United Nations Convention on the Law of the Sea

Commission on the Limits of the Continental Shelf

SUMMARY OF RECOMMENDATIONS OF THE COMMISSION ON THE LIMITS OF THE CONTINENTAL SHELF IN REGARD TO THE SUBMISSION MADE BY THE ORIENTAL REPUBLIC OF URUGUAY ON 7 APRIL 2009[1]

Recommendations prepared by the Subcommission established for the consideration of the Submission made by Uruguay

Approved by the Subcommission on 6 November 2015

Approved by the Commission, with amendments, on 19 August 2016

[1] The aim of this Summary is to provide information that is not of a confidential or proprietary nature in order to facilitate the function of the Secretary-General, in accordance with Rule 11.3 of Annex III to the Rules of Procedure of the Commission (CLCS/40/Rev.1). This Summary is based on excerpts of the Recommendations and may refer to material not necessarily included either in the full Recommendations or this Summary.

TABLE OF CONTENTS

Glossary of Terms

60 M formula line	Line delineated by reference to fixed points determined at a distance of 60 nautical miles from the foot of the continental slope
60 M formula point	Fixed point determined at a distance of 60 nautical miles from the foot of the continental slope
200 M line	Line at a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured
2,500 m isobath	Line connecting the depth of 2,500 metres
Article 76	Article 76 of the Convention
Baselines	Baselines from which the breadth of the territorial sea is measured
BOS	Base of the continental slope
Commission	Commission on the Limits of the Continental Shelf
Convention	United Nations Convention on the Law of the Sea of 10 December 1982
Depth Constraint	Constraint line determined at a distance of 100 M from the 2,500 m isobath
Distance Constraint	Constraint line determined at a distance of 350 M from the baselines
DOALOS	Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations
FOS	Foot of the continental slope
Guidelines	Scientific and Technical Guidelines of the Commission (CLCS/11 and CLCS/11/Add.1)
M	Nautical mile
Rules of Procedure	Rules of Procedure of the Commission on the Limits of the Continental Shelf (CLCS/40/Rev.1)
Secretary-General	Secretary-General of the United Nations
Sediment thickness formula line	Line delineated by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope
Sediment thickness formula point	Fixed point at which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from that point to the foot of the continental slope

(page left intentionally blank)

I. INTRODUCTION

1 On 7 April 2009, the Oriental Republic of Uruguay (hereafter referred to as "Uruguay"), submitted to the Commission on the Limits of the Continental Shelf ("the Commission"), through the Secretary-General,[2] information on the limits of the continental shelf beyond 200 M from the baselines from which the breadth of the territorial sea is measured, in accordance with paragraph 8 of article 76 of the Convention (the "Submission").

2 The Convention entered into force for Uruguay on 16 November 1994.

3 The Submission was for the area to the south-east of Uruguay in the South Atlantic Ocean.

4 On 21 April 2009, the Secretary-General issued Continental Shelf Notification CLCS.21.2009, giving due publicity to the Executive Summary of the Submission in accordance with rule 50 of the Rules of Procedure. Pursuant to rule 51 of the Rules of Procedure, the consideration of the Submission was included in the agenda of the twenty-fourth session of the Commission.

5 In a note verbale dated 16 June 2009, Uruguay informed the Secretariat[3] that it would make a presentation to the Commission during the twenty-fourth session of the Commission.

6 Pursuant to section 2 of Annex III to the Rules of Procedure, the presentation on the Submission was made to the plenary of the twenty-fourth session of the Commission on 25 August 2009, by Mr. Pedro Vaz Ramela, Head of Delegation, Deputy Minister of Foreign Affairs; Mr. Carlos Mata Prates, Head of the Office for Coordination of the Continental Shelf Survey Project; and Admiral Manuel Raul Burgos Lezama, Chief of General Staff, Uruguayan Navy. The Delegation of Uruguay ("the Delegation") also included a number of advisers. In addition to elaborating on substantive points of the Submission, Mr. Prates indicated that Mr. Galo Carrera, a Member of the Commission, had assisted Uruguay by providing scientific and technical advice with respect to the Submission.

7 Mr. Prates informed the Commission that the area of the Submission was not the subject of any dispute. In this connection, he informed the Commission that the delimitation of maritime boundaries between Uruguay and Brazil had been concluded on 12 June 1975, and amended on 29 July 2005, to extend the boundary to the outer limits of their continental shelves. With regard to Argentina, Mr. Prates stated that the Treaty Concerning the Rio de la Plata and the Corresponding Maritime Boundary had been signed on 19 November 1973, and pointed out that the lateral border with Argentina between 200 and 350 M, defined by provisions of article 70 of that Treaty, had not yet been delineated. He indicated that the consideration of the Submission would be without prejudice to the future delimitation of the boundary between the two States. In this context, the Commission received and took note of the contents of note verbale No. 287/09/600 from the Permanent Mission of Argentina to the United Nations, dated 21 August 2009, requesting that recommendations be issued without regard to the

[2] On whose behalf the Submission was received by the Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations.

[3] Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations.

delimitation between States, in accordance with paragraph 4(a) of Annex I to the Rules of Procedure.[4]

8 The Commission addressed the modalities for the consideration of the Submission. It decided that, as provided for in article 5 of Annex II to the Convention and in rule 42 of the Rules of Procedure, the Submission would be addressed through the establishment of a Subcommission. The Subcommission was subsequently established on 1 April 2011, during the twenty-seventh session of the Commission.

9 The following members of the Commission were appointed as members of the Subcommission: Messrs. Francis L. Charles, Peter Croker, Emmanuel Kalngui, Yuri Borisovitch Kazmin, Wenzheng Lyu, Sivaramakrishnan Rajan, and Philip Alexander Symonds. The Subcommission elected Mr. Charles as its Chairperson and Messrs. Rajan and Symonds as its Vice-Chairpersons.

10 The term of the 21 members of the Commission elected in 2007 expired on 15 June 2012. On 6 and 7 June 2012, the twenty-second Meeting of States Parties elected 20 members of the Commission for a term of five years (SPLOS/251, paras. 81-92). At the request of the Group of Eastern European States, the election of one member of the Commission was postponed to allow for additional nominations from that group.

11 The change in membership of the Commission resulted in three vacancies in the composition of the Subcommission. The Commission subsequently appointed members to replace Messrs. Peter Croker, Yuri Borisovtich Kazmin and Philip Alexander Symonds. The membership of the Subcommission became as follows: Messrs. Francis L. Charles, Ivan F. Glumov, Richard Thomas Haworth, Emmanuel Kalngui, Wenzheng Lyu, and Sivaramakrishnan Rajan. The Subcommission subsequently re-elected Mr. Charles as its Chairperson and Mr. Rajan as its Vice-Chairperson. Mr. Haworth was elected as the other Vice-Chairperson. Following a Special Meeting of States Parties to the Convention, held on 19 December 2012 (SPLOS/255, paras 9-12), the Commission appointed Mr. Szymon Uścinowicz as the seventh member of the Subcommission, during its thirty-first session.

12 During its thirty-fourth session, the Commission appointed Mr. Richard Thomas Haworth as a member of the Subcommission established to consider the joint submission by France and South Africa, in respect of the area of the Crozet Archipelago and the Prince Edward Islands. The Commission also decided that Mr. Haworth would no longer serve as a member of the Subcommission established to consider the Submission made by Uruguay, but agreed that he would continue to assist that Subcommission as an expert in geophysics. The Commission appointed Mr. Walter R. Roest as a member of the Subcommission to fill the vacancy caused by the transfer of Mr. Haworth. Mr. Roest was subsequently elected as Vice-Chair of the Subcommission, in place of Mr. Haworth.

