions in phosphates and in industries besides phosphates, and we have seen a lot of—we've just been involved in a lot of transactions, and some of those were controlled transactions and some of them were not. Valuations were often presented, and there is very consistently applied a Control Premium or in some cases, a minority discount, if you're going in the other direction, to reflect control or lack of control. It's very consistent. Now, the range of percentages varies a lot. I have seen it down at 20 percent, then I've seen it as high as 50 percent, and I have seen a lot of numbers in between. We selected 30 percent for Don Diego as being a reasonable number, not at the top of the range, not at the bottom of the range. I think that control of a phosphate Project is significant because it gives you decision-making over where that phosphate may go, how it's going to be deployed in the marketplace, mining strategies, product grades. It's significant to have control over a phosphate Project, perhaps more than in some other companies, so that's the origin of our 30 percent.").

the amount of the premium and describes it as "subjective."[761] But as Agrifos has noted, this qualitative approach is necessary when using a comparables valuation method,[762] and its conservatism is clear in light of the substantial advantages the Don Diego Project had in comparison to the comparables.[763] It is further confirmed by its proximity at approximately [redacted] below the DCF valuation,[764] which approach, as Agrifos has noted, is well-suited to quantifying premiums in specific projects.[765]

337. Indeed, comparing Agrifos' estimated range of value for Don Diego phosphate to the overall average of all comparables reinforces the reasonableness of Agrifos' approach to premiums. As Agrifos states: "[redacted]."[766]

338. Moreover, it is telling that even when Quadrant inappropriately removes the premiums Agrifos added to the comparables for a control transaction and the clear advantages Don Diego held over its comparables, and also removes the Northern Extension volumes that QP Henry Lamb had already validated and classified—the comparables analysis ***still*** produces a valuation of [redacted].[767] This emphasizes the sheer unreasonableness of

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761 Quadrant ER2, ¶ 265.

762 Hrg. Day 6 Tr., Testimony of Agrifos, 29 January 2022, p. 1365:1-3 (noting when asked about the lack of weights assigned to individual qualitative factors that one cannot "force a quantitative approach on what was inherently a qualitative matter").

763 Agrifos ER, ¶ 69; Hrg. Day 5 Tr., Testimony of Agrifos, 28 January 2022, p. 1311:4-17 ("We believe for all of the qualitative reasons I've described, that Don Diego deserved a premium to the other Projects. The biggest drivers--or certainly among the biggest drivers--certainly it's very strong cost position, and we, based on our experience, applied a 20 to 30 percent premium. I would frankly consider that conservative. We decided not to try to inflate the value by putting some very large premium but I do think that Don Diego's favorable characteristics certainly justify a premium, and I think that our value is, if anything, conservative. And I think that's validated because it really leaves Don Diego very close to the average of all nine projects").

764 Claimant's Reply, ¶ 552.

765 Hrg. Day 6 Tr., Testimony of Agrifos, 29 January 2022, p. 1364:2-5 ("[T]he whole point of a DCF Analysis, frankly, is to kind of capture, in a very quantitative way, those kind of premiums").

766 Agrifos ER, ¶ 69.

767 Respondent's Rejoinder, ¶¶ 706-707; Quadrant ER2, ¶¶ 263-266.

Quadrant's own contrived market valuations of [redacted] (which it describes as a ceiling) in its first Report,[768] and [redacted] in its second Report.[769]

339. Ultimately, it is important to recall that Respondent ignores CIMVAL's strong presumption in favor of using more than one valuation approach and offers no real answer to Agrifos' comparables analysis. Odyssey has presented an Income valuation from Compass Lexecon using the DCF and ROV methods as well as a Market valuation from Agrifos using the Comparable Transactions method, both of which CIMVAL considers "primary" valuation methods (as opposed to Respondent's single method—Market Capitalization—which CIMVAL considers "secondary").[770] By using two different approaches—one Income approach and one Market approach—Odyssey's valuation satisfies CIMVAL Standard S7.2, which states that "[m]ore than one approach should be used in the Valuation of each Mineral Property."[771] The proximity of Agrifos' independent Market valuation to Compass Lexecon's Income valuation reinforces the Income valuation's accuracy, and starkly illustrates the gross undervaluation inherent in Quadrant's proposed method.

F. Compass Lexecon's Correction of Quadrant's Flawed Market Capitalization Valuation Corroborates its Income Valuation

340. The only valuation of Don Diego advanced by Mexico is Quadrant's Market Capitalization valuation, which attempts to infer the value of Claimant's interest in Don Diego from Odyssey's share price. As discussed above, the Market Capitalization method is a secondary valuation method (*i.e.*, appropriate to test or corroborate a primary valuation), particularly where the asset being valued (Don Diego) is not the only asset or business of the company whose shares are the basis for the valuation (Odyssey). Moreover, the Market Capitalization method presents particular problems in a dispute context because the aim here is to value Don Diego in a But For scenario in which the MIA was granted,

768 Quadrant ER1, ¶ 93.

769 Quadrant ER2, ¶ 153.

770 **C-0196**, CIMVAL Standards 2003, Table 2.

771 **C-0196**, CIMVAL Standards 2003, S7.2. *See also* Agrifos ER, ¶ 50 ("[a]s a practical matter, counterparties generally combine DCF calculations for the resource in question with other valuation metrics, including a comparable analysis such as the one provided in [its] report.").

but Odyssey's shares were traded in the Actual scenario (in which the MIA was never granted). Thus, if the Market Capitalization method is to be applied at all, four adjustments must be applied to account for the differences between Odyssey's share price in the Actual scenario and Don Diego in the But For scenario.

341. The starting point for the Market Capitalization valuation, based on Odyssey's share price on the Valuation Date, is [redacted] As Mr. Lopez-Zadicoff explained at the hearing, however, that figure reflects the value of Odyssey's equity, whereas the aim of the Market Capitalization method is to ascertain the value of Odyssey's *asset*, Don Diego. Consequently, the first necessary adjustment is to add the value of Odyssey's debt to its equity value in order to obtain the value of Odyssey's assets (which is [redacted]).[772]

342. In his second report, Dr. Flores does not dispute that [redacted] is the value of Odyssey's assets.[773] Rather, he argues that a majority of that asset value (62%) is attributable to Odyssey's legacy shipwreck business.[774] As an initial matter, this confounding factor is one of the main reasons why the Market Capitalization method should not be used as a primary valuation, and thus the Tribunal should look primarily to other valuation methods, namely Compass Lexecon's Income valuation and Agrifos' Comparable Transactions valuation.

343. Moreover, as Compass Lexecon explained at the hearing, there is no factual basis to conclude that the market attributed any material value to Odyssey's shipwreck business. That business was never profitable, generating losses in every year on record. Moreover, a 2012 court decision denying Odyssey's claim to ownership of treasure it had recovered from a shipwreck substantially impaired the entire business model, leading Odyssey to largely exit the shipwreck business.[775] In December 2015, Odyssey sold its proprietary shipwreck database and all interests in further shipwreck projects, and thereafter, its only role in future shipwreck projects is as a contractor on a cost-plus basis, which has limited

772 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1426:17-1427:7.
773 Quadrant ER2, ¶ 128.
774 Quadrant ER2, ¶ 132.
775 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1425:2-1426:5.

upside.[776] When Odyssey's CEO, Mr. Gordon, announced that sale to the market, he explained that "[m]anagement believes that Odyssey's most valuable assets for the future are its stake in the Don Diego deposit and Odyssey's marine exploration capabilities."[777] Consequently, there is no reason to believe that the market attributed any real value to Odyssey's shipwreck business, much less 62% of Odyssey's total market capitalization. Indeed, as discussed further below, it is more likely that the market ascribed a *negative* value to Odyssey's legacy shipwreck operations and the financial distress they had caused for the company.

