



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 INDONESIA IN RESPECT OF THE AREA NORTH WEST OF SUMATRA ON 16 JUNE 2008¹

Recommendations prepared by the Subcommittee established for the consideration
of the Submission made by Indonesia

Adopted by the Subcommittee on Indonesia, and submitted to the Commission on the
Limits of the Continental Shelf for consideration and approval by the Commission.

Adopted by the Commission on 28 March 2011

¹ The aim of this Summary is to provide information which is not of confidential or proprietary nature in order to facilitate the function of the Secretary-General of the United Nations in accordance with CLCS/40/Rev.1, Annex III, Section V, Rule 11.3. 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.

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I. INTRODUCTION

- 1 On 16 June, 2008, the Republic of Indonesia (“Indonesia”) submitted through the Secretary-General of the United Nations to the Commission on the Limits of the Continental Shelf, in accordance with article 76, paragraph 8 of the United Nations Convention on the Law of the Sea of 10 December 1982, information on the limits of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.
- 2 The Convention entered into force for Indonesia on 16 November 1994.
- 3 The Submission was for one area North West of Sumatra. According to the submitting State this is a partial submission and Indonesia will be preparing a number of other partial submissions to the Commission.
- 4 On 25 June 2008 the Secretary-General issued Continental Shelf Notification CLCS.12.2008.LOS in order to give due publicity to the Executive Summary of the Submission in accordance with rule 50 of the Rules of Procedure of the Commission. In conformity with rule 51 of the Rules of Procedure, the consideration of the Submission made by Indonesia was included in the agenda of the twenty-third session of the Commission.
- 5 The presentation of the submission to the Commission was made on 24 March 2009 by Arif Havas Oegroseno, Head of the Delegation, Director General for Legal Affairs and Treaties, Department of Foreign Affairs. He stated that the submission, which covered the area North West of Sumatra, was the first partial submission to be made by Indonesia, adding that submissions in respect of the area of the South of Sumba (Nusatenggara) and North of Papua would be made at a later stage. With regard to the latter, Mr. Oegroseno stated that Indonesia had started consultations with neighbouring States to explore the possibility of making a joint submission.
- 6 Mr. Oegroseno noted that the area of the partial submission in respect of North West of Sumatra was not under any dispute of maritime boundaries. In this regard, he recalled that, in 1974, Indonesia concluded an agreement with India relating to the delimitation of the continental shelf boundary between the two States.
- 7 Scientific and technical details of the submission made by Indonesia were presented by Rudolf W. Matindas, Head of National Coordinating Agency on Survey and Mapping; Dr. Khafid, Technical Expert, National Coordinating Agency on Survey and Mapping; and Dr. Yusuf Djajadihardja, Director of Technology for Natural Resources Inventory, Agency for Assessment and Application of Technology. The delegation of Indonesia also included several other scientific, legal and technical advisers. Following the presentation, members of the delegation of Indonesia responded to questions posed by members of the Commission.
- 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 of Indonesia would be addressed through the establishment of a subcommission, which was established on 27 March 2009.
- 9 The following members of the Commission were elected as members of the Subcommission for consideration of the Submission made by Indonesia: Peter F.

Croker, Indurlall Fagoonee, Mihai German, Emmanuel Kalngui, Yong Ahn Park, Fernando Manuel Maia Pimentel, and Kensaku Tamaki The Subcommission elected Mr. Croker as its Chairperson, and Mr. Kalngui and Mr. Park as its Vice-Chairpersons.

- 10 The Commission received and took note of the contents of the following note verbale transmitted to the Commission in relation to the Submission: note verbale No. NY/PM/443/1/2009 from the Permanent Mission of India addressed to the Secretary-General of the United Nations, dated 25 March 2009. The Commission decided to refer matters raised in this communication to the Subcommission established for the consideration of the Submission made by Indonesia.
- 11 Following its establishment, the Subcommission met without delay to conduct a preliminary examination of the Submission and the data accompanying it. It was determined that given the volume and nature of the data contained in the Submission, the Subcommission would require additional time, including resumed sessions, for the consideration of the Submission.
- 12 The Subcommission also prepared a set of procedures for the conduct of meetings with the Delegation. During its preliminary examination of the Submission, held on 31 March 2009 and from 6 to 9 April 2009, the Subcommission carried out the analysis of the data and other material. On the basis of that analysis, the Subcommission decided to continue its work during the twenty-fourth session.
- 13 The Subcommission carried out its examination of the Submission during the following sessions: twenty-third, twenty-fourth, twenty-fifth and twenty-sixth. During these sessions the Subcommission held seven meetings with the Delegation of Indonesia in which it posed ten questions in writing, presented three sets of preliminary considerations involving documents and PowerPoint presentations and one consolidated set of views and general conclusions covering the whole Submission. During the course of the examination of the Submission by the Subcommission and the Commission, the Delegation of Indonesia provided additional materials including documents, PowerPoint presentations as well as additional scientific and technical materials. During the examination of the Submission, the Subcommission requested and received support from the Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, in particular in the form of technical support by DOALOS Geographical Information Systems staff.
- 14 The Subcommission adopted its Recommendations on 16 August 2010, and submitted them to the Commission on 17 August 2010 for consideration and approval by the Commission.
- 15 The Delegation of Indonesia made a presentation to the Commission on 17 August 2010 in accordance with the Rules of Procedure of the Commission, rule 52 and paragraph 15 of Annex III.
- 16 The Commission prepared these Recommendations, which were adopted on 28 March 2011, taking into consideration the internal procedures and the methodology outlined in the following official documents of the Commission: the Rules of Procedure; the Scientific and Technical Guidelines and paragraph 6 of Annex II to the Convention.
- 17 The Commission makes these Recommendations to Indonesia in fulfilment of its mandate as contained in article 76, paragraph 8 of, and articles 3 and 5 of Annex II to the Convention.

- 18 The Commission makes its Recommendations recognising that the outer limits of the continental shelf as established by a coastal State on the basis of its Recommendations shall be final and binding according to article 76, paragraph 8, of the Convention.

II. CONTENTS OF THE SUBMISSION

A. Original Submission

- 19 The original Submission received on 16 June 2008 contained: an Executive Summary, a Main Body which is the analytical and descriptive part, and Scientific and Technical Data.

B. Communications and additional material

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

III. EXAMINATION OF THE SUBMISSION BY THE SUBCOMMISSION

A. Examination of the format and completeness of the Submission

- 21 Pursuant to paragraph 3 of Annex III, section III of the Rules of Procedure, the Subcommittee examined and verified the format and completeness of the Submission.

B. Preliminary analysis of the Submission

- 22 Pursuant to paragraph 5 of Annex III, section III to the Rules of Procedure, the Subcommittee undertook a preliminary analysis of the Submission, in accordance with article 76 and the Guidelines and concluded as follows:

- (i) The outer edge of the continental margin as established by the 1 per cent sediment thickness from the foot of the continental slope formula lies beyond 200 M, and therefore the test of appurtenance was satisfied by Indonesia;
- (ii) The proposed outer limits of Indonesia's extended continental shelf beyond 200 M consist of a number of 1 per cent sediment thickness formula points;
- (iii) The construction of the outer limits contains no straight line segments exceeding 60 M in length; and
- (iv) Additional time would be required to review all data and to prepare the recommendations during future sessions of the Commission.

C. Main scientific and technical examination of the Submission

- 23 The Subcommittee examined the Submission through the following processes:
- (i) Detailed examination of the data and information supporting every foot of the continental slope point, selected for the establishment of the outer edge of the continental margin and for the delineation of the proposed outer limits of the continental shelf following consideration of the applicable constraint;

- (ii) Seeking clarifications from the Delegation of Indonesia;
- (iii) Presenting preliminary conclusions to the Delegation of Indonesia;
- (iv) Making a comprehensive presentation of the views and general conclusions of the Subcommittee to the Delegation of Indonesia, at an advanced stage of the examination of the Submission.