13 In a letter dated 19 February 2014, Mr. Rajan informed the Chair of the Commission of his resignation as a member of the Commission. During the thirty-fourth session of the Commission, Mr. Uścinowicz was elected by the Subcommission to replace Mr. Rajan as Vice-Chair.

[4] The note verbale from Argentina is available online at:
http://www.un.org/depts/los/clcs_new/submissions_files/submission_ury_21_2009.htm

14 During the twenty-fourth Meeting of States Parties to the Convention, held in June 2014, the meeting elected Mr. Rasik Ravindra to fill the vacancy resulting from the resignation of Mr. Rajan (SPLOS/277 paras 104-109). During its thirty-fifth session, the Commission subsequently appointed Mr. Ravindra as the seventh member of the Subcommission.

15 The Subcommission was thus composed of the following members: Messrs. Francis L. Charles (Chair), Ivan F. Glumov, Emmanuel Kalngui, Wenzheng Lyu, Rasik Ravindra, Walter R. Roest (Vice-Chair) and Szymon Uścinowicz (Vice-Chair). Mr. Haworth has also assisted the Subcommission as an expert in geophysics.

16 Following its initial establishment, the Subcommission met from 6 to 8 April 2011, to commence its consideration of the Submission and to conduct a preliminary analysis of the Submission pursuant to paragraph 5(1) of Annex III to the Rules of Procedure. It determined that, given the volume and nature of the data contained in the Submission, the Subcommission would require additional time to examine all the data and prepare recommendations for transmittal to the Commission.

17 The Subcommission continued its examination of the Submission from the twenty-seventh to the thirty-ninth session. During these sessions, the Subcommission held thirty-eight meetings with the Delegation, posed questions in writing and presented preliminary considerations involving documents and presentations. The Subcommission also made a comprehensive presentation of its views and general conclusions arising from its examination of the Submission, in accordance with paragraph 10.3 of Annex III to the Rules of Procedure. During the course of the examination of the Submission by the Subcommission, the Delegation provided responses both in writing and as presentations, and submitted additional data and information.

18 The Subcommission approved its Recommendations on 6 November 2015, and submitted them to the Commission on 11 November 2015, for consideration and approval.

19 On 8 February 2016, the Subcommission made a presentation to the Commission on the Recommendations prepared by it. The Delegation subsequently made a presentation to the Commission on 9 February 2016, in accordance with paragraph 15.1 bis of Annex III to the Rules of Procedure.

20 The Commission prepared these Recommendations, which were approved, with amendments, on 19 August 2016, taking into consideration the procedures and the methodology outlined in article 76 and Annex II to the Convention and the following documents of the Commission: the Rules of Procedure and the Guidelines.

21 The Recommendations of the Commission are based on the scientific and technical data and other material provided by Uruguay in relation to the implementation of article 76. The Recommendations of the Commission only deal with issues related to article 76 and Annex II to the Convention and shall not prejudice matters relating to delimitation of boundaries between States with opposite or adjacent coasts, or prejudice the position of States which are parties to a land or maritime dispute, or application of other parts of the Convention or any other treaties.

22 The Commission makes these Recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf in accordance with paragraph 8 of article 76 of the Convention. The limits of the

continental shelf established by a coastal State on the basis of these Recommendations shall be final and binding.

23 Throughout the examination of the Submission, the Subcommission requested and received support from the Division of Ocean Affairs and the Law of the Sea, Office of Legal Affairs, including geographic information analysis and preparation of related illustrative maps and other illustrations.

II. CONTENTS OF THE SUBMISSION

A. Original Submission

24 The original Submission received on 7 April 2009, contained three parts: an Executive Summary; a Main Body which is the analytical and descriptive part; and Scientific and Technical Data.

B. Communications and additional material

25 In the course of the examination of the Submission by the Subcommission, the Delegation submitted additional material including, in response to questions, requests for clarification and written preliminary considerations of the Subcommission.

26 The most significant of this additional material was supplied in February 2013 when Uruguay provided updates to the Submission; in February 2014, Uruguay also provided a document entitled “Update of the Submission of República Oriental del Uruguay”; and in July 2015, Uruguay provided additional seismic data in support of its Submission.

III. EXAMINATION OF THE SUBMISSION BY THE SUBCOMMISSION

A. Examination of the format and completeness of the Submission

27 Pursuant to paragraph 3 of Annex III to the Rules of Procedure, the Subcommission examined and verified the format and completeness of the Submission.

B. Preliminary analysis of the Submission

28 Pursuant to paragraph 5 of Annex III to the Rules of Procedure, the Subcommission undertook a preliminary analysis of the Submission, in accordance with article 76 of the Convention and the Guidelines and determined that:

(i) The test of appurtenance was met based on the data and information provided by the Delegation;

(ii) The proposed outer limits of Uruguay’s continental shelf beyond 200 M consisted of the applicable distance constraint;

(iii) The construction of the outer limits of the continental shelf contained straight line segments not longer than 60 M in length;

(iv) The advice of any other member of the Commission and/or a specialist in accordance with rule 57 of the Rules of Procedure, or the cooperation of relevant international organizations, in accordance with rule 56, would not be sought at that time; and

(v) Additional time would be required to review all data and prepare its Recommendations during future sessions of the Commission.

C. Main scientific and technical examination of the Submission

29 Pursuant to paragraph 9, section IV of Annex III to the Rules of Procedure, the Subcommission conducted an examination of the Submission based on the Guidelines and evaluated the following:

(i) The data and methodology employed by the coastal State to determine the location of the foot of the continental slope;

(ii) The data and methodology used to determine the formula line delineated by reference to the outermost fixed points at each of which the thickness of sedimentary rocks was at least 1 per cent of the shortest distance from such point to the foot of the continental slope;

(iii) The data and methodology used to determine the constraint line at a distance of 350 M from the baselines;

(iv) The construction of the inner envelope of the formula and constraint lines;

(v) The delineation of the outer limit of the continental shelf by means of straight lines not longer than 60 M with a view to ensuring that only the portion of the seabed that satisfied all the provisions of article 76 of the Convention was enclosed;

(vi) The estimates of the uncertainties in the methods applied, with a view to identifying the main source(s) of such uncertainties and their effect on the Submission; and

(vii) Whether the data submitted were sufficient in terms of quantity and quality to justify the proposed limits.

30 In conducting its examination of the Submission, the Subcommission:

(i) proceeded with a detailed examination of the data and information used for the establishment of the outer limits of the continental shelf;

(ii) sought clarifications, where necessary, through exchanges with the Delegation;

(iii) presented preliminary views and conclusions to the Delegation; and

(iv) made a comprehensive presentation of its views and general conclusions to the Delegation, at an advanced stage of the examination of the Submission as provided for in paragraph 10.3 of Annex III to the Rules of Procedure.

