

## **MALAYSIA PARTIAL SUBMISSION**

to the Commission on the Limits of the Continental Shelf pursuant to Article 76, paragraph 8 of the United Nations Convention on the Law of the Sea 1982 in the South China Sea

## **PART I: EXECUTIVE SUMMARY**



Malaysia

November 2017

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#### Part I

#### **EXECUTIVE SUMMARY**

#### 1. INTRODUCTION

- 1.1 This Partial Submission to the Commission on the Limits of the Continental Shelf (the Commission) is prepared collectively by relevant agencies of the Government of Malaysia pursuant to Article 76 of the United Nations Convention on the Law of the Sea 1982 (UNCLOS 1982), in accordance with the Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf (CLCS/11/Add.1) (the Guidelines) and the Rules of Procedure of the Commission (CLCS/40/Rev.1) (the Commission's Rules of Procedure) for the delineation of the outer limits of the continental shelf in the South China Sea.
- 1.2 On 6 May 2009, in accordance with Article 76 of UNCLOS 1982, Malaysia and the Socialist Republic of Vietnam submitted a Joint Submission of the limits of the continental shelf beyond 200 nautical miles (M) from their baselines from which the breadth of their territorial seas are measured in the southern part of the South China Sea.
- 1.3 Malaysia signed UNCLOS 1982 on 10 December 1982 and ratified the same on 14 October 1996.
- In accordance with Paragraph 3 of Annex I to the Commission's Rules of Procedure, this Partial Submission is a submission for the remaining portion of the continental shelf of Malaysia beyond 200 nautical miles (M) from its baselines from which the breadth of its territorial sea are measured in the South China Sea as shown in **Figure 1.1** and described in paragraph 5.

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2. PROVISIONS OF ARTICLE 76 OF UNCLOS 1982 INVOKED

The outer limits of the continental shelf in the extended continental shelf area is

based on the provisions of Article 76 (4) and (5) of UNCLOS 1982.

COMMISSION MEMBER WHO PROVIDED ADVICE DURING THE 3.

PREPARATION OF THIS PARTIAL SUBMISSION

The Government of Malaysia is assisted in the preparation of this Partial Submission

by Dr. Mazlan Madon, member of the Commission on the Limits of the Continental

Shelf.

4. **ABSENCE OF DISPUTES** 

4.1 The Government of Malaysia wishes to inform the Commission that the area

of continental shelf beyond 200 M that is the subject of this Partial Submission as

described in paragraph 5 below is not located in an area which has any land or

maritime dispute between Malaysia and any other coastal State.

4.2 Notwithstanding that, the Government of Malaysia acknowledges that there

are areas of potential overlapping entitlements in respect of the continental shelf

beyond 200 M of the area that is the subject of this Partial Submission. In this

connection, the Government of Malaysia wishes to assure the Commission, to the

extent possible, that this Partial Submission will not prejudice matters relating to the

delimitation of continental shelf beyond 200 M between States with opposite or

adjacent coasts.

5. DESCRIPTION OF THE OUTER LIMITS OF THE CONTINENTAL SHELF

**BEYOND 200 M** 

The outer limits of the continental shelf beyond 200 M are defined by ninety-six (96)

fixed points determined by 60 M from the foot of the continental slope (FOS), in

accordance with Article 76, Paragraph 4 (a) (ii) of UNCLOS 1982. The fixed points

are connected by straight lines not exceeding 60 M in length, in accordance with

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Article 76, Paragraph 7 of UNCLOS 1982. In accordance with Article 76, paragraphs 5 and 6 of UNCLOS 1982, all fixed points comprising the line of the outer limits of the continental shelf are not more than 350 M from the baselines from which the breadth of the territorial sea is measured, or do not exceed 100 M from the 2,500 metres isobath constraint line.

# 6. THE GOVERNMENT AGENCIES RESPONSIBLE FOR THE PREPARATION OF THIS PARTIAL SUBMISSION

This Partial Submission together with all maps, figures, enclosures, appendices and databases was prepared by the agencies of the Government of Malaysia as follows:

- (a) National Security Council of the Prime Minister's Department;
- (b) Ministry of Foreign Affairs;
- (c) Attorney General's Chambers;
- (d) Department of Survey and Mapping;
- (e) Department of Mineral and Geoscience;
- (f) National Hydrographic Centre of the Royal Malaysian Navy; and
- (g) Petroliam Nasional Berhad (PETRONAS).