344. The second adjustment that must be made to Odyssey's asset value is the so-called "permit bump," which is necessary in order to value Don Diego in the But For scenario in which it is assumed that Mexico granted the MIA. The share price of Odyssey existed in the Actual scenario, in which investors did not know whether the MIA would be granted. As Mr. Lopez-Zadicoff explained at the hearing, the need to apply a permit bump is well-accepted, but the difficulty lies in obtaining reliable evidence regarding the size of the permit bump to be applied. This difficulty arises because the permitting risk that investors perceive varies considerably from project to project (based on differences in, *e.g.*, the projects, legal regimes, and markets), which makes it difficult to infer how large a permitting discount investors actually applied to Odyssey's interest in Don Diego from the permit bump observed when other projects in different jurisdictions and circumstances received permit clearance.[778] This problem is evident from the wide range of permit bumps in the sample that Compass Lexecon analyzed, which varied from 20% to 160%. It is very subjective to assess where in that range the market assessed Don Diego's permitting risk. This is another reason why the Market Capitalization method is not well-suited to use as a primary valuation method in a dispute. For this additional reason the Tribunal should look primarily to Compass Lexecon's Income valuation and Agrifos' Comparable Transaction valuation.

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776 Compass Lexecon ER2, ¶ 148, fn. 207.

777 Compass Lexecon ER2, ¶ 148, *citing* **QE-0025**, Odyssey Marine Exploration Inc - Operational Update Conference Call Transcript, 16 December 2015, p. 6.

778 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1428:16-1429:8.

345. However, for purposes of testing its Income valuation, Compass Lexecon adopted the median permit bump (50%) in the sample it analyzed, a number far closer to the lower end of the range than the upper end. Dr. Flores, on the other hand, calculated a permit bump of only 4%, which as Mr. Lopez-Zadicoff observed at the hearing, absurdly implies that the market expects permits to be granted to 96% of mining projects.[779] As Mr. Lopez-Zadicoff further explained, two main errors led to Dr. Flores' unreasonably low permit bump: (i) his sample included companies with multiple projects, thus diluting the impact of one project being permitted on the share price of the company; and (ii) his sample included projects where the permit at issue was not the last major regulatory hurdle, unlike the situation here.[780]

346. The third necessary adjustment is the so-called acquisition premium, which is needed to account for the value of acquiring a controlling interest in Don Diego. The share price of Odyssey reflects the value of a minority, non-controlling interest in Odyssey. As Mr. Lopez-Zadicoff explained at the hearing, however, it is well-understood among economists that the market places a premium on the value of a controlling interest due to the value (for example) of controlling the company's strategic direction.[781] Compass Lexecon derived its control premium by analyzing the acquisitions of 20 mining companies, the median of which was 32.3%.[782] For context, the mean control premium in that sample was 61.35%, and three different studies on control premiums that Compass Lexecon examined found control premiums ranging from 26-62%, thus confirming that Compass Lexecon's premium is reasonable and conservative.[783]

347. A final adjustment is necessary to account for Odyssey's ownership percentage in Don Diego, and for dividend taxes. First, because Odyssey only owned 56.46% of Don Diego

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779 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1429:20-1430:2.

780 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1429:12-1430:7; **CD-0005**, Expert Presentation of Compass Lexecon Presentation, p. 41.

781 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1430:8-1431:19; **CD-0005**, Expert Presentation of Compass Lexecon, p. 25.

782 Compass Lexecon ER1, ¶ 121.

783 Compass Lexecon ER1, ¶ 121; **CD-0005**, Expert Presentation of Compass Lexecon, p. 25, *citing* Compass Lexecon ER2, ¶ 118.

on the Valuation Date, the value of Odyssey's interest in Don Diego must be increased proportionately to arrive at the value of Don Diego itself. Additionally, because Odyssey's interest in Don Diego is derived from its entitlement to dividend payments that are subject to a 9.75% dividend tax, the pre-tax value of Don Diego itself must be increased proportionately.

348. In total, the results of all four adjustments necessary to implement the Market Capitalization method correctly are illustrated on the following slide from Compass Lexecon's presentation:[784]

349. Compass Lexecon concludes that the value of a fully-permitted Don Diego implied by Odyssey's share price is [redacted]. This figure broadly corroborates Compass Lexecon's Income valuation of [redacted] (as well as Agrifos' [redacted] Market valuation). While the corrected Market Capitalization value is around [redacted] below

[784] **CD-0005**, Expert Presentation of Compass Lexecon, p. 26.

the Income valuation, one obvious explanation for that discrepancy is the fact that Compass Lexecon applied conservative estimates of the permit bump and control premium. Additionally, as Mr. Lopez-Zadicoff explained at the hearing, that discrepancy is likely explained by several other factors that are difficult to quantify, namely: (i) the drag effect of Odyssey's loss-making shipwreck business, which threatened to squander a portion of the value of Don Diego; (ii) Odyssey's financial distress (largely attributable to its loss-making shipwreck business); and (iii) the effect of short-sellers seeking to capitalize on Odyssey's financial distress.[785]

350. In contrast to Compass Lexecon's comprehensive and well-reasoned adjustments to the Market Capitalization valuation, Dr. Flores' Market Capitalization valuation simply strains his credibility beyond its breaking point. In addition to all of the flaws described by Compass Lexecon and summarized above, the Tribunal should not lose sight of the fact that Dr. Flores did a 180-degree turnabout on this issue between his first and second reports. As Mr. Lopez-Zadicoff explained at the hearing, in his first report, Dr. Flores considered that Odyssey's market capitalization should be valued as of February 29, 2016 (rather than the Valuation Date of April 6, 2016), because the large share price increase between those two dates was attributable exclusively to "buzz" surrounding the *Billion Dollar Wreck* TV show.[786]

351. After Compass Lexecon's second report and Odyssey's Reply explained all of the problems with that facially absurd theory (not least of which was that *Billion Dollar Wreck* was in no way connected to, and did not mention, Odyssey), Dr. Flores abandoned it entirely in his second report. But in doing so, Dr. Flores completely flip-flopped regarding what portion

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785 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1432:7-1433:9; **CD-0005**, Expert Presentation of Compass Lexecon, p. 26. Importantly, while these factors likely do weigh on the share price of Odyssey, they should not have any impact on the FMV of Don Diego, which is based on the price that would be obtained in a transaction between a hypothetical buyer and seller.

786 Quadrant ER1, ¶ 54.

of Odyssey's market capitalization was attributable to Don Diego and the shipwreck business, as Compass Lexecon illustrated on the following slide:[787]

352. At the hearing, Dr. Flores attempted to defend this stunning reversal of opinion as a simple (and even honorable) change of opinion in response to new information. In his version of events, when he drafted his first report, he simply could not think of any other reason why Odyssey's share price would increase dramatically (in the weeks leading up to the expected announcement of the MIA decision) other than the Billion Dollar Wreck program, but after he saw the analysis and documents presented by Compass Lexecon demonstrating why the run-up was obviously due to the market's expectation of a favorable MIA decision, he honorably changed his opinion.[788]

787 **CD-0005**, Expert Presentation of Compass Lexecon, p. 19.

788 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, pp. 1559:15-18, 1560:3-6, 1560:8-10, 1574:6-9 ("I tried to find explanations for the tripling in value, and I looked at the evidence that I could find, and I thought it was a plausible explanation. . . . Based on the information that I was able to find as of the filing of my First

353. With all due respect, however, Dr. Flores' contrived explanation for this reversal of opinion is even worse for his credibility than his concoction of the *Billion Dollar Wreck* theory in the first place. As Dr. Flores admitted, all of the information that Compass Lexecon presented in their second report that led him to abandon the *Billion Dollar Wreck* theory was discoverable through a reasonable search when he prepared his first report.[789] Moreover, the three documents presented by Compass Lexecon that Dr. Flores claimed changed his mind were all reports in the mainstream financial press specifically discussing the reasons for volatility in Odyssey's share price.[790] In contrast, as Odyssey summarized in its Reply, the three sources on which Dr. Flores based his *Billion Dollar Wreck* theory were isolated comments on message boards that were not focused on finance at all, and only mentioned Odyssey in passing.[791] It is simply not credible to suggest that despite diligent research, Dr. Flores and his team managed to find obscure comments on ScubaBoard (a website for diving enthusiasts), Talk Nerdy With Us (an online pop culture magazine), and the local Martha's Vineyard newspaper, but did not find the articles from the mainstream financial press presented by Compass Lexecon specifically discussing Odyssey's share price.[792] If that is actually true, then Dr. Flores is simply not competent. But unfortunately, the far more plausible explanation is that Dr. Flores never conducted an independent and objective analysis of the reasons for the volatility in Odyssey's share price, and focused exclusively on his *Billion Dollar Wreck* theory because it supported his pre-ordained design to attribute as little of Odyssey's

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Report, I thought that [broadcasting of 'Billion Dollar Wreck' appears to be the only plausible explanation for the price increase]. Now, Compass Lexecon provided more evidence in their Second Report. . . . I reviewed that additional evidence, and then I no longer stand behind this analysis that you are highlighting in the screen. . . . I embrace new evidence, and if doesn't support my prior analysis, I'm going to change the analysis. That's the thing--it's the correct thing to do, and that's what I did.").