IV. RECOMMENDATIONS OF THE COMMISSION WITH RESPECT TO URUGUAY

31 The Submission of Uruguay of 7 April 2009, relates to the region highlighted in Figure 1.

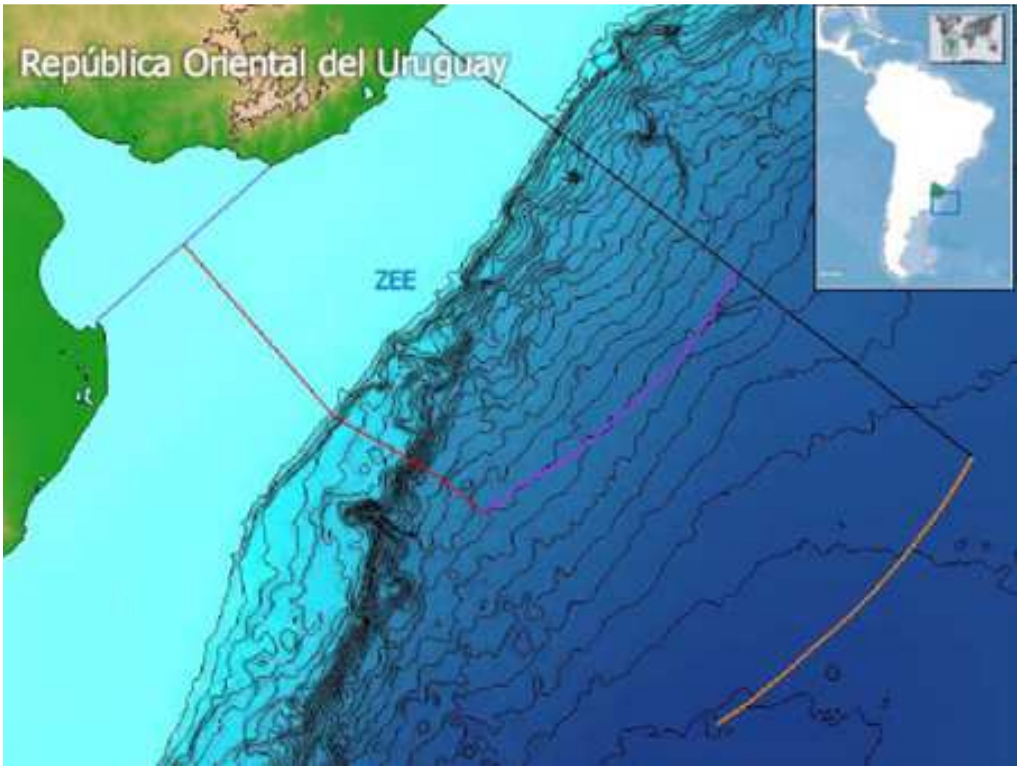

Figure 1. Location of Uruguay (see inset), lateral borders and isobaths, including the Exclusive Economic Zone (marked ZEE), the 200 M line (in purple) and 350 M constraint line (in orange) (Fig.1.1, Main Body).

1. Geographical and geological description of the region

32 The continental margin of Uruguay represents a passive volcanic type margin that was formed as a result of breakup of Gondwana and the opening of the Atlantic Ocean in the early Cretaceous period. It comprises two main sedimentary basins, namely the Pelotas Basin and Punta del Este Basin, separated by a system of northwest-southeast trending transfer faults, called the Rio de la Plata Transfer System (RPTS) (Figure 2).

Figure 2. Tectonic setting of the major basins of the continental margin of Uruguay (Figure 2.7, Main Body, after Urien & Zambrano, 1996).

33 Large wedges of Seaward Dipping Reflectors (SDR) and flat lying basalt flows are seen in the seismic sections in the Continent-Ocean Transition (COT) zone. According to Uruguay, two tectono-structural segments separated by the RPTS have been recognized in the continental margin of Uruguay, one to the north-east and one to the south-west. The RPTS has displaced or interrupted several geological features, notably the SDRs.

2. Determination of the foot of the continental slope (article 76, paragraph 4(b))

34 The FOS should be established in accordance with paragraph 4(b) article 76, of the Convention.

2.1 Considerations

35 In the initial Submission made on 7 April 2009, Uruguay included a set of 18 FOS points. Four of those FOS points (FOS_0001, FOS_0008, FOS_0011 and FOS_ 0017) were considered critical to the establishment of the outer edge of the continental margin beyond the 200 M limits of Uruguay. The critical FOS points were used to create 60 M formula arcs that extended beyond the 350 M distance constraint line. Thus, according to Uruguay, the 350 M constraint line delineates the outer limit of its continental shelf beyond 200 M (Figure 3).

36 In its Submission, Uruguay referred to paragraphs 5.4.4, 5.4.5 and 6.2.1 of the Guidelines and defined the BOS zone as the area where the continental slope dropped off into the abyssal plain.

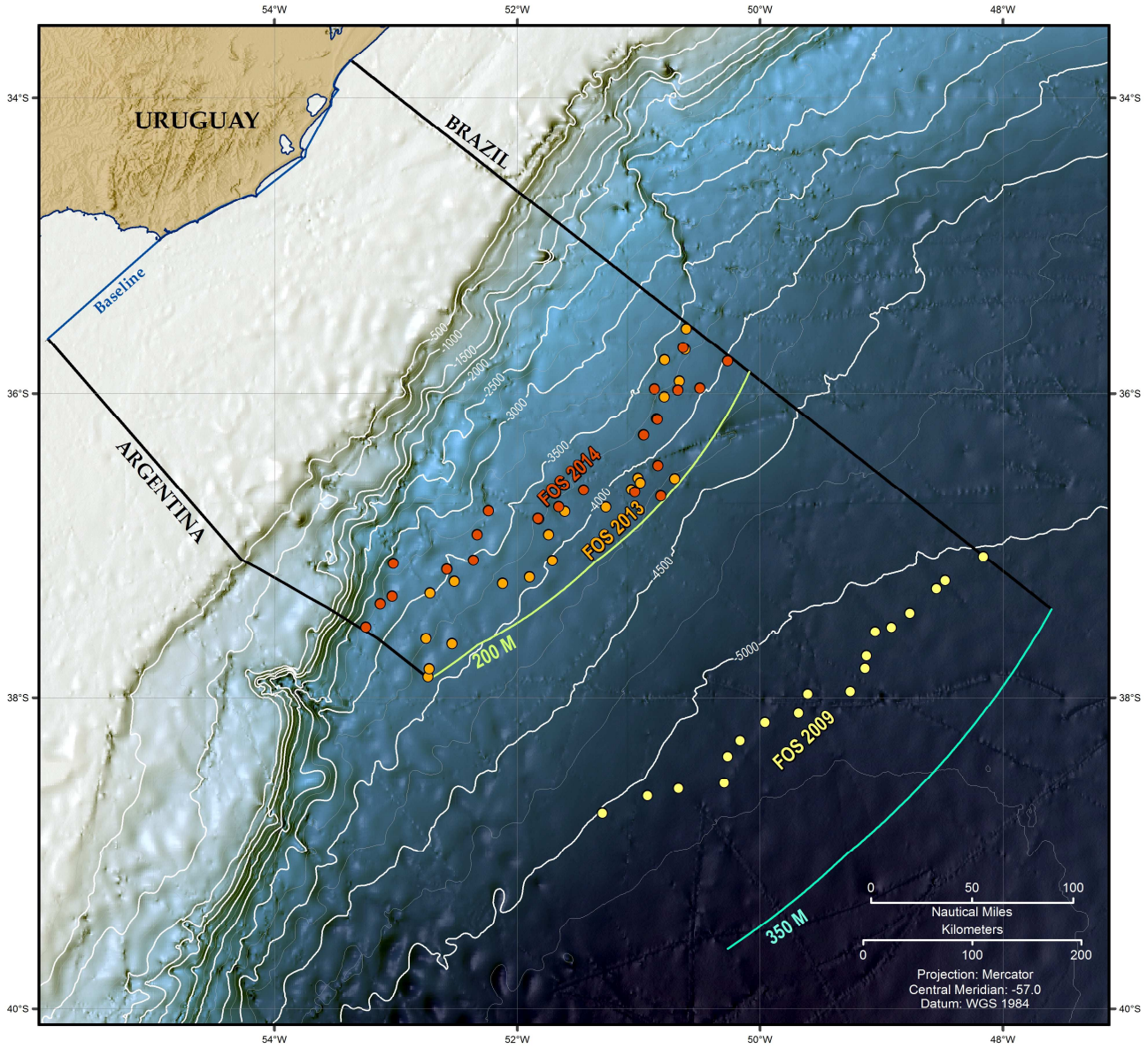

Figure 3(*). Location of the FOS points as contained in the original Submission of 2009 (yellow), in the update of 2013 (orange), and the update of 2014 (red).