#### 7. MAP AND COORDINATES

**Figure 1.1** illustrates the outer limits of the continental shelf established for this Partial Submission. The geographical coordinates in World Geodetic System (WGS84) of the outer limits of the continental shelf are listed in **Table 1.1**.

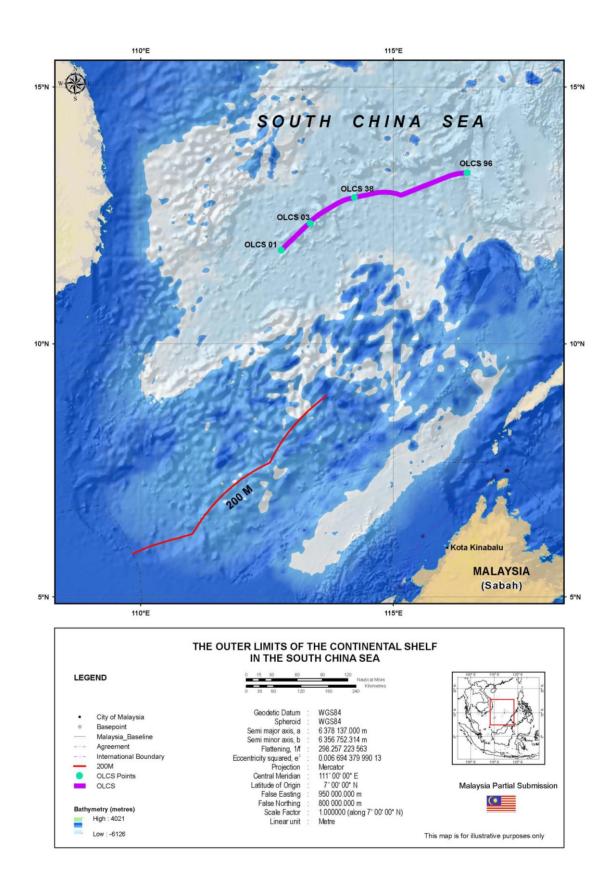


Figure 1.1 The Outer Limits of the Continental Shelf in the South China Sea

Table 1.1

List of Geographical Coordinates of the Outer Limits of the Continental Shelf in the South China Sea (OLCS) (All Coordinates are in WGS84)

| OLCS<br>Point | La | atitude | e (N) | Lon | gitud | e (E) | Mathada  | From  | То    | Dista  | nce   |
|---------------|----|---------|-------|-----|-------|-------|--|-------|-------|--------|-------|
| ID            | o  |         |       | •   | •     |       | Methods  | Point | Point | KM     | M     |
| 01            | 11 | 50      | 16.2  | 112 | 47    | 16.8  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS01 |       |       | 0.000  | 0.00  |
| 02            | 12 | 25      | 26.5  | 113 | 24    | 12.8  | Fixed points of 60 M envelope of arcs generated from FOS07       | 1     | 2     | 93.244 | 50.35 |
| 03            | 12 | 26      | 8.1   | 113 | 24    | 57.2  | Fixed points of 60 M envelope of arcs generated from FOS07       | 2     | 3     | 1.852  | 1.00  |
| 04            | 12 | 26      | 48.9  | 113 | 25    | 42.3  | Fixed points of 60 M envelope of arcs generated from FOS07       | 3     | 4     | 1.852  | 1.00  |
| 05            | 12 | 27      | 29.0  | 113 | 26    | 28.1  | Fixed points of 60 M envelope of arcs generated from FOS07       | 4     | 5     | 1.852  | 1.00  |
| 06            | 12 | 28      | 8.3   | 113 | 27    | 14.6  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS07 | 5     | 6     | 1.852  | 1.00  |
| 07            | 12 | 28      | 46.8  | 113 | 28    | 1.7   | Fixed points of 60 M envelope of arcs generated from FOS07       | 6     | 7     | 1.852  | 1.00  |
| 08            | 12 | 29      | 24.6  | 113 | 28    | 49.5  | Fixed points of 60 M envelope of arcs generated from FOS07       | 7     | 8     | 1.852  | 1.00  |
| 09            | 12 | 30      | 1.5   | 113 | 29    | 38.0  | Fixed points of 60 M envelope of arcs generated from FOS07       | 8     | 9     | 1.852  | 1.00  |
| 10            | 12 | 30      | 37.7  | 113 | 30    | 27.0  | Fixed points of 60 M envelope of arcs generated from FOS07       | 9     | 10    | 1.852  | 1.00  |
| 11            | 12 | 31      | 13.1  | 113 | 31    | 16.7  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS07 | 10    | 11    | 1.852  | 1.00  |
| 12            | 12 | 31      | 47.6  | 113 | 32    | 7.0   | Fixed points of 60 M envelope of arcs generated from FOS07       | 11    | 12    | 1.852  | 1.00  |
| 13            | 12 | 32      | 21.3  | 113 | 32    | 57.8  | Fixed points of 60 M envelope of arcs generated from FOS07       | 12    | 13    | 1.852  | 1.00  |
| 14            | 12 | 32      | 54.2  | 113 | 33    | 49.2  | Fixed points of 60 M envelope of arcs generated from FOS07       | 13    | 14    | 1.852  | 1.00  |
| 15            | 12 | 33      | 26.2  | 113 | 34    | 41.2  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS07 | 14    | 15    | 1.852  | 1.00  |
| 16            | 12 | 43      | 52.5  | 113 | 52    | 17.9  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 15    | 16    | 37.246 | 20.11 |