789 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, pp. 1573:20-1574:4.

790 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, pp. 1572:11-1573:14, referencing (i) **CLEX-0095**, "Why Are These 4 Stocks So Volatile Today?," Accesswire, April 11, 2016; (ii) **CLEX-0096**, "Here's Why Odyssey Marine Plunged 55%," Benzinga, April 11, 2016; and (iii) **CLEX-0097**, "Odyssey's stock sinks after plan is rejected," Tampa Bay Times, April 12, 2016.

791 Claimant's Reply, ¶ 515.

792 Claimant's Reply, ¶¶ 515-521.

market capitalization as possible to the market's anticipation that the MIA for Don Diego would be granted.

354. No matter how hard he tries to avoid it, Dr. Flores' decision to embrace and then abandon the *Billion Dollar Wreck* theory is disastrous to his credibility. The truth is that there is no reason to assign any of Odyssey's market value to its shipwreck business, simply because it had never turned a profit. But Dr. Flores was dead set on attributing as much of Odyssey's market value to the shipwreck business as he could, simply to drive down the valuation. When considered with Dr. Flores' transparent manipulation of the discount rate (for which he offered no explanation at the hearing), his deliberate obfuscation of an entire development stage for which Income valuation is often used (Mineral Resource/Pre-development), and his misrepresentation that Mr. Lamb characterized Don Diego as an exploration stage project (conveniently omitting Mr. Lamb's clarification that it was a "mature" exploration stage project advancing to the Development stage almost two years before the Valuation Date), Dr. Flores' contrived explanation for abandoning a demonstrably false theory is the final nail in the coffin of his own credibility, and the Tribunal should give Dr. Flores' evidence no weight whatsoever.

G. The Cost Approach Is Factually and Procedurally Inapplicable

355. In contrast to the overwhelming evidence discussed above showing that Compass Lexecon's Income Valuation and Agrifos' Comparable Transactions valuation are both reasonable and reliable valuations of Odyssey's damages in this case, the Tribunal should reject Mexico's belated suggestion that it should value damages based on Odyssey's sunk costs, for two independent reasons.

356. First, Mexico has not properly advanced a Cost valuation. Mexico's Counter-Memorial did not present any evidence on sunk costs or even argue that damages should be assessed using the Cost Approach. To the contrary, Mexico effectively conceded in its Counter-Memorial that the Cost Approach is not a valid measure of Odyssey's damages. As discussed above, Mexico's Counter-Memorial agreed explicitly that FMV is the

applicable legal standard of compensation.[793] Moreover, its own valuation expert unambiguously rejected sunk costs as the appropriate valuation method here, stating expressly that "[s]unk costs are not an indicator of the FMV of the Project, as value is a forward-looking concept that does not depend on how much was spent in the past."[794] Consequently, in Mexico's Counter-Memorial, Mexico and Quadrant contended that Market Capitalization was the only correct method of valuing Don Diego.

357. The first time that Mexico even suggested that the Tribunal should assess damages based on Odyssey's sunk costs was in its Rejoinder, when Odyssey had no opportunity to submit a responsive pleading and evidence.[795] Under ICSID Rule 31(3), the proper scope of a Counter-Memorial and Rejoinder is to respond to the submissions in the "last previous pleading," *i.e.*, Claimant's Memorial and Reply (respectively). In its Rejoinder, Mexico suggests that the Tribunal should calculate damages based on sunk costs because "no había certidumbre razonable sobre la rentabilidad futura del Proyecto a la Fecha de Valuación."[796] Whatever uncertainty may exist in Compass Lexecon's Income valuation, however, existed when Odyssey submitted its Memorial; indeed, both the Counter-Memorial and Quadrant's first report argued extensively against the DCF method on the ground that Don Diego's future profitability was insufficiently certain.[797] Thus, Mexico's suggestion that the Tribunal should assess damages using the Cost Approach is not responsive to anything new that Claimant presented in its Reply, and thus Mexico was

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793 Respondent's Counter-Memorial, ¶ 632; see also Section VI.C. Mexico's suggestion in its Rejoinder (¶ 457) that the Tribunal should value Don Diego based on sunk costs "si este Tribunal determinara que la medida de compensación applicable no es el VJM de la inversión determinado inmediatamente antes de la violación" ("if this Tribunal determines that the applicable compensation measure is not the investment FMV determined immediately prior to the violation") is an illogical non-sequitur. Mexico's purported basis for valuing Don Diego based on sunk costs is the supposed lack of reasonable certainty in the DCF valuation, not any disagreement with the FMV standard itself. In other words, Mexico's argument again incorrectly conflates the substantive compensation standard (FMV) with the evidentiary standard (reasonable certainty).

794 Quadrant ER1, ¶ 12.

795 Respondent's Rejoinder, ¶¶ 457, 496, 688-694.

796 Respondent's Rejoinder, ¶ 457 ("there was no reasonable certainty about the future profitability of the Project as of the Valuation Date").

797 *See* Respondent's Counter-Memorial, ¶¶ 663-697; Quadrant ER1, ¶¶ 31-47.

required to present that argument in its Counter-Memorial. It did not, and the argument is therefore waived.

358. Moreover, in addition to being a clear procedural bar, Mexico's "flip flop" on this issue also demonstrates that its argument is not based on any principled position whatsoever. As already noted, Dr. Flores explicitly rejected the Cost Approach in his first report, and asserted unambiguously that the value of Don Diego should be assessed using only the Market Capitalization method. The only thing that really changed with Odyssey's Reply Memorial is that Compass Lexecon destroyed Dr. Flores' *Billion Dollar Wreck* theory, forcing Dr. Flores to accept a Market Capitalization valuation of nearly [redacted] even before applying the adjustments identified by Compass Lexecon. Thus, it seems quite clear that Mexico's belated embrace of the Cost Approach in its Rejoinder was solely motivated to create an alternative pathway for the Tribunal to award de minimis damages, rather than any principled response to the supposed uncertainty in Compass Lexecon's Income Valuation.

359. In any event, Dr. Flores' explicit admission that sunk costs are not evidence of FMV is dispositive of this issue. The controlling legal standard of compensation in this case is the FMV of Don Diego, which Mexico does not seriously contest. Consequently, as a plain factual matter, there is no relationship whatsoever between Odyssey's sunk costs and the damages owed to Odyssey for Mexico's breaches of NAFTA.

360. Given that Mexico did not argue for damages based on sunk costs prior to its Rejoinder and affirmatively admitted in its Counter-Memorial and supporting expert evidence that the standard of compensation is FMV (and that sunk costs are not evidence of FMV), it would be grossly improper for the Tribunal to even consider Mexico's belated argument that damages should be assessed based on the Cost Approach.

H. Final Valuation Issues

361. Lastly, this Tribunal should consider, the value of an exploration and strategic premium in determining the value of Don Diego (VI.H.1, *below*), and the Tribunal must apply the appropriate interest rate to Odyssey's losses (VI.H.2, *below*). In addition, this Tribunal's

damages award must avoid taxing Odyssey twice (VI.H.3, *below*). These are necessary items for the Tribunal to award Odyssey full reparation for its damages and to put Odyssey in the position it would have been had the MIA been approved, which damages are summarized below (VI.H.4, *below*).