(*) This illustrative map was prepared by the Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations, upon request by the Subcommission established to consider the Submission by Uruguay, on the basis of the submitted information. The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

37 On 11 August 2011, during a meeting with the Delegation, the Subcommission indicated that on the basis of the data provided, it did not find support for the BOS and resulting FOS locations submitted by Uruguay. The Subcommission suggested

that Uruguay explore more landward locations of significant changes in gradient indicative of the BOS.

38 The Delegation expressed the view that the sedimentary processes and the morphology of the margin did not allow discrimination between the continental slope and the continental rise. Therefore, in their view, the continental slope and rise were inseparable, such that the BOS could be located at the junction with the deep ocean floor.

39 The Subcommission, on the other hand, was of the view that, although there may be difficulties in distinguishing the continental slope from the rise along parts of the margin, the rise could not be included in the slope according to the provisions of Article 76 and the Guidelines. In addition, it considered that, along other parts of the margin, the continental slope and rise were, in fact, distinguishable. The Subcommission suggested that in those regions where the morphological approach to defining the FOS was not reliable, the evidence to the contrary approach for the determination of the FOS could be invoked, or at least should be investigated by the Delegation.

40 On 8 December 2011, the Delegation informed the Subcommission that it needed additional time to develop and apply a revised methodology for the identification of the foot of the continental slope, based on maximum change in gradient in the northern part of the margin and based on evidence to the contrary in the southern part of the margin. In this context, on 26 April 2012, Uruguay indicated that it needed additional time to acquire and process seismic data. Uruguay then submitted updates to the Submission in February 2013 (Figure 3).

41 In July and August 2013, the Subcommission repeatedly advocated for a more landward location and consistent methodology for the identification of the BOS.

42 Uruguay justified its approach for the identification of the BOS in a Technical Report dated 4 October 2013, recognizing that its margin was divided by the RPTS into two tectonic basins, namely the Punta del Este and Pelotas basins. It argued that, due to slope parallel currents and large Mass Transport Deposits (MTDs), the continental rise was not well developed in the northern margin and, therefore, the BOS should be placed in relation to the MTDs/debris flows on the lower continental slope. On the other hand, it defined the presence of contourite terraces on the lower continental slope as characteristic of the southern part of the margin.

43 The Subcommission did not agree with the general location of the BOS in the northern part of the margin as determined by Uruguay on the basis of MTDs. It considered that these sedimentary complexes were located within the rise, and did not constitute sufficient evidence for down slope processes.

44 In February 2014, Uruguay presented an update to its Submission and included 21 new FOS points, based on an analysis of morphological elements of the continental margin (Figure 3). In that update, Uruguay indicated that it had considered the use of evidence to the contrary in the determination of the FOS, but that it had decided to determine the BOS and FOS on morphological characteristics only. Hence, all FOS points presented were determined by the general rule, i.e. at the point of maximum change in gradient at the base of the continental slope.

45 In a letter dated 14 March 2014, the Subcommission indicated that it was in general agreement with regard to the location of the BOS and the FOS points, based on the morphological approach in the southern sector of the Uruguayan

margin. However, in the northern sector of the margin, the Subcommission asked for further clarification in support of the characterization of the morphological elements of the margin. In particular, the Subcommission did not agree with the location of some of the most seaward FOS points in that sector, including critical point FOS-09, located on line OCPLA009. The Subcommission had reached this conclusion based on the low gradients and the small changes in gradient associated with these particular FOS points. However, the Subcommission suggested that the maximum change in gradient within the BOS was located more landward, at a position that could be acceptable to the Subcommission. It also noted that, in order to assert the aforementioned conclusions, the Subcommission had relied on profile analyses and surface gradient calculations based on measured bathymetric data.

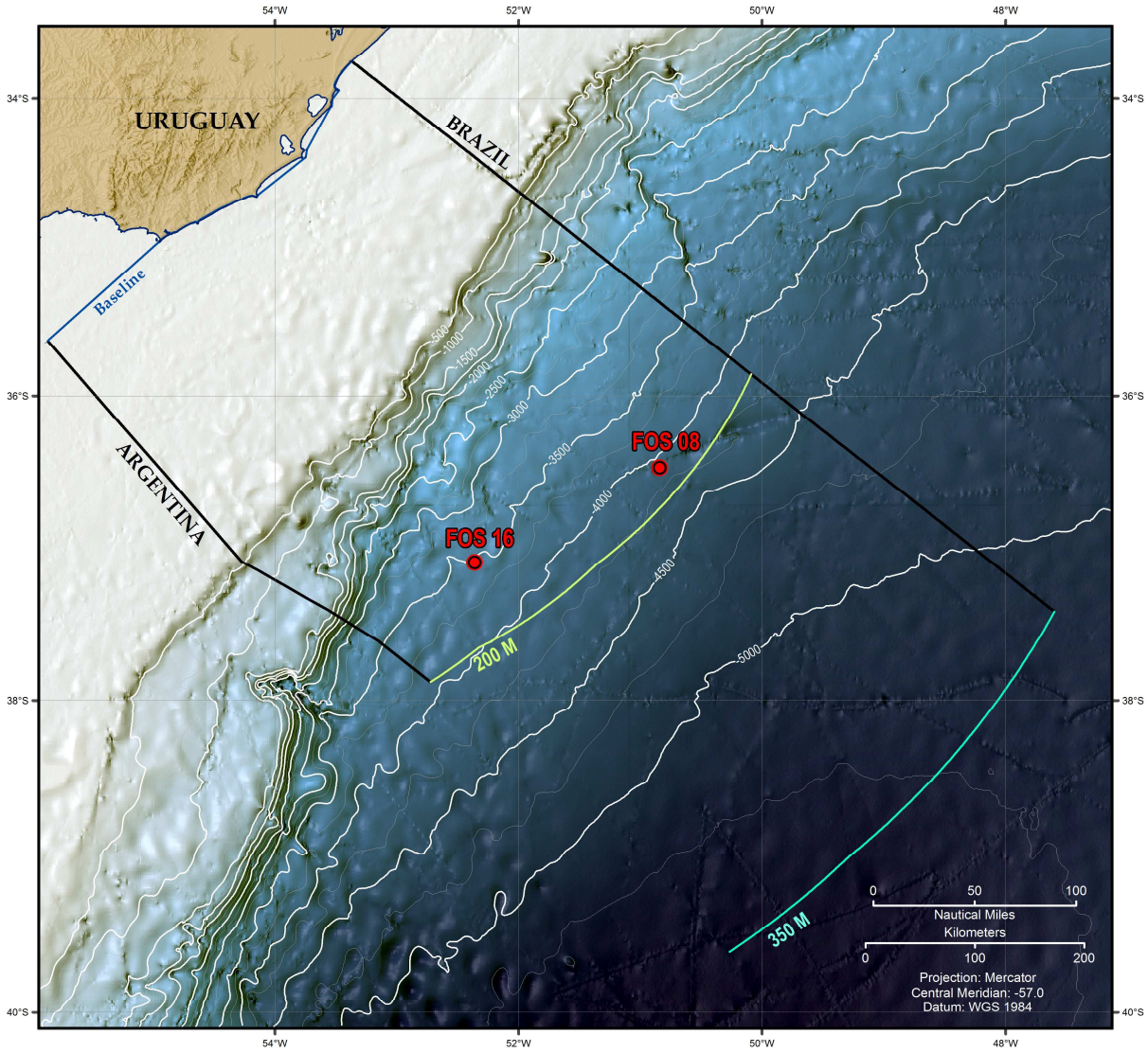

Figure 4(*). Location of the critical FOS points from which the outer edge of the continental margin is determined.