| OLCS        | La | atitude | (N)  | Lon | gitud | e (E) |  | From  | То    | Dista | nce  |
|-------------|----|---------|------|-----|-------|-------|--|-------|-------|-------|------|
| Point<br>ID | 0  | ,       |      | 0   |       |       | Methods  | Point | Point | KM    | М    |
| 17          | 12 | 44      | 22.8 | 113 | 53    | 11.0  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 16    | 17    | 1.852 | 1.00 |
| 18          | 12 | 44      | 52.2 | 113 | 54    | 4.6   | Fixed points of 60 M envelope of arcs generated from FOS08       | 17    | 18    | 1.852 | 1.00 |
| 19          | 12 | 45      | 20.8 | 113 | 54    | 58.6  | Fixed points of 60 M envelope of arcs generated from FOS08       | 18    | 19    | 1.852 | 1.00 |
| 20          | 12 | 45      | 48.4 | 113 | 55    | 53.2  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 19    | 20    | 1.852 | 1.00 |
| 21          | 12 | 46      | 15.2 | 113 | 56    | 48.2  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 20    | 21    | 1.852 | 1.00 |
| 22          | 12 | 46      | 41.0 | 113 | 57    | 43.7  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 21    | 22    | 1.852 | 1.00 |
| 23          | 12 | 47      | 5.9  | 113 | 58    | 39.6  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 22    | 23    | 1.852 | 1.00 |
| 24          | 12 | 47      | 29.9 | 113 | 59    | 35.9  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 23    | 24    | 1.852 | 1.00 |
| 25          | 12 | 47      | 53.0 | 114 | 0     | 32.6  | Fixed points of 60 M envelope of arcs generated from FOS08       | 24    | 25    | 1.852 | 1.00 |
| 26          | 12 | 48      | 15.2 | 114 | 1     | 29.7  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 25    | 26    | 1.852 | 1.00 |
| 27          | 12 | 48      | 36.4 | 114 | 2     | 27.2  | Fixed points of 60 M envelope of arcs generated from FOS08       | 26    | 27    | 1.852 | 1.00 |
| 28          | 12 | 48      | 56.6 | 114 | 3     | 25.0  | Fixed points of 60 M envelope of arcs generated from FOS08       | 27    | 28    | 1.852 | 1.00 |
| 29          | 12 | 49      | 15.9 | 114 | 4     | 23.2  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 28    | 29    | 1.852 | 1.00 |
| 30          | 12 | 49      | 34.3 | 114 | 5     | 21.7  | Fixed points of 60 M envelope of arcs generated from FOS08       | 29    | 30    | 1.852 | 1.00 |
| 31          | 12 | 49      | 51.6 | 114 | 6     | 20.5  | Fixed points of 60 M envelope of arcs generated from FOS08       | 30    | 31    | 1.852 | 1.00 |
| 32          | 12 | 50      | 8.1  | 114 | 7     | 19.6  | Fixed points of 60 M envelope of arcs generated from FOS08       | 31    | 32    | 1.852 | 1.00 |
| 33          | 12 | 50      | 23.5 | 114 | 8     | 19.0  | Fixed points of 60 M envelope of arcs generated from FOS08       | 32    | 33    | 1.852 | 1.00 |
| 34          | 12 | 50      | 38.0 | 114 | 9     | 18.6  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS08 | 33    | 34    | 1.852 | 1.00 |