1. Don Diego's Strategic Value and Exploration Potential

362. Mexico's position in this arbitration is that the valuation of the Don Diego Project cannot include the Project's strategic value or its exploration potential because these heads of damages are not part of the FMV.[798] Mexico is incorrect. Any prospective buyer would take this information into consideration when calculating a purchase price for the Don Diego project. It is axiomatic that a prospective buyer of Don Diego would have considered all aspects contributing to Project value, including strategic value and exploration potential. This additional value is not captured in Odyssey's valuations using the Income or Market Approaches because those approaches are limited to the explored area of the Don Diego concession and do not purport to address any strategic premium. Nonetheless, real world potential buyers of Don Diego would consider these additional drivers of project value, so these factors must also be valued in order to comply with the full reparation principle. Moreover, as Odyssey demonstrated in its Reply, there is considerable support in investment treaty jurisprudence confirming that investors are entitled to compensation for the value of opportunities that are lost as a result of a State's treaty breaches.[799]

363. The Don Diego Project has a substantial exploration potential that is not captured in the Compass Lexecon Income valuation, which valued the Don Diego Project based on the

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[798] *See* Hrg. Day 1 Tr., Respondent's Opening Presentation, 24 January 2022, p. 155:5-12 (Spanish Tr.) ("la demandante misma ha afirmado que los daños deben determinarse con base en el valor justo de mercado determinado antes de la primera denegación de la MIA, el monto que reclama incluye dos categorías de daños adicionales, el valor estratégico y oportunidad perdida, que no forman parte del valor justo de mercado"), p. 136:10-16 (English Tr.) ("Claimant has said that damages have to be determined on the basis of Fair Market Value determined before the First Denial of the MIA. The amount that it claims includes two additional damage categories: Strategic Value and lost opportunity. These are not part of the Fair Market Value.").

[799] See Claimant's Reply, ¶¶ 558-566.

Mineral Resources volumes estimated by Mr. Lamb in his Technical Report.[800] The evidence in this case (from Mr. Lamb and Mr. Longley, among others) demonstrates that the Don Diego Project had immense additional exploration potential, in two significant ways. **First**, Don Diego has the potential for additional substantial vertical exploration because [redacted]; what lies beneath is not included in the resource estimates that form the basis for the DCF, ROV and Comparable Transaction valuations.[801] **Second**, the potential for exploration of adjacent areas to the initial Project is also substantial. As Mr. Lamb's Technical Report notes, the resource continues beyond the exploration areas in multiple directions, and the potential for additional resources outside the areas that had already been explored is extremely high.[802] The volume and tonnage modeling performed by Mining Plus corroborates the Don Diego resource is substantially larger than volume estimates in the Technical Report.[803] This exploration potential, both vertical and horizontal, has value and must be captured in order to comply with the full reparation standard.[804]

364. In order to quantify this lost opportunity, Mr. Longley assigns a reasonable value for the in situ contained P_2O_5 of [redacted] of contained P_2O_5 Odyssey estimates the Concessions contain.[805] Based on these values,

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800 Compass Lexecon ER1, ¶ 12, fn. 19 (noting that the volume of Mineral Resources used for its valuation is taken from Mr. Lamb's Technical Report). This means that in addition to not capturing the opportunity to explore and develop other parts of the Don Diego Concession, Compass Lexecon also did not include the [redacted] of Mineral Resources that Mr. Lamb subsequently classified in the Don Diego Norte Concession. *See* Compass Lexecon ER1, ¶ 12, fn. 19; **C-0223**, Don Diego West Resource Estimate with Northern Extension, 21 August 2014.

801 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 13-14, 76; Longley WS1, ¶¶ 35-47; Longley WS2, ¶¶ 4-16.

802 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 13-14, 76, 77-78. [redacted] remain unexplored and therefore were not included in the NI 43-101 Report estimates of Dr. Lamb. *See also* Longley WS1, ¶¶ 35-47; Longley WS2, ¶¶ 4-16.

803 MP Geostatistics ER, p. 48.

804 Multiple international tribunals have included the value of lost opportunity as a portion of damages. *See*, *e.g.,* **CL-0054**, *Gemplus, et al. v. United Mexican States* (ICSID Case Nos. ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, ¶¶ 13-99 ("it would be wrong in principle to deprive or diminish the Claimants of the monetary value of that lost opportunity").

805 Longley WS1, ¶ 47.

the lost opportunity of exploring and developing the parts of the Don Diego Deposit not included within the NI 43-101 Technical Report, is calculated at [redacted][806]

365. Additionally, the Don Diego Project has substantial strategic value that is not captured in the Compass Lexecon Income valuation, which only considers the cash flow value of the Don Diego Project and not the premium that a strategic buyer would pay for the value of controlling such an important resource. As Mr. Longley explains, that strategic value arises principally from the Don Diego Project's size and location. Currently, over 80% of the world's phosphate reserves are located in Morocco and the Western Sahara, which exposes the security of the global food supply to political instability in that region.[807] The ability to control an enormous supply of easily-accessible phosphate off the coast of North America offers enormous strategic value for parties looking to diversify their supply of this critical resource and reduce their dependence on phosphate imports from Morocco. For Mexico in particular, as Mr. Longley explains, a "consistent supply of domestic phosphate would help Mexico achieve fertilizer independence and achieve food security. The ExO resource could actually result in Mexico becoming a net exporter of phosphate rock and/or fertilizer to the USA and Pacific Rim nations."[808] Mr. Longley estimates the value of this strategic premium to be [redacted] of Don Diego's value under the Income Approach.

366. Mexico argues the Project's strategic value and its exploration potential should not be considered because they lack specific data and expert evidence.[809] Contrary to Mexico's assertion, however, there is substantial data and evidence regarding Don Diego's strategic value and exploration potential, including in Mr. Lamb's Technical Report and Mining Plus' Geostatistics expert report, as noted above.[810] Moreover, Mexico did not even call Mr.

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806 Longley WS1, ¶ 47.

807 Longley WS1, ¶¶ 23-26.

808 Longley WS1, ¶ 31.

809 *See* Hrg. Day 1 Tr., Respondent's Opening Presentation, 24 January 2022, p. 155:5-12 (Spanish Tr.), p. 136:10-16 (English Tr.).

810 For example, Mr. Lamb's Technical Report confirms the Project has significant potential to increase ExO's phosphorite resources (*see* **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, p. 14); the limited exploration of the Don Diego Norte Concession had already increased the amount of resources by [redacted] (*see* **C-0223**, Don Diego West Resource Estimate With Northern Extension, 21 August

Longley for cross-examination at the hearing. Because a potential buyer of Don Diego would have taken these potential additional sources of revenue into consideration, this Tribunal must equally consider these additional heads of damages.

2. Odyssey and ExO Are Entitled to Compound Pre- and Post-Award Interest

367. As addressed in Odyssey's Memorial[811] and Reply,[812] in order to compensate Odyssey fully for its losses, this Tribunal should issue an award with a 13.95% pre-award interest rate, equivalent to the weighted average cost of capital ("**WACC**") of a typical investor in a pre-operational mining project in Mexico, compounded annually.[813] Mexico accepts that Odyssey is entitled to compound interest on any award of damages,[814] but takes the position that this Tribunal should calculate interest using a risk-free rate, which is not a commercially reasonable rate.[815]

368. At the hearing, when asked about this issue by Mr. Alexandrov, Dr. Flores confirmed Mexico's position that interest should not compensate Odyssey for the investments it would have made in the project in the But For scenario, but instead should merely compensate Odyssey for the time-value of money at a risk-free rate:[816]

> A. [M]y approach is what can someone do--say, for example, you decided to award these Claimants--not to bias you or anything—one dollar; right? You award the Claimant one dollar. I said, this is what they should have received on the Valuation Date of 2016. …
>
> [T]he idea is, well, what would have the Claimant done if it would have received that one dollar in 2016? And what we know is that that dollar for the last five years has not been subject to risks, to

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2014); Mining Plus noted that expanding outside the Resource boundary line held potential to significantly increase tonnages (*see* MP Geostatistics ER, p. 48); and Mr. Selby stated that there is "compelling geological evidence base for a presumption of phosphorite mineralization continuity in the Don Diego resource bed" (*see* Selby ER2, ¶¶ 37, 53).