IV. GENERAL PRINCIPLES ON WHICH THESE RECOMMENDATIONS ARE BASED

24 The Recommendations of the Commission are based on the scientific and technical data and other material provided by Indonesia 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 are without prejudice to matters relating to delimitation between States, or application of other parts of the Convention or any other treaties.

V. RECOMMENDATIONS

25 The Submission of Indonesia of 16 June 2008 relates to a single region – the area North West of Sumatra (Figure 1).

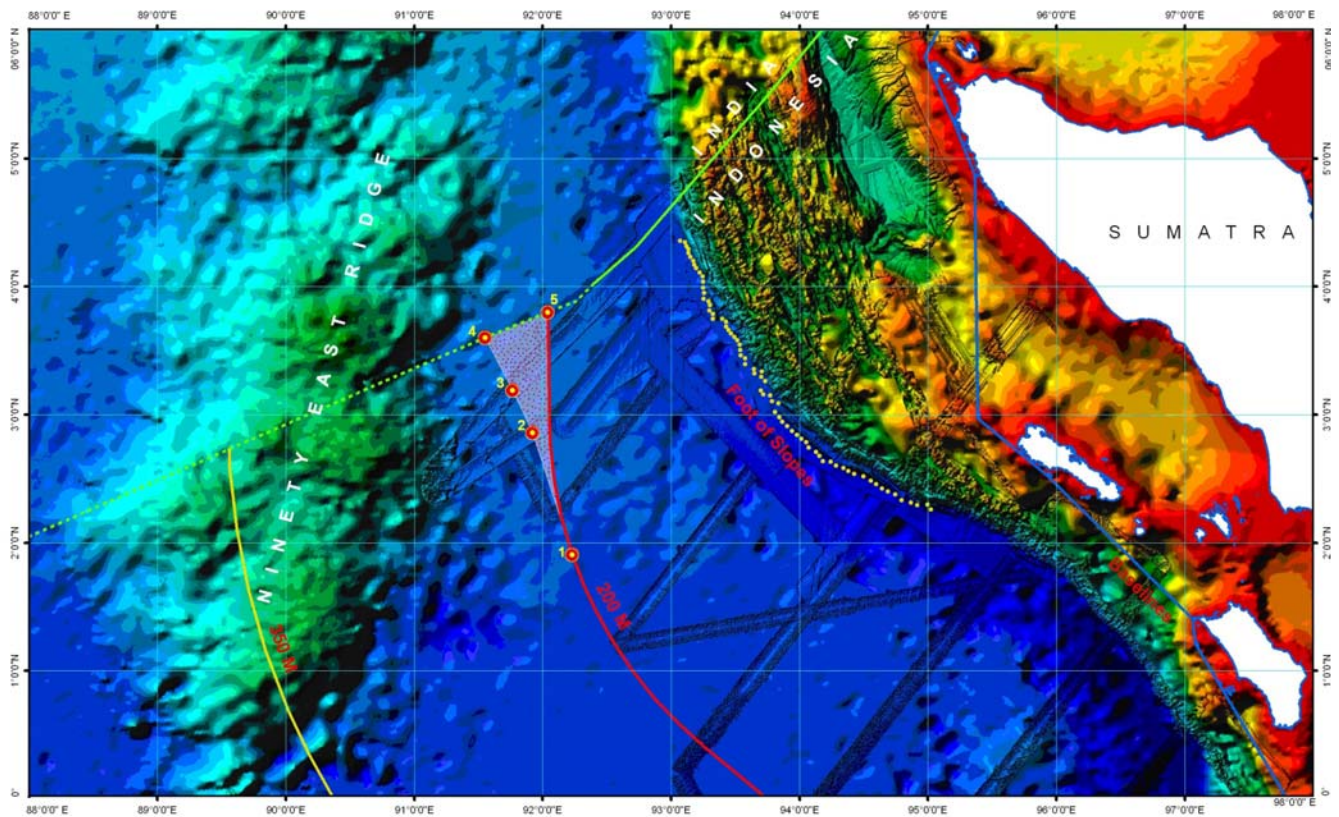


Figure 1. Locality map of the Submission of Indonesia relating to the area North West of Sumatra, as originally submitted.

A. The area North West of Sumatra

1. Geographical region description

- 26 The area of the outer continental margin north west of Sumatra lies within the flat abyssal plain of the Nicobar Fan. To the west the seabed rises to the Ninety East Ridge, a major elongate feature of the Indian Ocean. To the east the seafloor first dips gently to the Sunda Trench and then rises steeply over the very complex accretionary zone related to the Sunda Arc.
- 27 The tectonic framework is dominated by the northward motion of the Indian-Australian plate with respect to the Sunda plate at a relative motion of approximately 70 mm/yr. The movement component perpendicular to the trend of the plate boundary is mostly accommodated by thrusting along the Sumatra Subduction Zone (Sunda Trench), but the motion component parallel to the plate boundary is substantially accommodated by strike-slip faulting along the Sumatra Fault Zone and the Mentawai Fault. The three major tectonic units are the Sunda Trench, the accretionary prism, and the fore-arc basin (the trenches offshore Sumatra and Java are called the Sunda Trench and the Java Trench, respectively).
- 28 Interpretation of the seismic data shows that the oceanic crust is characterised by a high amplitude reflector at the top and a chaotic seismic facies beneath it. The top of the oceanic crust is gently tilted to the northeast. To the west of the subduction is the Abyssal Plain of the Nicobar Fan. It is located more than 200 M to the west of the Indonesian baseline of Sumatra. The Ninety East Ridge limits the Nicobar Fan in the west forming the boundary of the submarine fan sediment derived from the Bay of Bengal (Figure 2).