| OLCS<br>Point | La | atitude | e (N) | Lon | gitud | e (E) | Methods  | From  | То    | Dista  | nce   |
|---------------|----|---------|-------|-----|-------|-------|--|-------|-------|--------|-------|
| ID            | 0  | •       |       | 0   | ,     |       | Methods  | Point | Point | KM     | М     |
| 35            | 12 | 50      | 51.5  | 114 | 10    | 18.4  | Fixed points of 60 M envelope of arcs generated from FOS08       | 34    | 35    | 1.852  | 1.00  |
| 36            | 12 | 56      | 18.4  | 114 | 36    | 16.5  | Fixed points of 60 M envelope of arcs generated from FOS09       | 35    | 36    | 48.033 | 25.94 |
| 37            | 12 | 56      | 30.9  | 114 | 37    | 16.6  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 36    | 37    | 1.852  | 1.00  |
| 38            | 12 | 56      | 42.4  | 114 | 38    | 16.9  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 37    | 38    | 1.852  | 1.00  |
| 39            | 12 | 56      | 53.0  | 114 | 39    | 17.4  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 38    | 39    | 1.852  | 1.00  |
| 40            | 12 | 57      | 2.5   | 114 | 40    | 18.0  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 39    | 40    | 1.852  | 1.00  |
| 41            | 12 | 57      | 11.0  | 114 | 41    | 18.9  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 40    | 41    | 1.852  | 1.00  |
| 42            | 12 | 57      | 18.6  | 114 | 42    | 19.8  | Fixed points of 60 M envelope of arcs generated from FOS09       | 41    | 42    | 1.852  | 1.00  |
| 43            | 12 | 57      | 25.1  | 114 | 43    | 20.9  | Fixed points of 60 M envelope of arcs generated from FOS09       | 42    | 43    | 1.852  | 1.00  |
| 44            | 12 | 57      | 30.6  | 114 | 44    | 22.1  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 43    | 44    | 1.852  | 1.00  |
| 45            | 12 | 57      | 35.1  | 114 | 45    | 23.3  | Fixed points of 60 M envelope of arcs generated from FOS09       | 44    | 45    | 1.852  | 1.00  |
| 46            | 12 | 57      | 38.7  | 114 | 46    | 24.7  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 45    | 46    | 1.852  | 1.00  |
| 47            | 12 | 57      | 41.2  | 114 | 47    | 26.1  | Fixed points of 60 M envelope of arcs generated from FOS09       | 46    | 47    | 1.852  | 1.00  |
| 48            | 12 | 57      | 42.7  | 114 | 48    | 27.5  | Fixed points of 60 M envelope of arcs generated from FOS09       | 47    | 48    | 1.852  | 1.00  |
| 49            | 12 | 57      | 43.2  | 114 | 49    | 28.4  | Fixed points of 60 M envelope of arcs generated from FOS09       | 48    | 49    | 1.835  | 0.99  |
| 50            | 12 | 57      | 42.7  | 114 | 50    | 29.8  | Fixed points of 60 M envelope of arcs generated from FOS09       | 49    | 50    | 1.852  | 1.00  |
| 51            | 12 | 57      | 41.2  | 114 | 51    | 31.3  | Fixed points of 60 M envelope of arcs generated from FOS09       | 50    | 51    | 1.852  | 1.00  |
| 52            | 12 | 57      | 38.6  | 114 | 52    | 32.7  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 51    | 52    | 1.852  | 1.00  |