811 Claimant's Memorial, ¶¶ 423-431.

812 Claimant's Reply, ¶¶ 570-579.

813 Claimant's Reply, ¶ 570.

814 Respondent's Counter-Memorial Section IV.D.8, pp. 235-236.

815 *See* **CL-0206**, J. Dow, "Chapter 21: Pre-Award Interest," in: J.A. Trenor, ed., *The Guide to Damages in International Arbitration*, Global Arbitration review (GAR) (4th. ed. 2021), p. 307: "[A]ll market rates could be described as commercial; the difference between rates is that they relate to different risks. The commercial rate for a risk-free loan is not the same as the commercial rate for a risky loan."

816 Hrg. Day 6 Tr., Testimony of Quadrant, 29 January 2022, pp. 1591:16-1593:16 (emphasis added).

> business risks, so then you have to think, where would you invest the money? And then you would invest it in--what is commercially, if I went to a bank and said, "Hey, I want to put this money, put this one dollar and I want you to keep it for me for the next five years, and I don't want to be subject to any risks," and then they say you know, what buy a Treasury Bond. You can buy Treasury Bonds. And from that perspective, the Treasury Bond rate is a commercial rate where what you want to do is deposit money in a very, very, very safe investment.
>
> Q: And why would you assume that the Claimant had that amount of money five years ago would not have taken any risk? Wouldn't the Claimant have invested the money in the line of business in which that Claimant operates?
>
> A: Perhaps, but if they had invested the one dollar into a different mine--not in Mexico but, say, in the Pacific Ocean--by today, 99 percent chance is they would have lost that dollar because that's the statistics. This Arbitration protected that dollar. So, if you remunerate according to the business risks the businesspeople required to invest in mining assets, then what you would be doing is you would be giving them the remuneration without the risk, and I don't think that's economically adequate.

369. There are several fundamental problems with Dr. Flores' and Mexico's position on this issue. First, as Compass Lexecon explained at the hearing, "the Risk-Free Rate is not a commercial rate. That's not a rate at which investors and companies are able to finance and sell for five, six, or seven years. It's simply not."[817] Second, the purpose of an award of interest is compensatory, and a risk-free rate is vastly under-compensatory, for two main reasons. To begin with, if Odyssey had sold its interest in Don Diego for FMV on the Valuation Date, there is no reason to believe that it would have invested that money in a risk-free bond rather than redeploying that money in its own line of business, which has higher expected returns due to the value of Odyssey's assets and expertise. Further, as Odyssey explained in its Reply, a risk-free rate is under-compensatory because the FMV of Don Diego under the DCF Method is calculated by discounting future cash flows to the Valuation Date using the WACC.[818] Dr. Flores' argument in response that there is a 99%

817 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, p. 1434:5-8.

818 Claimant's Reply, ¶ 577.

chance that Odyssey "would have lost that dollar" if it had invested the money in its own line of business, supported only by his assertion that "that's the statistics," ignores that the WACC represents the average expected profitability on an investment like Don Diego.

370. Finally, as Mr. Lopez Zadicoff explained at the hearing, a risk-free interest rate also would create moral hazard because that rate is significantly below Mexico's own cost of borrowing:[819]

> [G]ranting interest at a Risk-Free Rate that is 1 percent, that is lower than Mexico's cost of borrowing could generate a problem of efficiency, moral hazards, and lots of incentives. Why is that? Because Mexico willingly--and I know--if you indulge me with one minute, I will finish, Mr. President, so Mexico willingly pays 4.91 percent to creditors that leave them money with the promise of repayment; right? So, here we are in a situation where Mexico captures unwillingly the money from Claimant and is not returning it for five years, so why--how could it be possible that you should compensate Claimant for that deprivation, which is an actual financial cost, at a lower rate than what Mexico willingly pays to people that actually supply capital.

371. For all of these reasons, the 13.95% WACC rate for pre-award interest is necessary to fully compensate Odyssey for its losses resulting from Mexico's wrongful acts and any lower rate would violate the principle of full reparation.

3. The Damages Award Must Avoid Taxing Odyssey Twice

372. Lastly, and for completeness, one final item that did not feature prominently during the hearing for this case is taxes. As addressed in Claimant's Memorial[820] and Reply[821] briefs, the calculation of damages owed to Odyssey must be net of Mexican taxes. Allowing Mexico to tax Odyssey's award of damages would in effect mean that Odyssey would be impermissibly taxed twice for the same income, as confirmed by the overwhelming majority of investment tribunals to evaluate this issue.[822] While Mexico disputes

819 Hrg. Day 6 Tr., Testimony of Compass Lexecon, 29 January 2022, pp. 1434:20-1435:13.

820 Claimant's Memorial, ¶ 432.

821 Claimant's Reply, ¶¶ 580-584.

822 **CL-0099**, *Rusoro Mining Limited v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB (AF)/12/5) Award, 22 August 2016, ¶¶ 852-855 (recognizing that if Venezuela were to tax the award, it could "reduce the

Odyssey's valuation pursuant to the DCF Method and the proper accounting of ExO's operating losses,[823] Mexico does not dispute that Odyssey must not be taxed twice.[824] In this sense, by resolving Mexico's objections to Odyssey's valuation as outlined above, the Tribunal will also resolve Mexico's objections to Odyssey's case as it pertains to taxation.

373. For these reasons, Claimant respectfully requests that the Tribunal (i) declare that any award is net of all applicable Mexican taxes and that Mexico may not tax or attempt to tax the award; and (ii) order Mexico to indemnify Claimant with respect to any Mexican taxes imposed on the award.

4. Summary of Quantum Claim

374. For all of the reasons explained above, the Tribunal should award damages that provide full reparation for all of the losses incurred by ExO, as follows:

compensation 'effectively' received," and therefore declaring that "the compensation, damages and interest granted in this Award are net of any taxes imposed by [Venezuela]" and ordering Venezuela "to indemnify [the investor] with respect to any Venezuelan taxes imposed on such amounts"); **CL-0088**, *Philips Petroleum Company Venezuela Limited and ConocoPhillips Petrozuata B.V. v. Petróleos de Venezuela S.A.* (ICC Case No 16848/JRF/CA) Final Award, 17 September 2012, ¶¶ 313, 333(1)(vii); **CL-0115**, *Tenaris SA and Talta – Trading e Marketing Sociedade Unipessoal LDA v. Bolivarian Republic of Venezuela II* (ICSID Case No. ARB/12/23) Award, 12 December 2016, ¶¶ 788-792; **CL-0158**, *Conocophillips Petrozuata B.V., Conocophillips Hamaca B.V. and Conocophillips Gulf of Paria B.V. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB/07/30) Award, 8 March 2019, ¶¶ 955-957; **CL-0165**, *Glencore International A.G. and C.I. Prodeco S.A. v. Republic of Colombia* (ICSID Case No. ARB/16/6) Award, 27 August 2019, ¶¶ 1623-1630.