46 In a presentation made on 31 July 2014, Uruguay replaced critical point FOS 09 with FOS 08 and FOS 16 and confirmed in a letter, dated 7 October 2014, that it would determine sediment thickness formula points from these two foot of the continental slope points. The Subcommission agreed with the location of the base of the continental slope zone identified by Uruguay; in particular, it agreed with the locations of the critical FOS points FOS 08 and FOS 16, as submitted by Uruguay in its update of February 2014 (Figure 4).

2.2 Recommendations

47 Based on its consideration of the technical and scientific documentation contained in the Submission made by Uruguay and the additional data and information provided in the documents and presentations referred to above, the Commission concludes that the FOS points listed in Table 1, Annex I, fulfil the requirements of article 76 and Chapter 5 of the Guidelines. The Commission recommends that these FOS points should form the basis for the establishment of the outer edge of the continental margin of Uruguay.

3. Establishment of the outer edge of the continental margin (article 76, paragraph 4(a))

48 The outer edge of the continental margin of Uruguay should, for the purposes of the Convention, be established in accordance with paragraph 4(a) of article 76, of the Convention.

49 In establishing the outer edge of the continental margin, Uruguay, in its initial Submission of 7 April 2009, only invoked the application of the 60 M distance formula in accordance with paragraph 4(a)(ii) of article 76. In its presentation of 9 December 2011 to the Delegation, the Subcommission suggested that Uruguay consider the possibility of utilizing the sediment thickness formula to delineate the outer edge of the continental margin in accordance with paragraph 4(a)(i) of article 76 .

50 Uruguay subsequently decided to use the sediment thickness formula to establish the outer edge of the continental margin.

3.1 Application of the 1% sediment thickness formula (article 76, paragraph 4(a)(i))

51 In a letter dated 26 April 2012, Uruguay requested additional time to acquire the necessary seismic data for the determination of sediment thickness. Uruguay then provided updates to the Submission in February 2013, establishing the outer edge of the continental margin based on the sediment thickness formula.

52 Contingent upon the acceptance by the Subcommission of the location of the critical FOS points, the Subcommission and the Delegation exchanged views on the methodology needed to justify the sediment thickness formula points. In particular, the Subcommission referred to the requirements as set out in the Guidelines with respect to the identification of the top of basement, the depth conversion of seismic data and the documentation of the continuity between the sediments at the sediment thickness formula points and the sediments at the foot of the continental slope. In October 2014, Uruguay provided a first set of sediment thickness formula points based on this methodology.

53 In January 2015, Uruguay provided an updated set of sediment thickness formula points and indicated, in the same communication, that it was still analysing the recently collected COALEP14 seismic data. In this respect, Uruguay requested that

the updated sediment thickness formula points should not form the basis for the drafting of the recommendations until such time that those new analyses had been provided to the Subcommission.

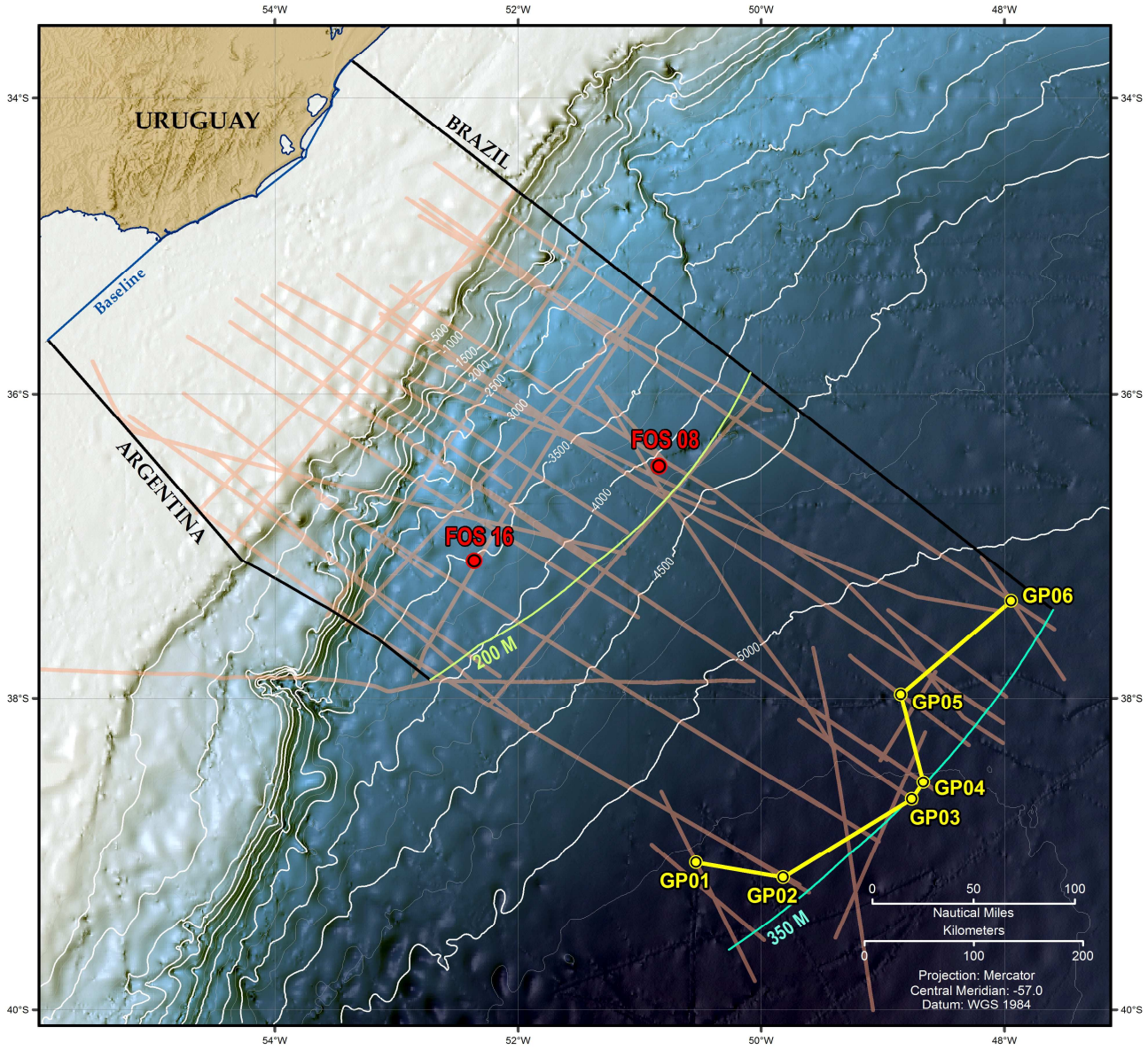

Figure 5(*). Seismic lines used by Uruguay together with the location of the sediment thickness formula points determined from the critical FOS points FOS 08 and FOS 16.