| OLCS<br>Point | La | atitude | e (N) | Lon | gitud | e (E) | Mothodo  | From  | То    | Dista  | nce   |
|---------------|----|---------|-------|-----|-------|-------|--|-------|-------|--------|-------|
| ID            | 0  | •       |       | 0   |       |       | Methods  | Point | Point | KM     | М     |
| 53            | 12 | 57      | 35.1  | 114 | 53    | 34.0  | Fixed points of 60 M envelope of arcs generated from FOS09       | 52    | 53    | 1.852  | 1.00  |
| 54            | 12 | 57      | 30.6  | 114 | 54    | 35.3  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 53    | 54    | 1.852  | 1.00  |
| 55            | 12 | 57      | 25.0  | 114 | 55    | 36.4  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 54    | 55    | 1.852  | 1.00  |
| 56            | 12 | 57      | 18.5  | 114 | 56    | 37.5  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 55    | 56    | 1.852  | 1.00  |
| 57            | 12 | 57      | 11.0  | 114 | 57    | 38.5  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 56    | 57    | 1.852  | 1.00  |
| 58            | 12 | 57      | 2.4   | 114 | 58    | 39.3  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 57    | 58    | 1.852  | 1.00  |
| 59            | 12 | 56      | 52.9  | 114 | 59    | 40.0  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 58    | 59    | 1.852  | 1.00  |
| 60            | 12 | 56      | 42.3  | 115 | 0     | 40.5  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 59    | 60    | 1.852  | 1.00  |
| 61            | 12 | 56      | 30.8  | 115 | 1     | 40.8  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 60    | 61    | 1.852  | 1.00  |
| 62            | 12 | 56      | 18.3  | 115 | 2     | 40.9  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 61    | 62    | 1.852  | 1.00  |
| 63            | 12 | 56      | 4.8   | 115 | 3     | 40.8  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 62    | 63    | 1.852  | 1.00  |
| 64            | 12 | 55      | 50.3  | 115 | 4     | 40.4  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 63    | 64    | 1.852  | 1.00  |
| 65            | 12 | 55      | 34.9  | 115 | 5     | 39.8  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 64    | 65    | 1.852  | 1.00  |
| 66            | 12 | 55      | 18.5  | 115 | 6     | 38.9  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 65    | 66    | 1.852  | 1.00  |
| 67            | 12 | 55      | 1.1   | 115 | 7     | 37.7  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 66    | 67    | 1.852  | 1.00  |
| 68            | 12 | 54      | 42.7  | 115 | 8     | 36.2  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS09 | 67    | 68    | 1.852  | 1.00  |
| 69            | 12 | 54      | 23.4  | 115 | 9     | 34.4  | Fixed points of 60 M envelope of arcs generated from FOS11       | 68    | 69    | 1.852  | 1.00  |
| 70            | 13 | 16      | 16.4  | 116 | 6     | 1.3   | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS11 | 69    | 70    | 109.72 | 59.24 |