823 Respondent's Counter-Memorial, ¶ 712.

824 Respondent's Counter-Memorial, ¶¶ 712-713.

Table No. 2: Summary of Quantum Claim		
Claim Category/Head of Loss	**Value**	**+ Interest (13.95%) (12.9.2022)**
Compass DCF (Gross of Taxes)	[redacted]	[redacted]
Compass DCF (Net of Taxes)	[redacted]	[redacted]
Strategic Value	[redacted]	[redacted]
Value of Exploration Potential (Lost Opportunity)	[redacted]	[redacted]
Total (Net of Taxes)	$1,065.4M	**$2,467.06M**
Total (Gross of Taxes)	$1,355.0M	**$3,137.6M**

VII. REQUEST FOR RELIEF

375. For the foregoing reasons, Claimant respectfully submits that the Tribunal should:

i. **DECLARE** that the Tribunal has jurisdiction to decide all of Claimant's claims under Chapter 11 of NAFTA, as set forth in this proceeding;

ii. **DECLARE** that Mexico violated NAFTA Article 1105(1) by failing to accord Claimant with treatment in accordance with international law including fair and equitable treatment and full protection and security;

iii. **DECLARE** that Mexico violated NAFTA Article 1110(1) by indirectly expropriating Claimant's investments;

iv. **DECLARE** that Mexico violated NAFTA Article 1102 by according Claimant with treatment less favorable than it accords, in like circumstances, to its own investors;

v. **ORDER** that Mexico pay Claimant and ExO money damages of no less than $3,137,616,361 (gross of taxes with interest calculated through 12 September 2022), plus compounding interest of 13.95% through the date when the Tribunal issues its final award, plus post-award interest through the date the award is paid; or alternatively

vi. **ORDER** that Mexico pay Claimant and ExO money damages of no less than $2,467,060,000 (net of taxes with interest calculated through 12 September 2022), plus compounding interest of 13.95% through the date when the Tribunal

issues its final award, plus post-award interest through the date the award is paid; and **DECLARE** that any award is net of applicable Mexican taxes and Mexico may not tax or attempt to tax the award; or otherwise **ORDER** Mexico to indemnify Claimant with respect to any Mexican taxes imposed on the award;

vii. **ORDER** Mexico to reimburse Claimant the full costs of the arbitration, including, without limitation, all arbitrators' fees and other costs, all of the Center's administration fees, attorneys' fees and other costs, fees, and expenses incurred by Claimant in connection with pursuing this arbitration, in an amount to be calculated at the conclusion of these proceedings and payable in U.S. dollars;

viii. **DECLARE** that the Tribunal's arbitral award shall be immediately enforceable notwithstanding any recourse filed against it; and

ix. **ORDER** such further relief as the Tribunal considers appropriate.

Dated: 12 September 2022
New York, NY
London, United Kingdom

Rachel W. Thorn
James Maton
Phil Bowman
Cooley LLP

Henry G. Burnett
Viren Mascarenhas
Kevin Mohr
King & Spalding LLP

For and on behalf of Claimant Odyssey Marine Exploration, Inc. (USA)

Appendix One

Claimant's Responses to the Tribunal's Questions to the Parties

Tribunal Question No.	Tribunal Question	Paragraphs where the answer is found in the post-hearing brief
1	To what extent, if any, would the basis and extent of Odyssey's claim be affected if SEMARNAT's 12 October 2018 Denial was to be annulled by the TFJA?	¶¶ 170-185
2	By reference to the law applicable to this dispute, what is the legal standard to be applied in determining whether a violation of the BIT has occurred in circumstances in which (a) the Claimant has brought proceedings before courts of Mexico to challenge the refusal of SEMARNAT to grant the requested authorisation, which proceedings are still pending, and (b) there is no claim or finding that the courts of Mexico have failed to meet the requirements of international law imposed upon them by the BIT?	¶¶ 172-175
3	What, if any, is the application and effect of the 'margin of appreciation' doctrine (Phillip Morris v Uruguay) in the present case?	¶¶ 127-129
4	To what extent, if any, is the Tribunal in this case (i) required to form a view of the environmental impacts of the proposed project, and (ii) if necessary, substitute its view for that adopted by the Mexican authorities, in particular SEMARNAT?	¶¶ 120-134
5	What is the legal significance of the TFJA Ruling of 21 March 2018, if any, for determining whether a violation of the BIT has occurred? What is the legal significance of SEMARNAT's compliance, or non-compliance, with that Ruling?	¶¶ 94-108
6	What is the legal significance, if any, of the motivation behind SEMARNAT'S refusal to grant the requested authorization for determining whether a violation of the BIT has occurred?"	¶¶ 55-70

Chronology of Events

Date	Event
7 March 2012	ExO is incorporated as the project vehicle to explore and develop the Don Diego Project. (**C-0052**, ExO's Articles of Incorporation, 7 March 2012; Gordon WS1, ¶¶ 7, 37.) Odyssey has held a majority interest in and controlled ExO since February 2013. (Gordon WS1, ¶¶ 7-8; Claimant's Reply ¶¶ 137-141, 143.)
28 June 2012	ExO obtains a 50-year mining Concession (Concession No. 240744) to explore what is now known as the Don Diego Deposit, an enormous, high-grade, easily dredgeable resource strategically located off the coast of Baja California Sur in the Gulf of Ulloa. (**C-0012,** Concession Title no. 240744, 27 June 2012; Gordon WS1, ¶¶ 34-37; Lozano WS1, ¶ 13; **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 72, 77-78; **C-0090**, Investment Bank Valuation, 29 July 2014, pp. 11-12; Claimant's Memorial, ¶ 41; **CD-0001**, Claimant's Opening Presentation, pp. 4, 6, 10, 11; Tr. Day 1, pp. 19:8-22:20 (Claimant's Opening Statement); Tr. Day 1, pp. 173:9-176:22 (M. Gordon).)
October 2012	Odyssey begins an extensive prospecting and coring campaign in the Concession area. Over the next 13 months, Odyssey conducts seven cruises, two of which are focused on environmental sampling and modeling. (Oppermann WS, ¶ 18; Lozano WS1, ¶ 15; Gordon WS1, ¶ 39; Claimant's Memorial, ¶¶ 44-45.)
December 2012	Rafael Pacchiano is named Undersecretary of Management for Environmental Protection. (Pacchiano WS1, ¶ 8.) To explore and assess the deposit, Odyssey engages experts at the forefront of the phosphate industry, including:

Date	Event
	• Henry Lamb (President of Mineral Resource Associates) as the Technical Advisor to evaluate the size and character of the resources. Mr. Lamb is a world-renowned phosphate geologist and a "Qualified Person," who is credentialed to produce a Canadian "National Instrument 43-101" Technical Report ("**NI 43-101**"), as well as a "Competent Person" under Australia's JORC standards. (**C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 81-82; **C-0459**, Henry James Lamb CV, 21 June 2021; Agrifos ER, ¶ 23; Gruber ER2, p. 7; Claimant's Memorial, ¶¶ 47-48; Tr. Day 1, pp. 25:18-26:5 (Claimant's Opening Statement); Tr. Day 1, p. 176:4-8 (M. Gordon)); and • The Florida Industrial and Phosphate Research Institute ("**FIPR**") to support the assessment of and perform assays on core samples from across the deposit. FIPR is one of the premier phosphate laboratory and research institutes in the world. (*See* Claimant's Memorial, ¶ 46, fn. 84; Tr. Day 1, pp. 26:6-15 (Claimant's Opening Statement).)
Early 2013	Odyssey engages Mr. Craig Bryson to serve as the Project Manager. Mr. Bryson is a mining engineer and independent mining consultant with over 20 years of experience designing, implementing, and managing terrestrial and marine mining projects worldwide, with a particular focus on marine mineral extraction and process design. (Bryson WS1, ¶¶ 12, 25; Tr. Day 1, pp. 26:16-27:3 (Claimant's Opening Statement); Claimant's Memorial, ¶ 59; Bryson WS1, ¶¶ 2-25; **CD-0001**, Claimant's Opening Presentation, p. 19.)
May – June 2013	Odyssey assembles a world-class team of experts and consultants to develop an environmentally sustainable dredging project and apply for environmental approval. Among others, Odyssey engaged: • Dr. Richard Newell, who until his passing was a Senior Research Fellow at The Royal Society, one of the world's foremost experts in the field of applied marine biology, and a leading advisor on all aspects of the environmental impacts of Trailing Suction Hopper Dredgers, the dredging technology that would have been used for the Don Diego Project (Claimant's Memorial, ¶ 91;Claimant's Reply, ¶¶ 56-57, 79, 125-126; Newell WS, ¶¶ 3, 5-