54 On 3 August 2015, Uruguay submitted six fixed points based on the sediment thickness formula as measured from the agreed FOS points FOS 08 and FOS 16 (Figure 5). Uruguay established these sediment thickness formula points (GP01 to GP06) based on multi-channel seismic lines COALEP14-01, LEPLAC_S32A, COALEP12-01, LEPLAC_S30, COALEP12-02 and BGR04-01sa, respectively.

55 The Subcommission examined the continuity of the sedimentary sequence between each of the outermost sediment thickness fixed points and the sediments at the foot of the continental slope. Uruguay provided composite seismic profiles linking each sediment thickness fixed point to the vicinity of the critical FOS point used to verify the 1% sediment thickness requirement. Taking into account the significant sediment thickness in the region of the BOS, the Subcommission observed that these profiles demonstrated a continuous sedimentary apron all along and across the margin and concluded that the criterion of sediment continuity was satisfied.

56 In addition, Uruguay provided a map of sediment thickness along its continental margin, based on the interpretation of selected seismic data (Figure 6). The Subcommission was satisfied that all sediment thickness formula points were connected by the same continuous sedimentary apron to the sediments at the foot of the continental slope across the entire margin.

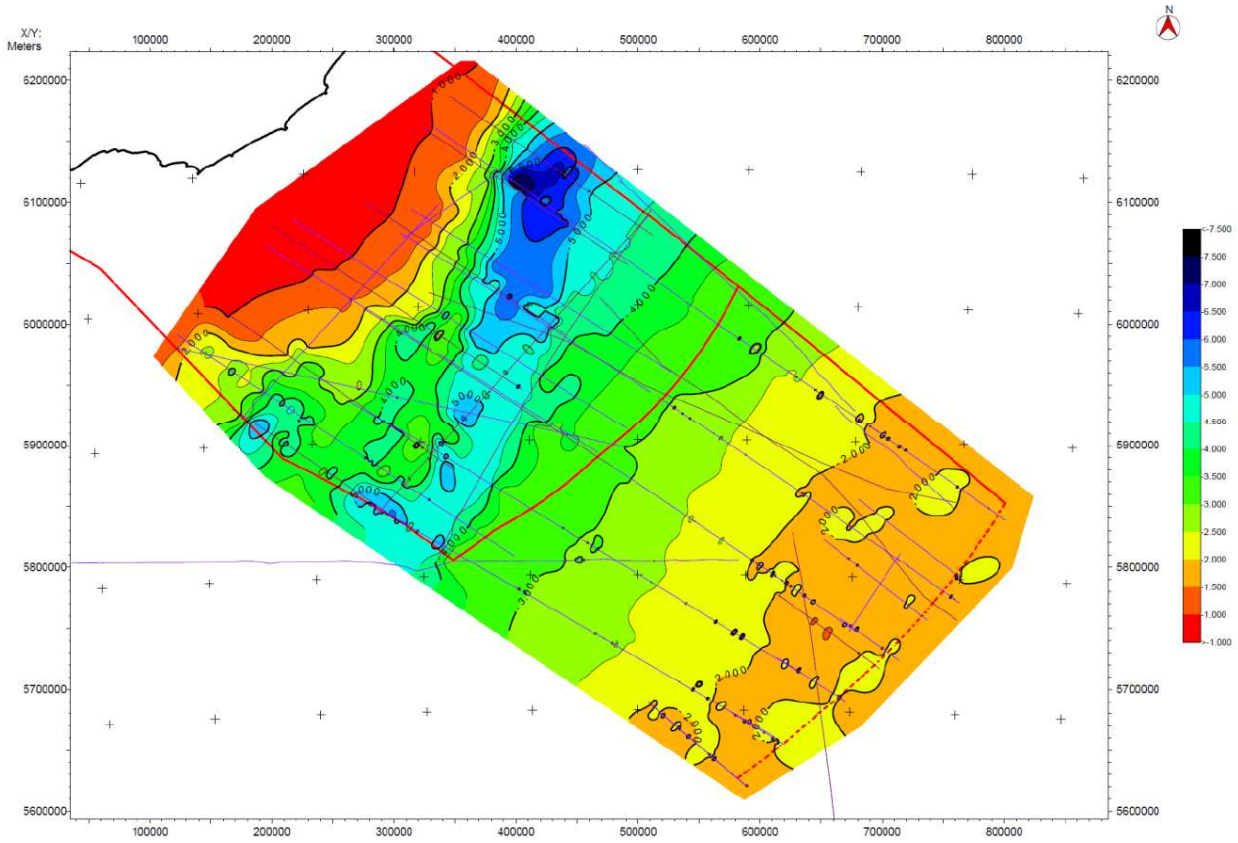

Figure 6. Map showing the thickness of the sediments in two-way-travel time. Note that the seismic lines used to construct this map are shown as thin lines.
(Figure 5.7, Update of the Submission of February 2014).