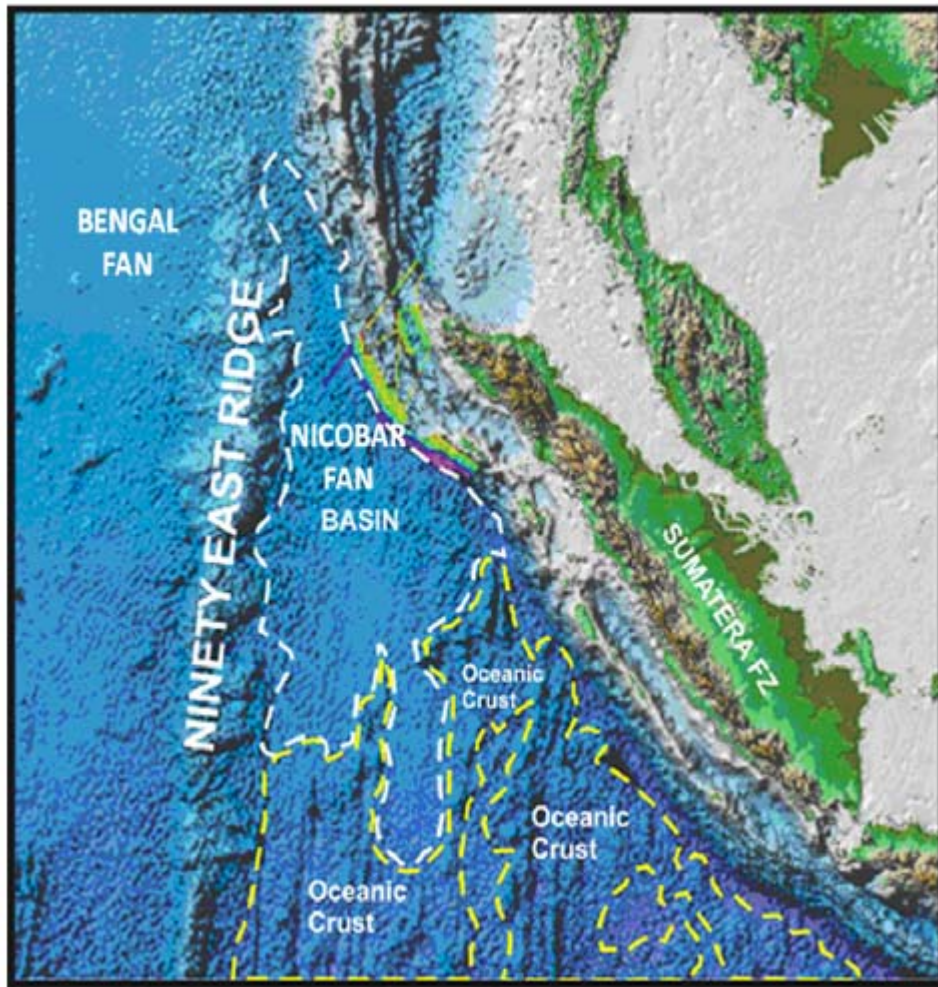


Figure 2. The Nicobar Fan is located between Northern Sumatra and the Ninety East Ridge.

- 29 The Nicobar Fan sedimentation is still relatively poorly known in terms of its sediment composition. The fan is assumed to be characterised by mud-dominated sediments of submarine channel fan / elongate fan type principally derived from erosion of material from the uplifted Ninety East Ridge and Nicobar Ridge which was then supplied to the Nicobar Fan.

2. Notes verbales submitted by other States

- 30 In its note verbale No NY/PM/443/1/2009, dated 25 March 2009, India referred to the possibility of potential overlapping of claims over the continental shelf between India and Indonesia, and stated that the delimitation of the continental shelf between States with opposite or adjacent coasts is to be effected by agreement, in accordance with article 83 of the Convention. The note also stated that, accordingly, Indonesia's submission for an extended continental shelf was without prejudice to the question of delimitation of the continental shelf between India and Indonesia, which was to be settled by mutual agreement.

31 In a note verbale (471/POL-SG/V/09, dated 30 April 2009), Indonesia agreed that the provisions of Article 76 of the Convention are without prejudice to the question of delimitation of the continental shelf between States and that such delimitation was to be effected by agreement on the basis of international law, in order to achieve an equitable solution. In this connection, Indonesia recalled the existing Agreement between Indonesia and India concerning the Continental Shelf Boundary between the two countries concluded in 1974 and 1977, which entered into force since 1974 and 1977, respectively.

3. Submerged prolongation of the landmass and entitlement to the continental shelf beyond 200 M

32 The outer edge of the continental margin, established from the foot of the continental slope of the area of North West of Sumatra by applying the provisions of article 76, paragraph 4, of the Convention, extends beyond the 200 M limits of Indonesia. On this basis, the Commission recognises the legal entitlement of Indonesia to delineate continental shelf beyond its 200 M limits in this region (Figure 1).

4. The determination of the foot of the continental slope

33 The foot of the continental slope should be established in accordance with article 76, paragraph 4(b), of the Convention.

4.1 Considerations

34 Five (5) critical FOS points generate formula points beyond the 200 M limits of Indonesia in the area North West of Sumatra (Figure 3).

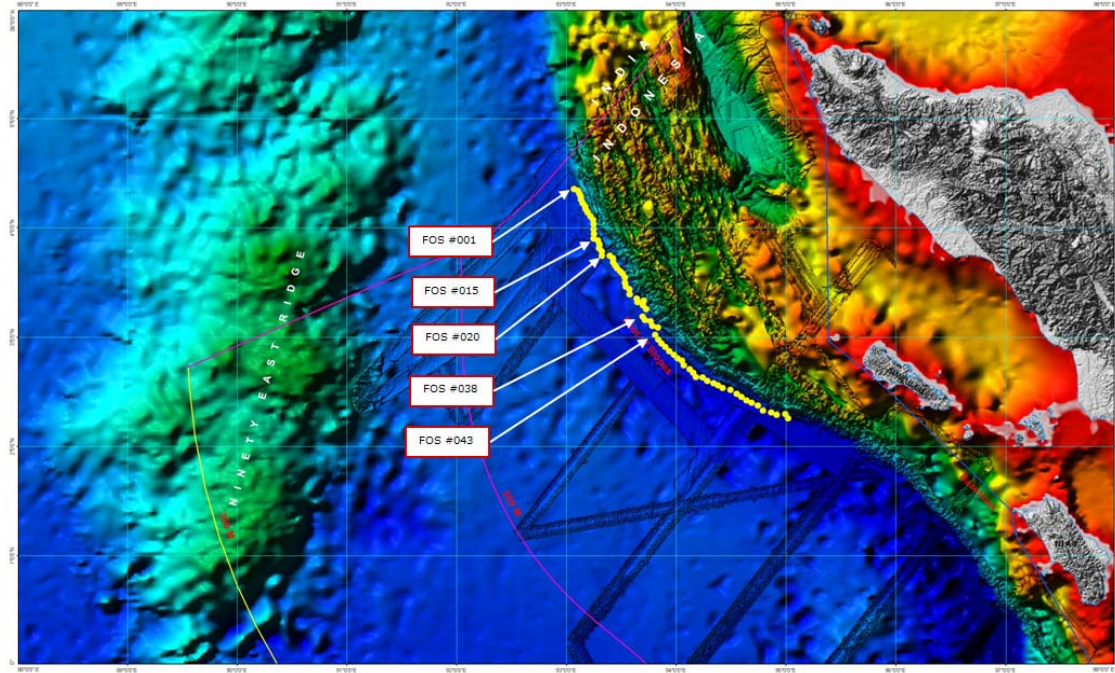


Figure 3. Location of the 5 critical FOS points related to the updated outer limit in the area North West of Sumatra.

- 35 In the region of the Sunda Trench and Sunda Arc, there is a continental margin of arc-trench system type. Accretion of these thick sediments to the Sunda margin during the Neogene has led to outbuilding of a wide accretionary prism and upbuilding of a high outer-arc ridge (Figure 4).

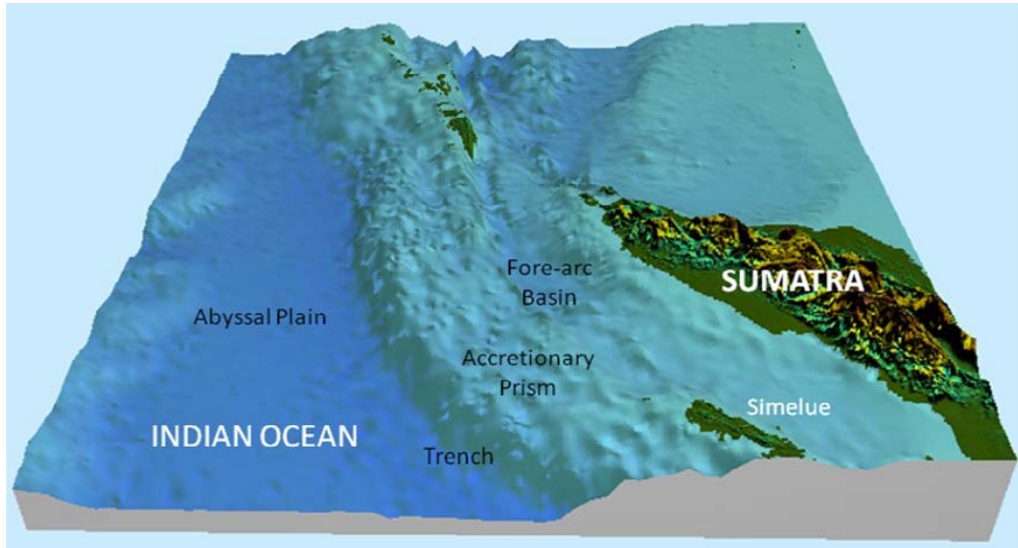


Figure 4. 3D view of the tectonic setting of the area North West of Sumatra.