Date	Event
	12; **RN-0001**, Richard Newell CV, July 2020; **CD-0001**, Claimant's Opening Presentation, p. 34); • QV Gestión Ambiental, one of Mexico's leading environmental consulting firms, which has successfully shepherded more than 80 MIAs through the Mexican environmental impact assessment process (Claimant's Memorial, ¶ 92; **CD-0001**, Claimant's Opening Presentation, p. 36); • Dr. Douglas Clarke, a biologist who spent the bulk of his career at the U.S. Army Corps of Engineers focused on the assessment and mitigation of environmental impacts of coastal engineering projects and dredging methods (Claimant's Memorial, ¶¶ 103-104; Clarke WS, ¶¶ 6-18; **CD-0001**, Claimant's Opening Presentation, p. 35); and • Other leading organizations to conduct environmental testing, including: (i) Marine Ecological Surveys Limited; (ii) EA Engineering; (iii) CalScience Environmental Laboratories, Inc.; (iv) the Scottish Association for Marine Science Research Services Ltd.; and (v) HR Wallingford. (Claimant's Memorial, ¶¶ 94, 96-97, 99-100; Claimant's Reply, ¶ 298(c); *see also* **CD-0001**, Claimant's Opening Presentation, p. 15.)
June 2013	Odyssey selects Boskalis Offshore (part of Royal Boskalis Westminster) as Odyssey's dredging partner for the Don Diego Project. (**C-0059-C-0065**, Boskalis Phosphate Mining Proposal, 28 May 2013; Bryson WS1, ¶¶ 23-40; Gordon WS1, ¶¶ 52-54; Tr. Day 2, pp. 371:1-13 (C. Bryson); Claimant's Memorial, ¶¶ 61-65; Tr. Day 1, pp. 173:8-176:22 (M. Gordon).) Boskalis is one of the world's largest and most renowned dredging companies, with market-leading expertise in particle separation and the processing of dredged sediment, a well-established operational presence in Mexico via its subsidiary Dragamex, and a proven commitment to environmental conservation as evidenced by its participation in the European consortium *Building with Nature.* (*See* Claimant's Memorial, ¶¶ 63-64; **C-0060**, Boskalis Phosphate Mining Proposal, Attachment 1, Dragamex Brochure, 28 May 2013; **C-0187**, Boskalis Presentation, "Building with Nature," 28 August 2019; Tr. Day

Date	Event
	1, pp. 27:4-29:4 (Claimant's Opening Statement); **CD-0001**, Claimant's Opening Presentation, pp. 20-23; Selby ER1, ¶¶ 91-92; ADBP ER, Section 3.3, p. 3; Lomond & Hill ER1, ¶ 3.4.1.)
29 April 2014	Odyssey determines that the original Concession is both over- and under-inclusive with respect to the Don Diego Deposit. (*See* Claimant's Memorial, ¶ 42.) ExO applies for and is granted two additional mining Concessions, referred to as Don Diego Norte and Don Diego Sur. (**C-0092**, Concession Title nos. 242994 and 242995, 29 April 2014**.**)
30 June 2014	Mr. Lamb delivers his Technical Report in the form of a Canadian NI 43-101, classifying a Mineral Resource totaling [redacted] (**C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014; *see also* Claimant's Memorial, ¶¶ 52-55.) The report only addresses the original Concession, not the Don Diego Norte or Sur Concessions.
July 2014	Odyssey representatives have a series of meetings about the Don Diego Project [redacted] (Gordon WS2, ¶¶ 6-9; **C-0378**, [redacted] 11 July 2014**.**)
29 July 2014	[redacted] estimates the net present value of the Don Diego Project at [redacted], using a discounted cash flow model, before discounting for project development stage. (**C-0090**, Investment Bank Valuation, 29 July 2014, p. 1.)
21 August 2014	Mr. Lamb releases an updated Mineral Resource estimate that includes the Don Diego Norte Concession. (**C-0223**, Don Diego West Resource Estimate With Northern Extension, 21 August 2014**.**) When the Don Diego Norte Concession is included, the total Mineral Resource estimate comprises [redacted]

Date	Event
	[redacted] (**C-0223**, Don Diego West Resource Estimate With Northern Extension, 21 August 2014.)
3 September 2014	ExO submits its first Manifestación de Impacto Ambiental ("**MIA**"; in English, Environmental Impact Statement) to Mexico's Secretaría de Medio Ambiente y Recursos Naturales ("**SEMARNAT**"). (**R-0024**, Resumen ejecutivo de MIA 2014 presentado el 3 de septiembre de 2014; **R-0027**, MIA Don Diego 2014. *See also* Claimant's Memorial, ¶ 107, and Annex A; Lozano WS1, ¶¶ 21, 32; [redacted].)
7 – 11 September 2014	[redacted] hold a series of meetings in Mexico City [redacted] interest in acquiring an equity interest in the Don Diego Project. (Gordon WS2, ¶ 14.)
May 2015	[redacted]
June 2015	Mr. Pacchiano illegally "requests" ExO to withdraw the MIA and re-submit it with letters of support from different local organizations. (Tr. Day 1, pp. 230:13-231:8 (Spanish Tr.), pp. 202:17-203:8 (English Tr.) (C. Lozano); Gordon WS1, ¶ 70; Lozano WS1, ¶¶ 40-42; [redacted]; **C-0389**,

Date	Event
	Email chain between G. Stemm and R. Jaime Barrera re Question for Alonso, 21 October 2015; Herrera ER1, ¶¶ 58-59; *see also* Claimant's Memorial, ¶¶ 129-132.) ExO acquiesces because the subtext to Mr. Pacchiano's request is that the MIA will otherwise be denied. (Gordon WS1 ¶ 72; Gordon WS2, ¶¶ 50-52; Lozano WS1, ¶ 43.)
30 July 2015	ExO applies to release areas of the Concession, which are on the periphery of the deposit, where exploration data indicated the ore was less commercially viable. (**C-0124**, Solicitud de Reduccion, Don Diego 240744, 30 July 2015.) The application is granted in February 2016, thereby reducing the original Concession area by approximately 70%. (Gordon WS, ¶¶ 9, 37; Lozano WS, ¶ 17; **C-0013**, Concession Title no 244813, 15 February 2016.)
21 August 2015	ExO finalizes submission of the second MIA, which is the operative MIA for these proceedings. (**C-0002**, MIA, 21 August 2015; **C-0002.01-15**, MIA, 21 August 2015, Annexes 1-15.) ExO's dredging plan is limited to an area of 1 km^2 per year which, over 50 years, represents just 0.12% of the Concession area. (Pliego ER1, ¶¶ 11, 35Tr. Day 1, pp. 22:21-25:8 (Claimant's Opening Statement); *see also* **CD-0001**, Claimant's Opening Presentation, p. 13; **CD-0003**, Expert Presentation of Vladimir Pliego, p. 7; Tr. Day 4, pp. 974:10-975:2 (Spanish Tr.), pp. 839:20-840:11 (English Tr.) (V. Pliego).)
27 August 2015	Rafael Pacchiano is named Secretary of SEMARNAT. (**C-0132**, "Nombran a Rafael Pacchiano Alamán secretario de Semarnat," El Imparcial, 27 August 2015.)