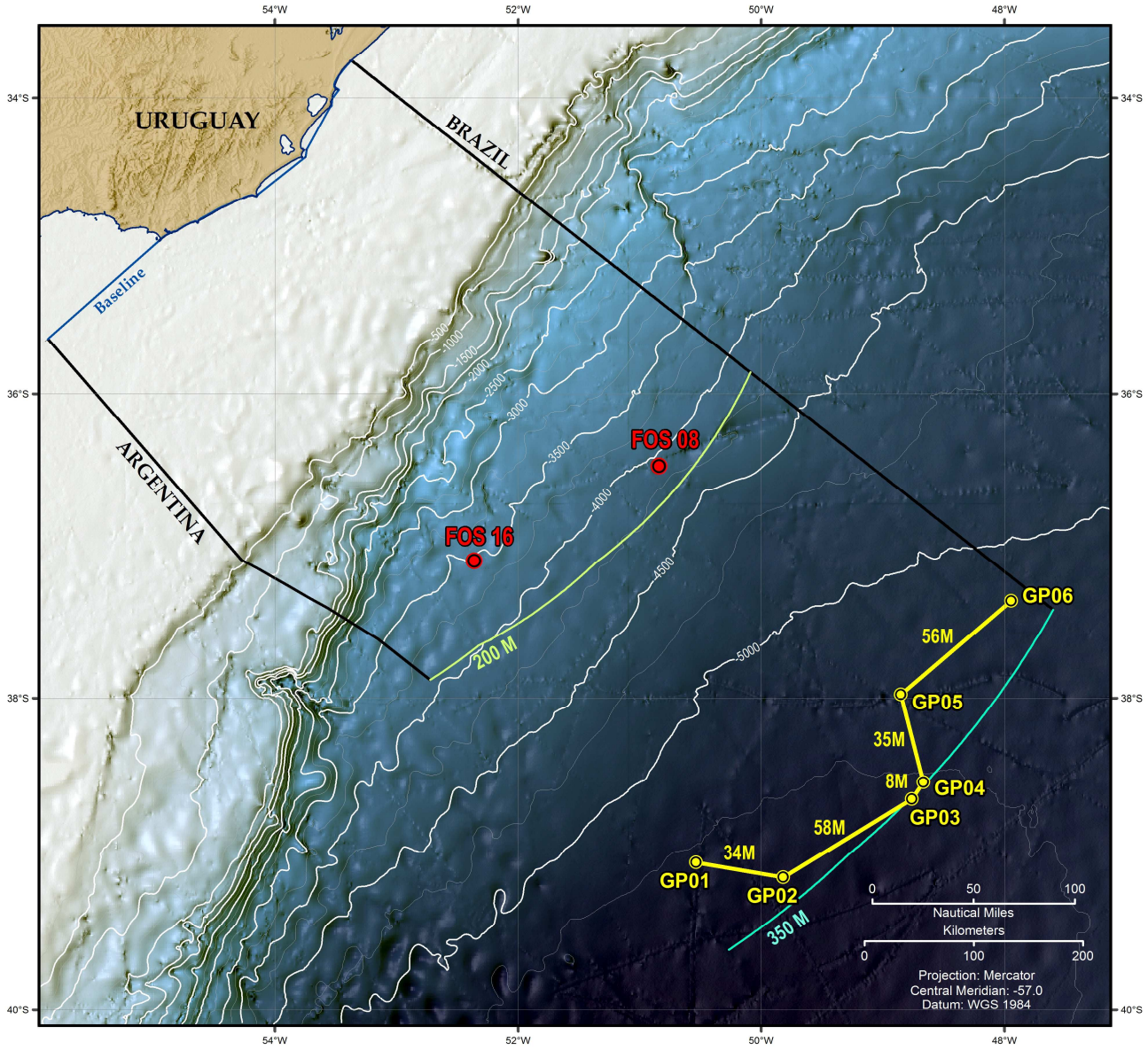

Figure 7(*). Outer edge of the continental margin delineated by straight lines not exceeding 60 M in length, connecting sediment thickness formula fixed points.

57 The Subcommission also examined the methodology employed by Uruguay in estimating the sediment thickness at each of the submitted sediment thickness formula points. Uruguay used interval velocities derived from the RMS stacking velocities based on the multi-channel seismic reflection data. These interval velocities, generated using industry-standard algorithms, were then used for the determination of the sediment thickness.

58 Along parts of the outer edge of the continental margin of Uruguay, the oceanic basement is covered by interbedded layers of lava flows and sediments. Paragraph 8.2.18 of the Guidelines indicates that in such areas where seismic signals from

the top of the basement are masked by interbedded lava, the coastal State may be assisted by an interpretation of the velocity structure to identify the top of the basement. For each of the sediment thickness formula points, the Subcommission requested and received from Uruguay detailed velocity analyses of the seismic data in its vicinity, including selected CDP gathers and velocity spectra. The significant increase in seismic velocity observed at the bottom of this seismic sequence was used by the Subcommission to verify the top of the basement interpretation as submitted by Uruguay. Based on the data and information provided, the identification of the top of the basement and the calculated sediment thickness for each of the sediments thickness formula points was verified by the Subcommission .

59 The Commission agrees with the procedure by which Uruguay established the sediment thickness formula points GP01 to GP06, as contained in Table 2, Annex I, utilizing FOS points FOS 08 and FOS 16. The Commission bases its conclusions on the data provided, the seismic interpretation, the methods of depth conversion and the distance calculations. This was facilitated by the high quality of the seismic data collected specifically in support of the Submission.

3.2 Configuration of the Outer Edge of the Continental Margin

60 The outer edge of the continental margin of Uruguay starts from GP01 in the south and continues in a general north-easterly direction to GP06 located south of the agreed maritime delimitation line between Uruguay and Brazil.

3.3 Recommendations

61 The outer edge of the continental margin beyond 200 M of Uruguay is based on sediment thickness formula points, as described in sections 3.1 and 3.2, in accordance with paragraph 7 article 76 of the Convention (Figure 7). The Commission recommends that these points be used as the basis for delineating the outer limits of the continental shelf in this region.

4. Application of the constraint criteria (article 76, paragraphs 5 & 6)

62 The fixed points comprising the line of the outer limits of the continental shelf shall be based on the outer edge of the continental margin, as described in sections 3.1 and 3.2, taking into consideration the constraints contained in paragraphs 5 and 6 of article 76, of the Convention. The fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4(a)(i) and (ii), either shall not exceed 350 M from the baselines from which the breadth of the territorial sea is measured, or shall not exceed 100 M from the 2,500 metre isobath.

63 For the outer limits of the continental shelf, Uruguay has invoked the distance constraint only.

64 The distance constraint line submitted by Uruguay is constructed by arcs at 350 M distance from the baselines from which the breadth of the territorial sea of Uruguay is measured. The Commission agrees with the methodology applied by Uruguay in the construction of this constraint line.

5. Outer limits of the continental shelf (article 76, paragraph 7)

65 The outer limits of the continental shelf of Uruguay are constrained by the 350 M line determined according to paragraph 64, above. Only one base point (point number p-10, depicted in Figure 8), contributes to the determination of fixed points on the outer limits of the continental shelf. As amended by the Delegation on 3 August 2015, the outer limits of the continental shelf of Uruguay consist of fixed points OL-URY-01 to OL-URY-27, connected by straight lines not exceeding 60 M in length (Figure 8). These fixed points are listed in Table 3, Annex I. All fixed points are established in accordance with article 76 of the Convention. They do not include points on any 200 M limit lines, or on any boundary lines with other coastal States.