- 36 Based on the Submission, and the additional data and material provided by Indonesia, and following a series of interactions based on the responses and additional information, including a number of publications related to this matter, the Subcommittee agreed with the approach adopted by Indonesia to define the base of the continental slope associated with the Sumatra margin. In particular, based on the morphological and bathymetric evidence, supplemented by other geological and geophysical data provided by Indonesia, as well as a new DTM-TIN 3D model prepared by the Subcommittee from the bathymetric data provided in the submission, the Subcommittee agreed with the way the locations of the 5 critical foot of continental slope points 1, 15, 20, 38 and 43 were established (in part illustrated by Figures 5-10).

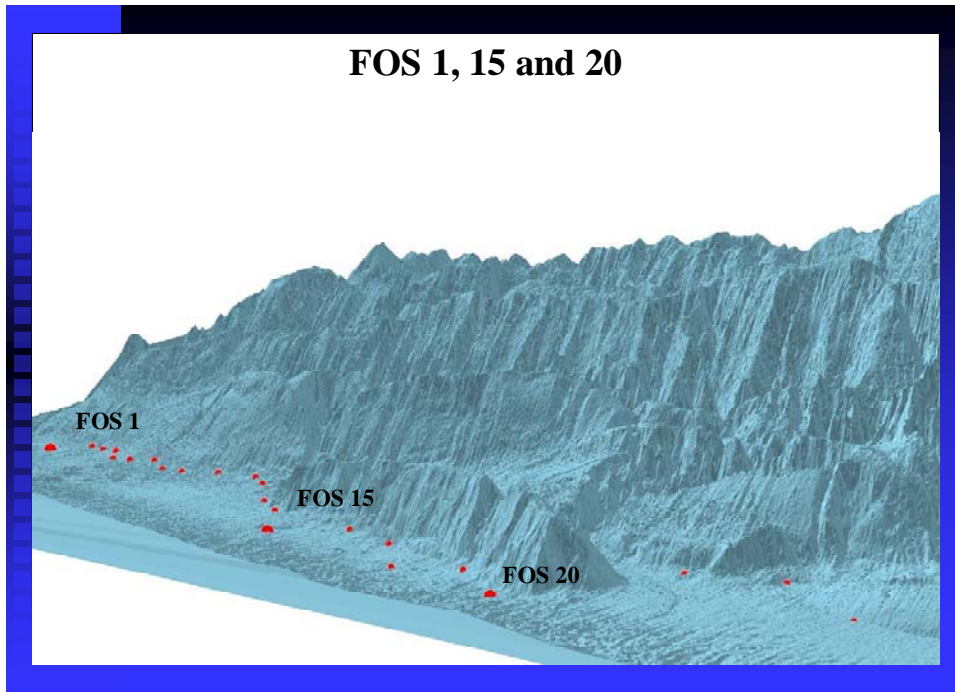


Figure 5. DTM prepared by the Subcommittee showing the location of critical FOS points 1, 15 and 20.

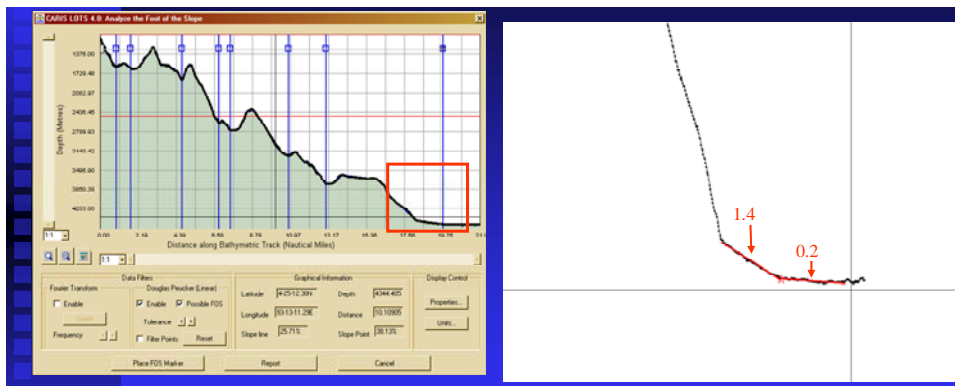


Figure 6. Analysis of FOS point 1.

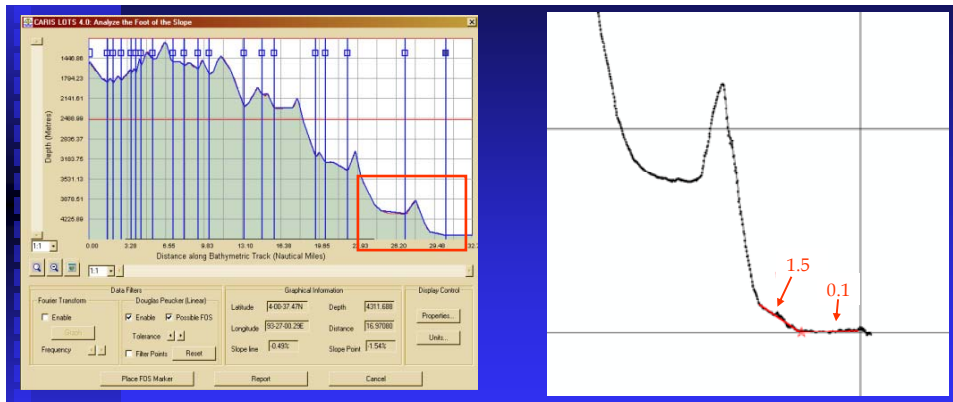


Figure 7. Analysis of FOS point 15.

37 Additional consideration of geological processes was applied in relation to the examination of FOS 38. Deposition of sediments in the Sunda forearc region occurs in four different environments: 1) the forearc basin, 2) the trench inner slope (defined as the area between the trench and outer-arc ridge), 3) the trench, and 4) the Indian plate. In the case of the Trench lower slope which is related to critical FOS positions in the submission of Indonesia, it is understood that hemipelagic sediments, volcanic ash or volcanoclastic sediments and detritus sediments from the uplifted accretionary prism are accumulating along the Trench lower slope as apron, small fan and wedge-shaped sedimentary bodies due to slumping, debris flow or turbidite sedimentary processes. In particular, it was agreed by the Subcommittee that under such a unique sedimentation regime along the trench-forearc-trench slope break system, the FOS # 38 position seemed to be acceptable as a sedimentary apron or wedge shaped body due to small slump-slide or debris flow (Figures 8-10).