| OLCS<br>Point | La | atitude | e (N) | Lon | gitud | e (E) | Mathada  | From  | То    | Dista | nce  |
|---------------|----|---------|-------|-----|-------|-------|--|-------|-------|-------|------|
| ID            | 0  | •       | "     | 0   | •     | ••    | Methods  | Point | Point | KM    | М    |
| 71            | 13 | 16      | 37.6  | 116 | 6     | 58.9  | Fixed points of 60 M envelope of arcs generated from FOS11       | 70    | 71    | 1.852 | 1.00 |
| 72            | 13 | 16      | 57.9  | 116 | 7     | 56.9  | Fixed points of 60 M envelope of arcs generated from FOS11       | 71    | 72    | 1.852 | 1.00 |
| 73            | 13 | 17      | 17.2  | 116 | 8     | 55.2  | Fixed points of 60 M envelope of arcs generated from FOS11       | 72    | 73    | 1.852 | 1.00 |
| 74            | 13 | 17      | 35.5  | 116 | 9     | 53.8  | Fixed points of 60 M envelope of arcs generated from FOS11       | 73    | 74    | 1.852 | 1.00 |
| 75            | 13 | 17      | 52.9  | 116 | 10    | 52.7  | Fixed points of 60 M envelope of arcs generated from FOS11       | 74    | 75    | 1.852 | 1.00 |
| 76            | 13 | 18      | 9.3   | 116 | 11    | 51.9  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS11 | 75    | 76    | 1.852 | 1.00 |
| 77            | 13 | 18      | 24.8  | 116 | 12    | 51.3  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS11 | 76    | 77    | 1.852 | 1.00 |
| 78            | 13 | 18      | 39.2  | 116 | 13    | 51.1  | Fixed points of 60 M envelope of arcs generated from FOS11       | 77    | 78    | 1.852 | 1.00 |
| 79            | 13 | 18      | 52.7  | 116 | 14    | 51.0  | Fixed points of 60 M envelope of arcs generated from FOS11       | 78    | 79    | 1.852 | 1.00 |
| 80            | 13 | 19      | 5.2   | 116 | 15    | 51.2  | Fixed points of 60 M envelope of arcs generated from FOS11       | 79    | 80    | 1.852 | 1.00 |
| 81            | 13 | 19      | 16.7  | 116 | 16    | 51.6  | Fixed points of 60 M envelope of arcs generated from FOS11       | 80    | 81    | 1.852 | 1.00 |
| 82            | 13 | 19      | 27.3  | 116 | 17    | 52.2  | Fixed points of 60 M envelope of arcs generated from FOS11       | 81    | 82    | 1.852 | 1.00 |
| 83            | 13 | 19      | 36.8  | 116 | 18    | 53.0  | Fixed points of 60 M envelope of arcs generated from FOS11       | 82    | 83    | 1.852 | 1.00 |
| 84            | 13 | 19      | 45.3  | 116 | 19    | 53.9  | Fixed points of 60 M envelope of arcs generated from FOS11       | 83    | 84    | 1.852 | 1.00 |
| 85            | 13 | 19      | 52.9  | 116 | 20    | 55.0  | Fixed points of 60 M envelope of arcs generated from FOS11       | 84    | 85    | 1.852 | 1.00 |
| 86            | 13 | 19      | 59.4  | 116 | 21    | 56.1  | Fixed points of 60 M envelope of arcs generated from FOS11       | 85    | 86    | 1.852 | 1.00 |
| 87            | 13 | 20      | 4.9   | 116 | 22    | 57.4  | Fixed points of 60 M envelope of arcs generated from FOS11       | 86    | 87    | 1.852 | 1.00 |
| 88            | 13 | 20      | 9.4   | 116 | 23    | 58.8  | Fixed points of 60 M envelope of arcs generated from FOS11       | 87    | 88    | 1.663 | 1.00 |

| OLCS<br>Point | Lá | atitude | e (N) | Longitude (E) Methods | Mathada | From | То   | Dista | nce   |       |      |
|---------------|----|---------|-------|-----------------------|---------|------|--|-------|-------|-------|------|
| ID            | 0  | •       |       | ۰                     | •       |      | Wethods  | Point | Point | KM    | М    |
| 89            | 13 | 20      | 13.0  | 116                   | 25      | 0.2  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS11 | 88    | 89    | 0.189 | 1.00 |
| 90            | 13 | 20      | 15.5  | 116                   | 26      | 1.7  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS11 | 89    | 90    | 0.232 | 1.00 |
| 91            | 13 | 20      | 17.0  | 116                   | 27      | 3.2  | Fixed points of 60 M envelope of arcs generated from FOS11       | 90    | 91    | 0.129 | 1.00 |
| 92            | 13 | 20      | 17.5  | 116                   | 28      | 4.2  | Fixed points of 60 M envelope of arcs generated from FOS11       | 91    | 92    | 1.835 | 1.00 |
| 93            | 13 | 20      | 17.0  | 116                   | 29      | 5.7  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS11 | 92    | 93    | 1.852 | 1.00 |
| 94            | 13 | 20      | 15.5  | 116                   | 30      | 7.3  | Fixed points of 60 M envelope of arcs generated from FOS11       | 93    | 94    | 0.027 | 1.00 |
| 95            | 13 | 20      | 12.9  | 116                   | 31      | 8.7  | Fixed points of 60 M<br>envelope of arcs<br>generated from FOS11 | 94    | 95    | 1.825 | 1.00 |
| 96            | 13 | 20      | 12.3  | 116                   | 31      | 20.3 | Fixed points on 350 M  | 95    | 96    | 0.347 | 0.19 |