Date	Event
22 September 2015	Odyssey issues [redacted] for developing the Mineral Resource at Don Diego. (**C-0134**, [redacted], 22 September 2015.)
27 January 2016	Secretary Pacchiano is labeled the "controversial figure" behind the Tajamar Wetlands scandal in Quintana Roo that saw a developer raze wetlands despite conservation requirements. (**C-0397**, "Rafael Pacchiano, el 'sexy' y polémico funcionario cuestionado por la destrucción del manglar en Cancún," Yahoo! News, 27 January 2016).) For other examples of public criticism of Pacchiano, see: **C-0091**, "Revés al medio ambiente: México autoriza la explotación de la mina Los Cardones," Ecoticias, 1 August 2014; **C-0159**, E. Malkin, "Before Vaquitas Vanish, a Desperate Bid to Save Them," The New York Times, 27 February 2017; **C-0395**, S. Rosagel, "Rafael Pacchiano: de 'Juanito' a titular de la Semarnat," SinEmbargo, 25 January 2016; **C-0396**, "Nunca hubiera autorizado un proyecto como el Malecón Tajamar, dice el titular de la Semarnat," Animal Político, 26 January 2016; **C-0398**, A. Aguirre, "¿Ecocidio en Tajamar?," El Economista, 27 January 2016; **C-0399**, M. Ureste, "Las 10 claves que debes saber sobre el conflicto ecológico por el Manglar Tajamar," Animal Político, 29 January 2016; **C-0419**, R. Vergara, "La cara oscura del Nevado de Toluca," Proceso, 8 December 2016; **C-0421**, I. Lira, "La agonía de la vaquita marina se aceleró con el PVEM en Semarnat, acusan Greenpeace y especialista," SinEmbargo, 21 March 2017; **C-0442**, "El teporingo, especie endémica de México, se ha extinguido, informa la UAEM; se adelantó a la vaquita," SinEmbargo, 28 September 2018.
January – February 2016	[redacted] (Gordon WS2, ¶¶ 22-23.)

Date	Event
28 February 2016	ExO and CONANP meet to discuss ExO's written responses to the issues raised by CONANP about the Project. (**C-0007**, Letter from ExO to SEMARNAT responding to CONANP's observations, 11 December 2015.) At the end of the meeting, CONANP says that ExO has satisfactorily addressed them, and it does not oppose the Project. (Lozano WS1, ¶¶ 62-63; Tr. Day 1, pp. 272:18-274:19 (Spanish Tr.), pp. 237:8-238:22 (English Tr.) (C. Lozano); [redacted] Tr. Day 7 Tr., pp. 1853:3-1854:14 (Spanish Tr.), pp. 1660:21-1662:1 [redacted] Tr. Day 2, pp. 363:3-365:19 (Spanish Tr.), pp. 312:2-314:1 (English Tr.) [redacted])
11 March 2016	[redacted]
Mid-March 2016	With the regulatory deadline for SEMARNAT to decide ExO's MIA rapidly approaching, ExO representatives Alonso Ancira, Moisés Koltheniuk, and Dr. Claudio Lozano meet with Secretary Pacchiano to discuss ExO's MIA. (Lozano WS1, ¶¶ 65-67; Lozano WS2, ¶ 25; Gordon WS1, ¶ 79.) When Secretary Pacchiano hedges on whether the MIA will be approved, Mr. Ancira warns that ExO may have no choice but to compel SEMARNAT to act via Mexican courts. Secretary Pacchiano becomes visibly upset and abruptly ends the meeting. (Tr. Day 1, pp. 231:9-232:10 (Spanish Tr.), pp. 203:9-204:4 (English Tr.) (C. Lozano); Lozano WS1, ¶¶ 65-67; Gordon WS1, ¶ 79; *see also* Claimant's Memorial, ¶¶ 143-145; *see also* **C-0405**, Email from D. De Narvaez to J. Longley re Richard, 22 March 2016.)

Date	Event
Late March 2016	Earlier in March, [redacted] the DGIRA was ready to issue a conditional approval of the Don Diego Project (with the mitigation measures). (Tr. Day 7, pp. 1807:22-1808:22 (Spanish Tr.), pp. 1625:6-1626:8 (English Tr.) [redacted] Consistent with the *nota informativa*, a decision approving the MIA was being drafted. [redacted] [redacted] [redacted]
6 April 2016	Worried about how the meeting with Secretary Pacchiano ended, ExO representatives [redacted] (Lozano WS1, ¶ 69.) [redacted] (Lozano WS1, ¶¶ 69-70; [redacted]

Date	Event
7 April 2016	SEMARNAT issues the First Denial. (**C-0008**, SEMARNAT Denial Decision, 7 April 2016.)
29 April 2016	ExO petitions SEMARNAT to review and reconsider the First Denial. (**C-0149**, Letter from ExO to SEMARNAT, 29 April 2016; **R-0141**, Recurso de Revisión 74/2016 promovido por ExO en contra de la resolución del 7 de abril de 2016.)
May 2016	ExO representatives meet with Secretary Pacchiano regarding ExO's review petition. The meeting goes better, and Secretary Pacchiano tells them that he will support the Project and grant the MIA but wants to wait until after the Thirteenth United Nations Conference of the Parties to the Convention on Biological Diversity ("**COP13**") takes place at the end of the year. (Lozano WS1, ¶¶ 74-75; *see also* Gordon WS1, ¶ 83.) Mexico is hosting the COP13, and Secretary Pacchiano is concerned about the "optics" of approving a "mining project" before it occurs. (Lozano WS1, ¶ 75.)
9 June 2016	ExO submits a set of papers collectively entitled a "Technical & Scientific Report" prepared by world-leading experts, constituting a comprehensive library of responses to the issues SEMARNAT listed in the First Denial. (**C-0151**, Technical and Scientific Report, 9 June 2016; Claimant's Memorial, ¶¶ 158-159.)
December 2016	The COP13 conference takes place in Cancún, Mexico. (Lozano WS1, ¶ 75.)
27 January 2017	ExO petitions the TFJA to review SEMARNAT's failure to answer the review petition. (Lozano WS1, ¶ 76; Gordon WS1, ¶ 84; Gordon WS2, ¶ 27.)

Appendix Two

Date	Event
27 February 2017	SEMARNAT rules on ExO's review petition and upholds the First Denial. (**C-0160**, SEMARNAT Denial Resolution, 27 February 2017.)
6 June 2017	ExO amends its petition before the TFJA, requesting annulment of the First Denial. (**C-0019**, Amendment to the annulment petitions of the 2016 Denial, 6 June 2017.)
16 August 2017	[redacted]
26 September 2017	[redacted]
October 2017	Encouraged by the results of the assay testing, [redacted]

Date	Event
	[redacted] (Gordon WS2, ¶¶ 33-34.)
21 March 2018	The TFJA unanimously vacates the First Denial. (**C-0170**, TFJA Ruling, 21 March 2018.)
13 April 2018	SEMARNAT is notified of the TFJA's annulment decision. (**C-0470**, Informational Note (Tarjeta Informativa), 18 April 2018.)
18 April 2018	SEMARNAT issues a *tarjeta informativa* declaring that, in the face of the TFJA's decision, it is going to deny the Don Diego MIA again. (**C-0470**, Informational Note (Tarjeta Informativa), 18 April 2018; Tr. Day 2, pp. 316:7-317:1, 384:3-385:13 (Spanish Tr.), pp. 271:21-272:13, pp. 329:20-331:6 (English Tr.) ([redacted].) As reflected in the *tarjeta informativa,* on or around the time SEMARNAT issues the press release, Secretary Pacchiano orders the DGIRA to prepare a new decision denying the MIA. Undersecretary Garcíarivas Palmeros and Amado Ríos Valdez deliver those directions to the DGIRA at Secretary Pacchiano's behest. [redacted]
July 2018	[redacted] (Gordon WS2, ¶¶ 36-37.) [redacted]

Date	Event
September 2018	In response to a journalist's question at a conference in Los Cabos, Baja California, Secretary Pacchiano publicly declares that ExO's MIA will be denied again. (**C-0174**, Transcript of Pacchiano Public Statements, September 2018; **C-0176**, Los Cabos, September 2018.)
12 October 2018	SEMARNAT issues the Second Denial. (**C-0009**, SEMARNAT Denial Decision, 12 October 2018.) That same day, Secretary Pacchiano uses his personal Twitter account to re-tweet SEMARNAT's summary of the Second Denial. (**C-0177**, SEMARNAT Twitter Screenshot/R. Pacchiano Retweet, 18 October 2018.) This is the first time Secretary Pacchiano has ever shared a link to one of SEMARNAT's MIA decisions. (Claimant's Memorial, ¶ 178.)
4 January 2019	Odyssey files its Notice of Intent to Submit a Claim to Arbitration Under Chapter Eleven of the North American Free Trade Agreement.
5 April 2019	Odyssey files its Notice of Arbitration.