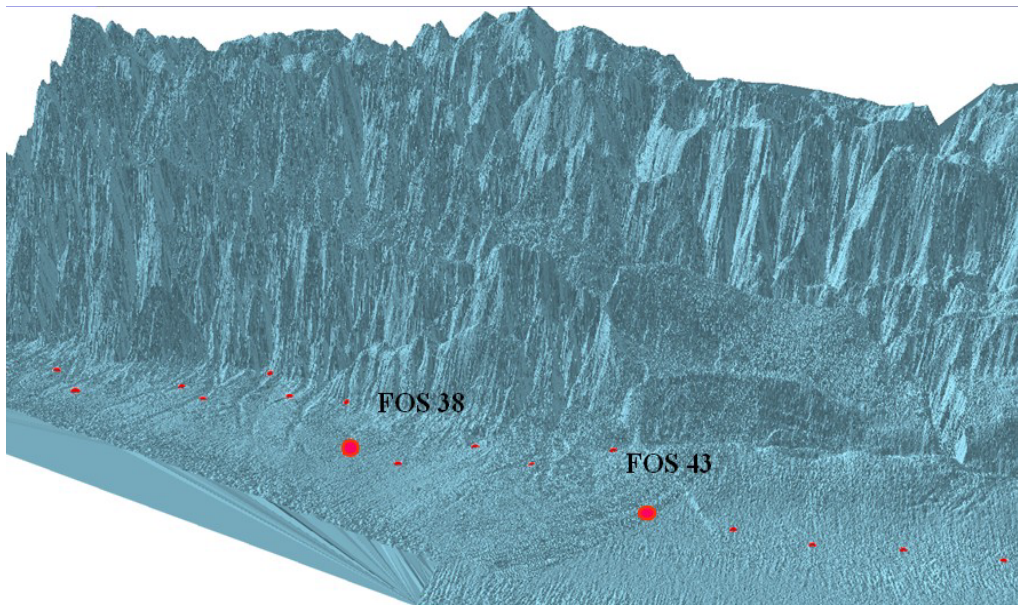


Figure 8. DTM prepared by the Subcommittee showing the location of critical FOS points 38 and 43.

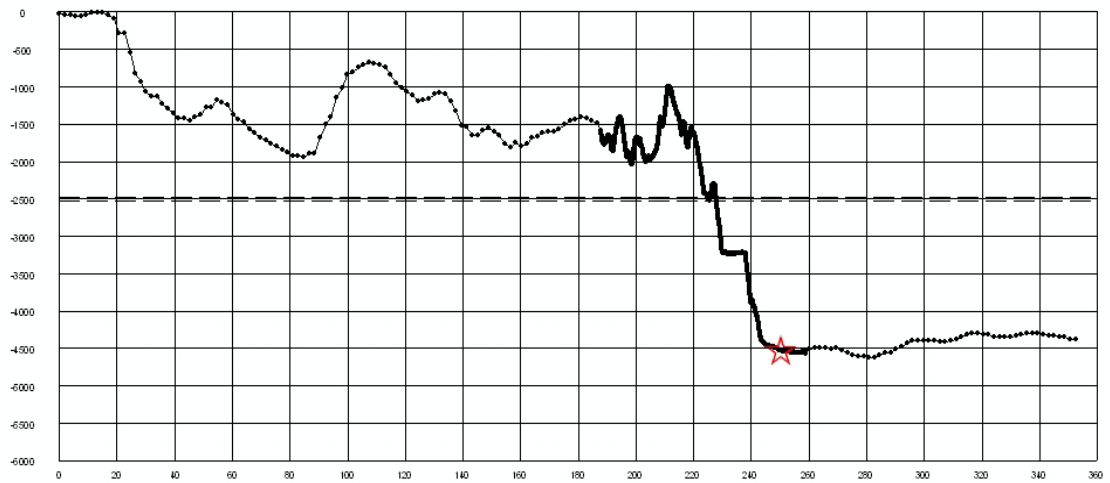


Figure 9. Extended bathymetric profile through FOS 38, indicated by red star (profile prepared by the Subcommittee).

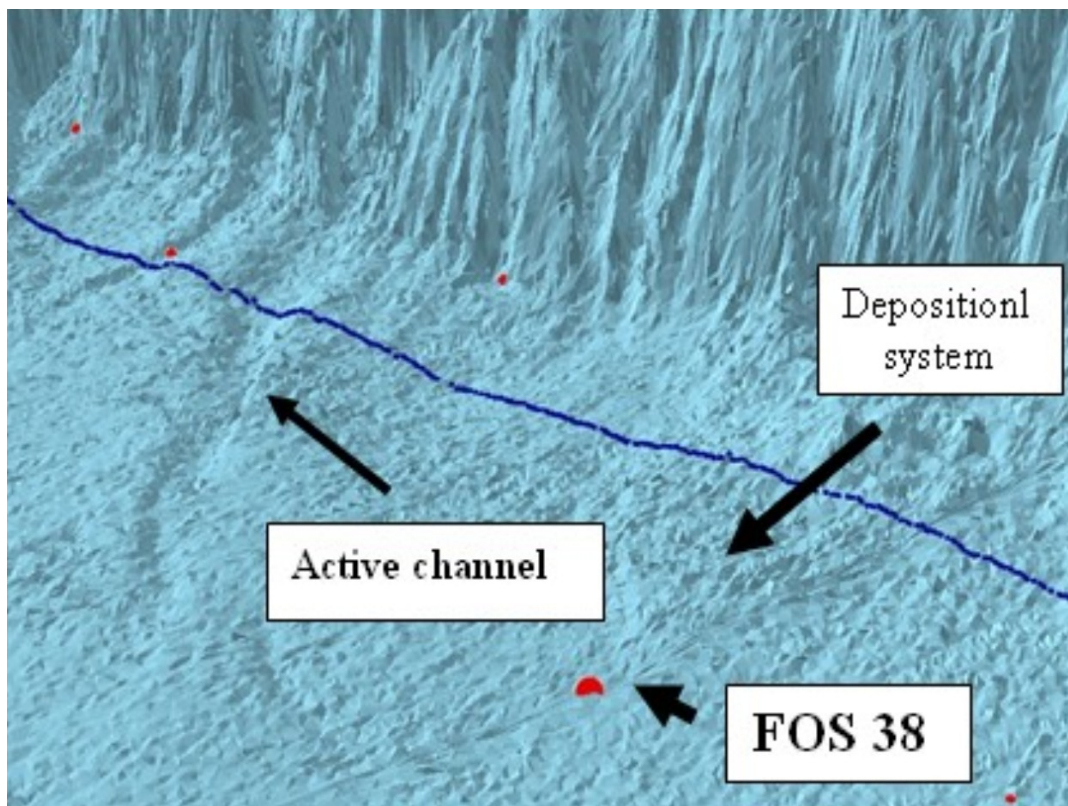


Figure 10. Evidence of sedimentary processes in the vicinity of FOS 38 (Figure prepared by the Subcommittee).

- 38 The Subcommittee was ultimately of the view that it could accept the locations of all the critical FOS points contained in the Submission.

4.2 Recommendations

- 39 Based on its consideration of the technical and scientific documentation contained in Indonesia's Submission of 16 June 2008 and the additional information provided in documents referred to above, the Commission concludes that, in the North West Sumatra Region, the FOS points presented 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 in the area North West of Sumatra.

5. The establishment of the outer edge of the continental margin

- 40 The outer edge of the continental margin in the area North West of Sumatra can be considered as a single unit.
- 41 The outer edge of the continental margin of Indonesia in the area North West of Sumatra should, for the purposes of the Convention, be established in accordance with article 76, paragraphs 4 and 7, of the Convention.

5.1 The application of the 60 M distance formula

- 42 In the area North West of Sumatra, the outer edge of the continental margin is not based on fixed points on arcs constructed at a distance of not more than 60 M from FOS points on the continental margin of Indonesia, in accordance with the provision contained in article 76, paragraph 4(a)(ii), of the Convention.