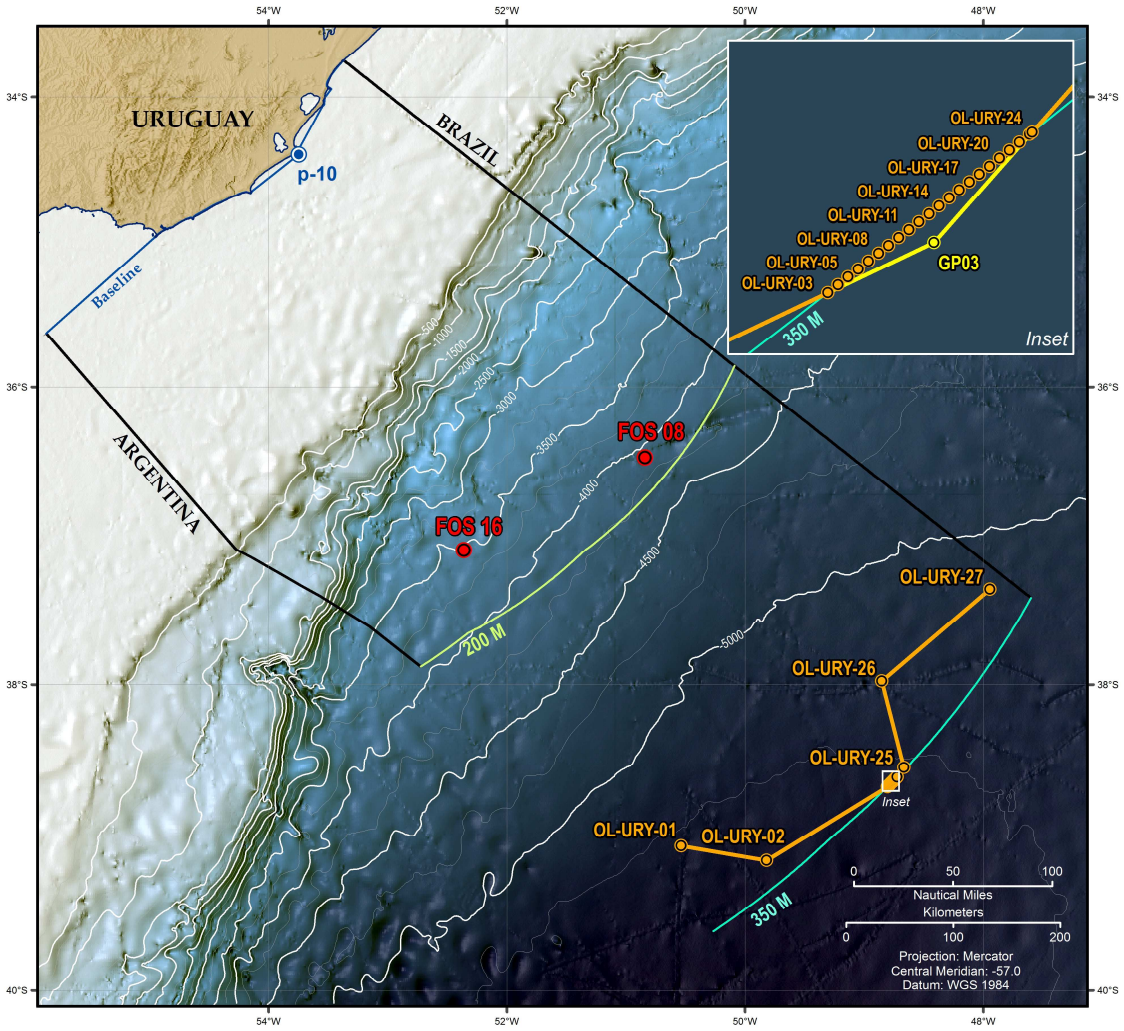

Figure 8(*). Outer limits of the continental shelf of Uruguay delineated by straight lines not exceeding 60 M in length, connecting sediment thickness formula fixed points (OL-URY-01 to OL-URY-02 and OL-URY-25 to OL-URY-27) and points located on the 350 M constraint line (OL-URY-03 to OL-URY-24, see inset).

6. Recommendations for the Oriental Republic of Uruguay (article 76, paragraph 8)

66 The Commission agrees with the determination of the fixed points listed in Table 2, Annex I, establishing the outer edge of the continental margin of Uruguay. The Commission recommends that the outer limits of the continental shelf of Uruguay be delineated in accordance with paragraph 7 of article 76 of the Convention by straight lines not exceeding 60 M in length, connecting fixed points, defined by coordinates of latitude and longitude. Further, the Commission agrees with the methodology and its accuracy as applied in delineating the outer limits of the continental shelf of Uruguay, including the determination of the fixed points listed in Table 3, Annex I, and the construction of the straight lines connecting those points.

67 The Commission recommends that the Oriental Republic of Uruguay proceeds to establish the outer limits of the continental shelf from fixed point OL-URY-01 to fixed point OL-URY-27, accordingly.

Annex I
Tables of coordinates of the foot of the continental slope points (Table 1), the fixed points of outer edge of the continental margin beyond 200 M (Table 2) and the outer limits of the continental shelf beyond 200 M (Table 3), as recommended by the Commission based on the Submission by Uruguay

Table 1. Coordinates of the foot of the continental slope points

FOS point	Water depth [m]	Latitude	Longitude	Art76 Provision
FOS08	4117.4	-36.479977	-50.841900	4(b)
FOS16	3551.4	-37.106172	-52.362480	4(b)

Table 2. Coordinates of the outer limits of the continental margin fixed points beyond 200 M

CM point	Longitude	Latitude	CM-related shot pt/line	Sediment thickness	Distance to next (M)	Article 76 Citerion	RelFOSpt/line	DisToFOS (m)
GP01	-50.536688	-39.0603333	SP 2,003/ COALEP14-01	2697.9m		4(a)(i)	FOS16/ OCPLA_0016	269628.7
GP02	-49.820517	-39.1534617	SP 526/ LEPLAC_S32A	3129.3m	33.9107	4(a)(i)	FOS08/ OCPLA_0008	310060.3
GP03	-48.763267	-38.6526451	SP 62,477/ COALEP12-01	3032.6m	57.9081	4(a)(i)	FOS08/ OCPLA_0008	303084.8
GP04	-48.667576	-38.5451745	SP 1,021/ LEPLAC_S30	3004.5m	7.8585	4(a)(i)	FOS08/ OCPLA_0008	299129.5
GP05	-48.851829	-37.9787109	SP 58,316/ COALEP12-02	2429.2m	35.0503	4(a)(i)	FOS08/ OCPLA_0008	242590.5
GP06	-47.944380	-37.3679400	SP 1,880/ BGR04-01sa	2766.2m	56.6418	4(a)(i)	FOS08/ OCPLA_0008	276321.4

Table 3. Coordinates of the outer limits of the continental shelf fixed points beyond 200 M and their corresponding foot of the slope points

OL point	Longitude	Latitude	Method	DisToNext(M)	Art76
OL-URY-01	-50.536688	-39.0603333	Fixed point from sediment thickness formula	0	76(4)(a)(i)
OL-URY-02	-49.8205168	-39.1534617	Fixed point from sediment thickness formula	33.91066	76(4)(a)(i)
OL-URY-03	-48.8059912	-38.6728115	Fixed point on 350 M contraint	55.56455	76(5)
OL-URY-04	-48.801897	-38.6696516	Fixed point on 350 M contraint	0.269977	76(5)
OL-URY-05	-48.7978063	-38.6664891	Fixed point on 350 M contraint	0.269977	76(5)
OL-URY-06	-48.7937189	-38.6633239	Fixed point on 350 M contraint	0.269979	76(5)
OL-URY-07	-48.7896351	-38.6601562	Fixed point on 350 M contraint	0.269979	76(5)
OL-URY-08	-48.7855547	-38.6569858	Fixed point on 350 M contraint	0.269978	76(5)
OL-URY-09	-48.7814778	-38.6538129	Fixed point on 350 M contraint	0.269979	76(5)
OL-URY-10	-48.7774047	-38.650637	Fixed point on 350 M contraint	0.26998	76(5)
OL-URY-11	-48.7733344	-38.6474591	Fixed point on 350 M contraint	0.269975	76(5)
OL-URY-12	-48.7692679	-38.6442784	Fixed point on 350 M contraint	0.269979	76(5)
OL-URY-13	-48.7652049	-38.641095	Fixed point on 350 M contraint	0.269979	76(5)
OL-URY-14	-48.7611453	-38.6379091	Fixed point on 350 M contraint	0.269979	76(5)
OL-URY-15	-48.7570893	-38.6347206	Fixed point on 350 M contraint	0.269979	76(5)
OL-URY-16	-48.7530373	-38.631529	Fixed point on 350 M contraint	0.26998	76(5)
OL-URY-17	-48.7489877	-38.6283358	Fixed point on 350 M contraint	0.269976	76(5)
OL-URY-18	-48.7449421	-38.6251395	Fixed point on 350 M contraint	0.269978	76(5)
OL-URY-19	-48.7409	-38.6219406	Fixed point on 350 M contraint	0.269978	76(5)
OL-URY-20	-48.7368614	-38.6187392	Fixed point on 350 M contraint	0.269979	76(5)
OL-URY-21	-48.7328263	-38.6155352	Fixed point on 350 M contraint	0.269978	76(5)
OL-URY-22	-48.7287947	-38.6123286	Fixed point on 350 M contraint	0.269978	76(5)
OL-URY-23	-48.7247666	-38.6091194	Fixed point on 350 M contraint	0.269979	76(5)
OL-URY-24	-48.7237385	-38.608299	Fixed point on 350 M contraint	0.068966	76(5)
OL-URY-25	-48.6675759	-38.5451745	Fixed point from sediment thickness formula	4.615081	76(4)(a)(i)
OL-URY-26	-48.8518292	-37.9787109	Fixed point from sediment thickness formula	35.05026	76(4)(a)(i)
OL-URY-27	-47.94438	-37.36794	Fixed point from sediment thickness formula	56.64181	76(4)(a)(i)