5.2 The application of the sediment thickness formula

- 43 In the area North West of Sumatra, Indonesia initially submitted two fixed points based on the sediment thickness provision of article 76, paragraph 4 (a)(i) of the Convention that are derived from two FOS points on the continental margin of Indonesia (Figure 1). Indonesia established these sediment thickness points (FP 2 and FP 3) based on the seismic lines BGR-103 and BGR-102, respectively. Following a thorough examination of the data provided, the Subcommittee informed the Delegation of Indonesia that FP 2 was accepted but that FP 3 should be located more landward in order to satisfy the 1 per cent criterion.
- 44 In addition, Indonesia submitted 3 other fixed points (FP 1, FP 4 and FP 5) based on other criteria. In essence these were construction points based on tangents to the 200M limit or intersection points on computed median lines. The Subcommittee advised the Delegation that the previous practice of the Commission had been to not recommend tangential-like constructs and that in the case of the second point (FP 4) there was no sediment thickness data provided to support it.
- 45 In order to address these issues, Indonesia conducted a seismic survey in early 2010 in the area. The new data collected during this survey, consisting of 6 seismic lines and detailed velocity data, was provided to the Subcommittee on 3 March 2010. Based on this new data, a series of 6 new OCS fixed points were submitted (A, B, C, D, E, and F – Figure 11). Point D is the same point as former FP 2, located on BGR-103.

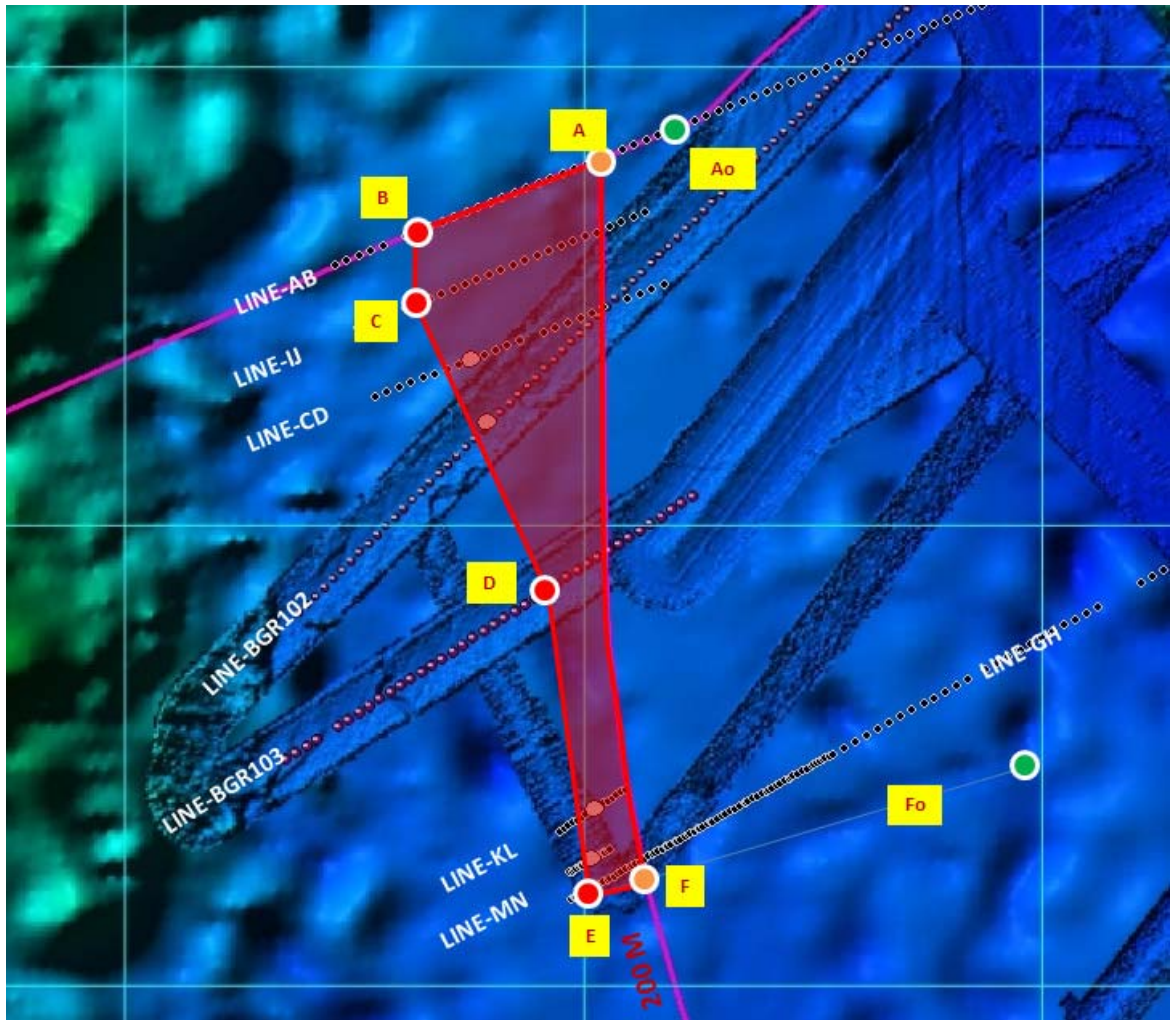


Figure 11. Location of new OLCS fixed points A-F submitted in March 2010.

- 46 The examination of these new data and points was carried out during the twenty-fifth and twenty-sixth sessions, as well as during the intersessional period, when further velocity spectra data requested by the Subcommittee was provided by Indonesia.
- 47 A comparison of originally submitted points FP 1-5 and the amended series of points FP A-F is shown in Figure 12.

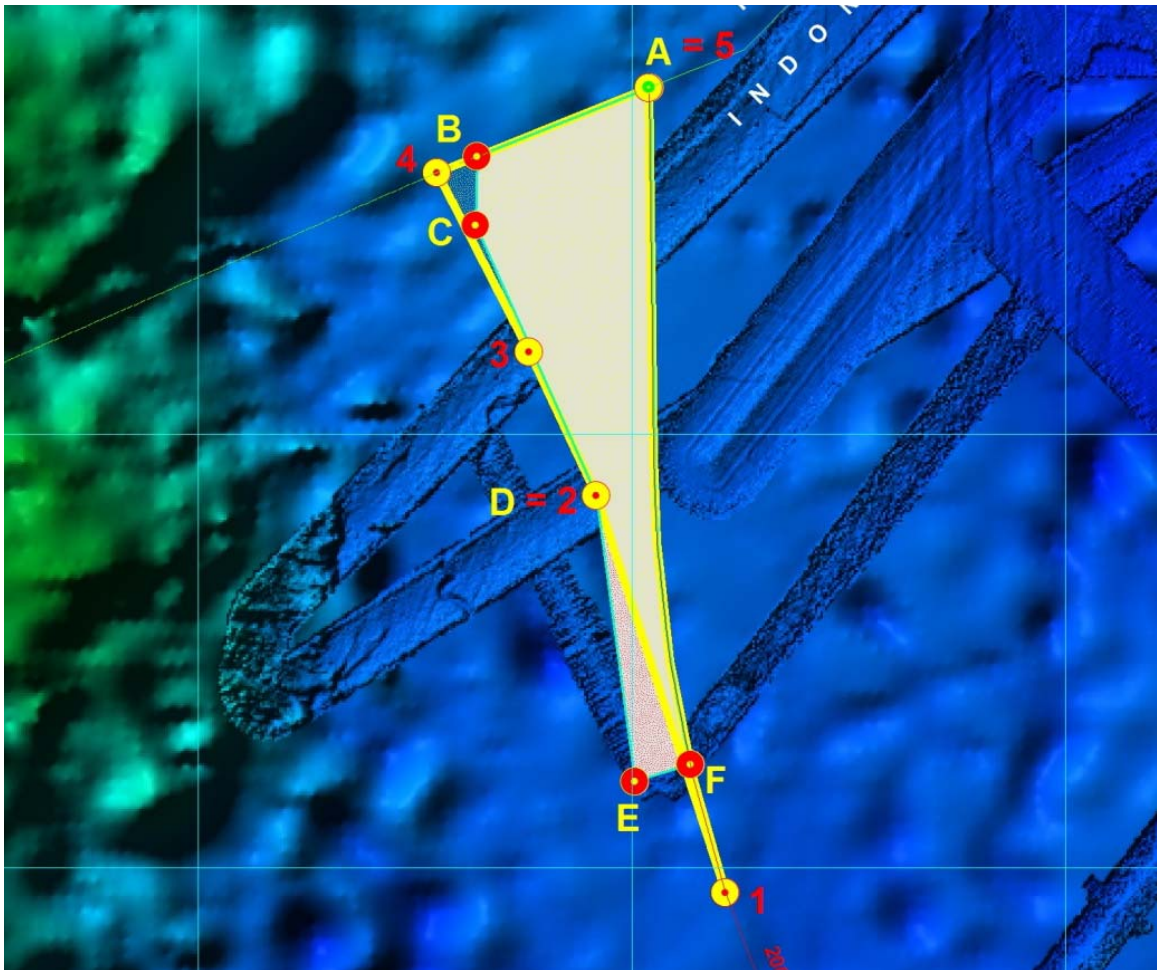


Figure 12. Comparison of originally submitted points FP 1-5 and the amended series of points FP A-F.

- 48 The Commission agrees with the procedure applied by Indonesia to establish the sediment thickness points B, C and D based on FOS points on the continental margin of North West Sumatra as contained in Table 1, including the data provided, the seismic interpretation, the methods of depth conversion, and the distance calculations. This followed a detailed analysis of the seismic data provided, together with tabulated velocity data and velocity spectra. However, in the case of Point E, located on seismic line GH, the Subcommittee suggested that the location of this point be moved approximately 0.7 M landward (to the vicinity of CDP 929) in order to satisfy the 1 per cent criterion. Part of seismic line GH, together with some associated velocity data, is shown in Figures 13 and 14.

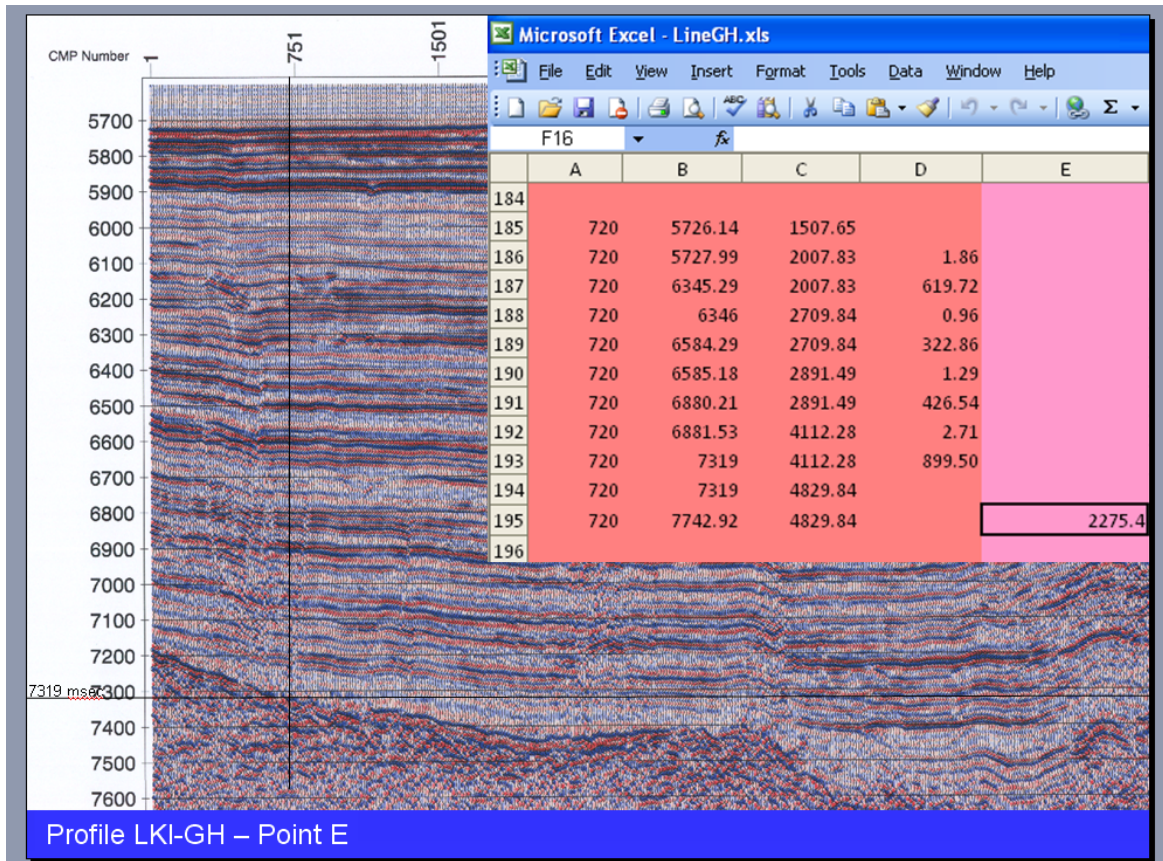


Figure 13. Fixed Point E as originally located on seismic line LKI-GH at CDP 720, together with some of the tabular velocity data provided by Indonesia (Figure prepared by the Subcommittee).

- 49 The Delegation of Indonesia subsequently informed the Subcommittee that it had relocated FP E to CDP 929 on line LK1-GH and resubmitted a list of coordinates of the outer limit points on 16 August 2010 reflecting that change.

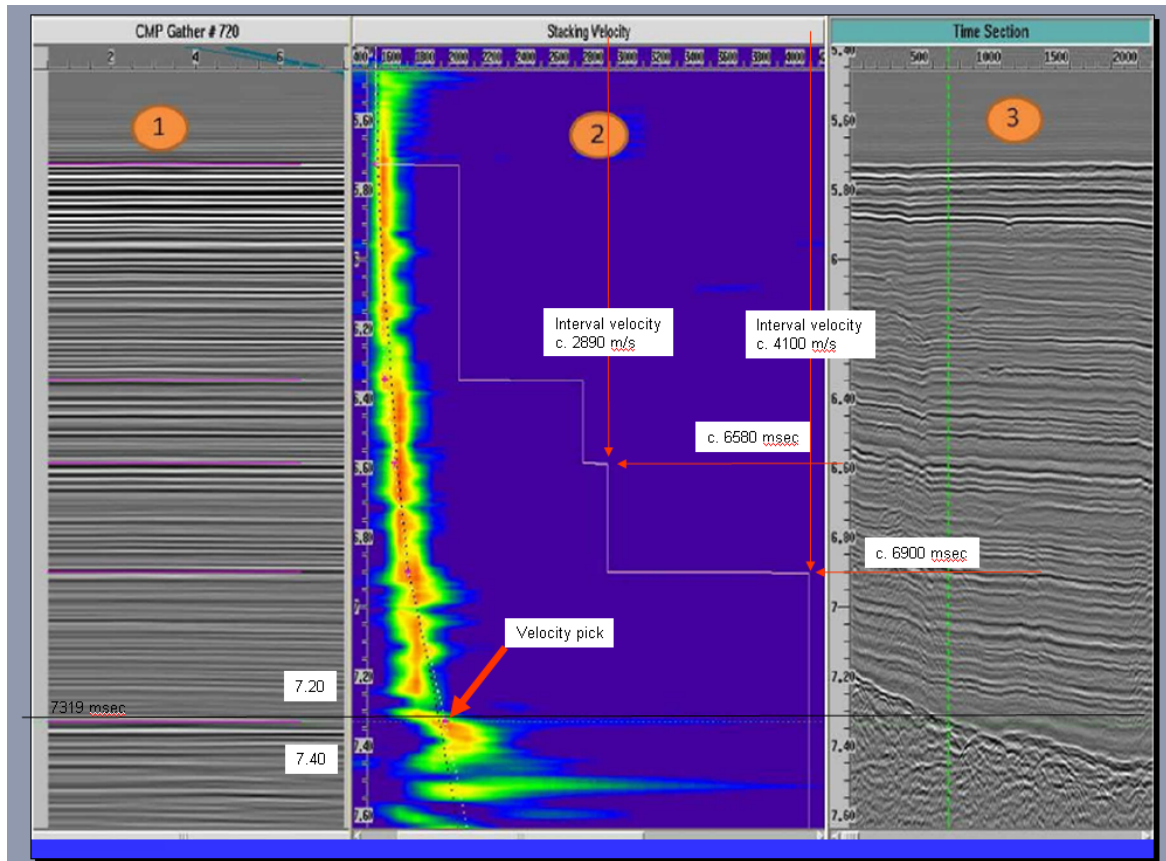


Figure 14. Velocity spectra data for Fixed Point E as originally located on seismic line LKI-GH at CDP 720 (annotated by the Subcommittee).

5.3 Configuration of the Outer Edge of the Continental Margin

50 In the area North West of Sumatra, the outer edge of the continental margin extends westwards from the 200M line. At its northern and southern ends it is bounded by lines connecting Gardiner Points outside the 200M limit (FP B and E) to Hedberg Points located inside the 200M limit (Figure 11). Fixed points FP C and D are other Gardiner Points which define the outer edge of the continental margin.

5.4 Recommendations

51 In the area North West of Sumatra, the outer edge of the continental margin beyond 200 M is based on sediment thickness points as described in section 5.2, in accordance with article 76, paragraph 7, of the Convention. The Commission recommends that these points are used as the basis for delineating the outer limits of the continental shelf in this region.

6. The delineation of the outer limits of the continental shelf

52 The outer limits of the continental shelf should be based on the established outer edge of the continental margin, taking into consideration the constraints contained in article 76, paragraphs 5 and 6, of the Convention.

6.1 The application of constraint criteria

- 53 The outer limits of the continental shelf cannot extend beyond the constraints as per the provisions contained in article 76, paragraph 5, of the Convention. Accordingly, the provision that the outer limits of the continental shelf may not exceed 350 M from the territorial sea baselines may be applied in all cases. Alternatively, the provision that the outer limits of the continental shelf may not exceed 100 M from the 2500 m isobath may be applied to those parts of the continental margin that are classified as natural components of that margin.
- 54 For the outer limits of the continental shelf in the area North West of Sumatra, Indonesia has invoked the distance constraint and therefore consideration of the outer limits of the continental shelf only involved an examination of the construction of the distance constraint line.

6.1.1 The construction of the distance constraint line

- 55 The distance constraint line submitted by Indonesia is constructed by arcs at 350 M distance from the territorial sea archipelagic baselines of Northwest Sumatra. The Commission agrees with the procedure and methods applied by Indonesia in the construction of this constraint line.

6.2 The outer limits of the continental shelf

- 56 The outer limits of the continental shelf in the area North West of Sumatra as contained in the Submission of Indonesia of 16 June 2008 and revised under letter of 3 March 2010, consists of fixed points connected by straight lines not exceeding 60 M in length. The fixed points are listed in Table 1, as submitted under letter of 16 August 2010. The fixed points are established by the provisions contained in article 76, paragraph 4(a), of the Convention, or points located on Indonesia's 200 M limit lines (Figure 15).

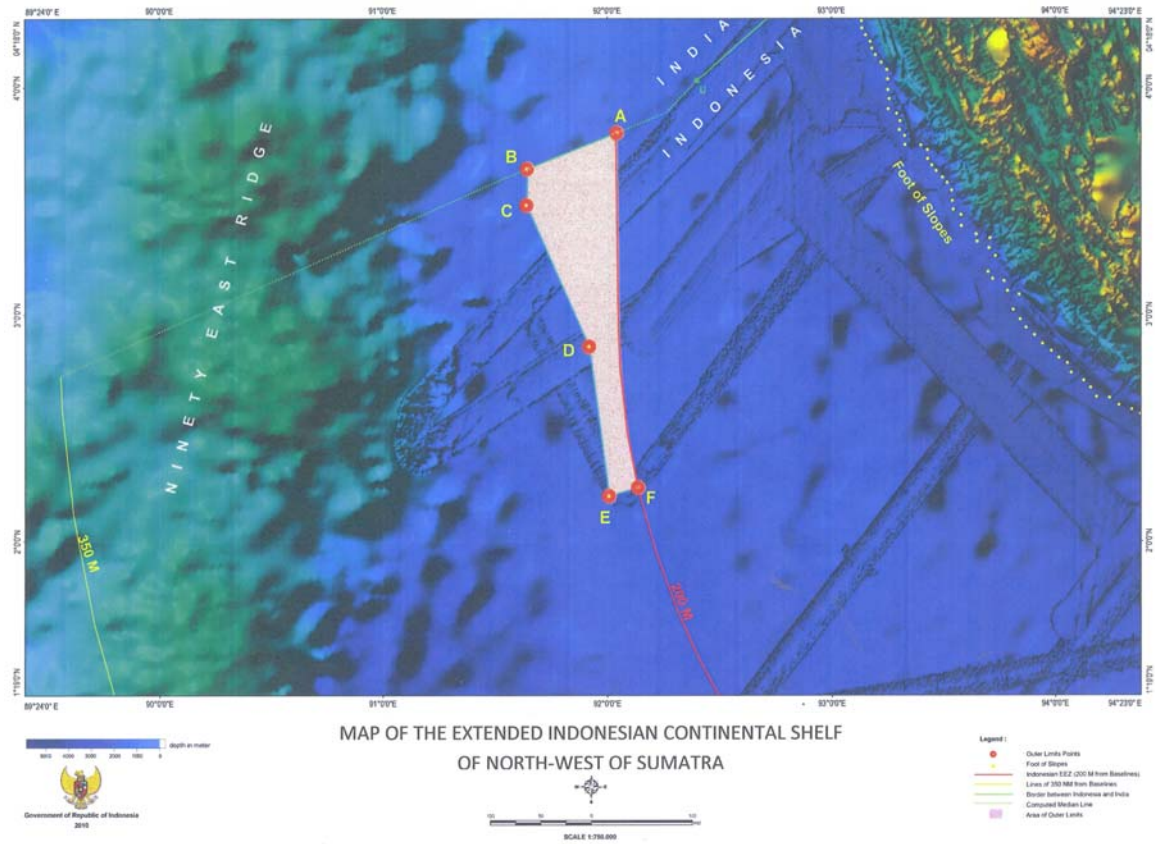


Figure 15. Map of the Extended Indonesian Continental Shelf of North-West of Sumatra.

6.3 Recommendations

- 57 The Commission agrees with the determination of the fixed points listed in Table 1 establishing the outer edge of the continental margin in the area North West of Sumatra. The Commission recommends that the delineation of the outer limits of the continental shelf in the area North West of Sumatra be conducted 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 principles applied in delineating the outer limits of the continental shelf in the area North West of Sumatra, including the determination of the fixed points listed in Table 1, and the construction of the straight lines connecting those points. The Commission recommends that Indonesia proceeds to establish the outer limits of the continental shelf from fixed point A to fixed point F accordingly.

Fixed Points	Latitude (°N)	Longitude (°E)
A	3.798494	92.039533
B	3.640470	91.643231
C	3.481772	91.640431
D	2.857803	91.918864
E	2.205316	92.017360
F	2.237555	92.135960

Table 1. List Of Coordinates of Turning Points that define the Outer Limit of the Continental Shelf Beyond 200 M as Submitted by Indonesia