



## Council

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## **Report and recommendations of the Legal and Technical Commission to the Council of the International Seabed Authority relating to an application for the approval of a plan of work for exploration for cobalt-rich ferromanganese crusts by the China Ocean Mineral Resources Research and Development Association**

### **I. Introduction**

1. On 27 July 2012, the Secretary-General of the International Seabed Authority received an application from the China Ocean Mineral Resources Research and Development Association (COMRA) for the approval of a plan of work for exploration for cobalt-rich ferromanganese crusts in the Area (see ISBA/19/LTC/5). The application was submitted pursuant to the Regulations on Prospecting and Exploration for Cobalt-rich Ferromanganese Crusts in the Area (ISBA/18/A/11, annex). The application covers a total surface area of 3,000 square kilometres, located in the West Pacific Ocean.

2. In accordance with regulation 22 (c) of the Regulations, by a note verbale dated 24 August 2012, the Secretary-General notified the members of the International Seabed Authority of the receipt of the application and circulated information of a general nature concerning the application. The Secretary-General also placed consideration of the application on the agenda of the meeting of the Legal and Technical Commission held from 4 to 8 February 2013.

### **II. Methodology for consideration of the application by the Legal and Technical Commission**

#### **A. General methodology applied by the Commission in consideration of the application**

3. In its consideration of the application, the Commission noted that, in keeping with the scheme established in article 6 of annex III to the United Nations



Convention on the Law of the Sea, it was first required to make an objective determination as to whether the applicant had fulfilled the requirements contained in the Regulations, particularly with respect to the form of applications; whether the applicant had provided the necessary undertakings and assurances specified in regulation 15; and whether it had the necessary financial and technical capability to carry out the proposed plan of work for exploration. The Commission is then required to determine, in accordance with regulation 23, paragraph 4, whether the proposed plan of work will provide for effective protection of human health and safety and effective protection and preservation of the marine environment and will ensure that installations are not established where interference may be caused to the use of recognized sea lanes essential to international navigation or in areas of intense fishing activity. Regulation 23, paragraph 5, provides that, if the Commission makes the determinations specified in paragraph 3 of regulation 23 and determines that the proposed plan of work for exploration meets the requirements of paragraph 4, the Commission shall recommend approval of the plan of work for exploration to the Council.

4. In considering the proposed plan of work for exploration for cobalt-rich ferromanganese crusts, the Commission took into account the principles, policies and objectives relating to activities in the Area as provided for in part XI and annex III of the Convention and in the Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea.

## **B. Consideration of the application**

5. The Commission considered the application in closed meetings on 4, 5, 6 and 8 February 2013.

6. Prior to commencing a detailed examination of the application, the Commission invited the applicant's designated representative, Jin Jiancai, Secretary-General of COMRA, to make a presentation of the application. The following members of the delegation made statements: He Gaowen, Deputy Chief Engineer, Guangzhou Marine Geological Survey, China Geological Survey, Ministry of Land and Resources; and Wang Chunsheng, Senior Researcher, Second Institute of Oceanography, State Oceanic Administration. Members of the Commission then asked questions to clarify certain aspects of the application before convening in closed session to examine the application in detail. Following its initial consideration, the Commission decided to request the Chair of the Commission to transmit a list of questions to the applicant in writing. The written responses provided by the applicant, which superseded the equivalent parts of the originally submitted application, were taken into account by the Commission in its subsequent consideration.

## **III. Summary of basic information regarding the application**

### **A. Identification of the applicant**

7. The name and address of the applicant are as follows:

(a) Name: China Ocean Mineral Resources Research and Development Association (COMRA);

- (b) Street address: 1 Fuxingmenwai Avenue, Beijing, China, 100860;
  - (c) Postal address: as above;
  - (d) Telephone number: 86-10-68022117;
  - (e) Facsimile number: 86-10-68033318;
  - (f) E-mail address: comra@comra.org.
8. The applicant's designated representative is:
- (a) Name: JIN Jiancai;
  - (b) Street and postal addresses: 1 Fuxingmenwai Avenue, Beijing, China, 100860;
  - (c) Telephone number: 86-10-68030504;
  - (d) Facsimile number: 86-10-68030504;
  - (e) E-mail address: jin@comra.org;
  - (f) Applicant's place of registration and principal place of business/ domicile: Beijing, China.
9. The applicant provided a certificate of registration issued on 16 June 2008 and renewed until 31 March 2013 which indicates that COMRA is registered as a State enterprise in the sponsoring State.

## **B. Sponsorship**

10. The sponsoring State is China.
11. The date of deposit of the sponsoring State's instrument of ratification of the United Nations Convention on the Law of the Sea and date of its consent to be bound by the Agreement relating to the implementation of Part XI of the Convention is 7 July 1996.
12. The certificate of sponsorship is dated 18 June 2012; it was issued by Liu Cigui, Administrator, State Oceanic Administration.
13. The Commission noted that the application was sponsored by China and that a certificate of sponsorship, in due and proper form, had been submitted. In that certificate, the State Oceanic Administration, acting on behalf of China, and as authorized by the State Council of China, stated that COMRA was under the effective control of China; and the sponsoring State declared that it assumed responsibility in accordance with article 139 and paragraph 4 of article 153 of the United Nations Convention on the Law of the Sea and paragraph 4 of article 4 of annex III to the Convention.

## **C. Area of application**

14. The area comprises two sub-areas, namely sub-area A-I and sub-area A-II, each comprising 75 blocks. Each block is square in shape and not greater than 20 square kilometres. The blocks are grouped into four clusters. The total area under application does not exceed 3,000 square kilometres. All of the blocks are located

entirely within a geographical area measuring not more than 550 kilometres by 550 kilometres. The coordinates and general location of the area under application are shown in the annexes to the present document. This is in compliance with regulation 12.

#### **D. Other information**

15. The applicant has been previously awarded two contracts with the Authority as follows:

(a) COMRA and the Authority signed a contract for exploration for polymetallic nodules in the Area on 22 May 2001 in Beijing;

(b) COMRA and the Authority signed a contract for exploration for polymetallic sulphides in the Area on 18 November 2011 in Beijing.

The applicant has listed the reports submitted in accordance with the Regulations on prospecting and exploration for polymetallic nodules in the Area.

16. The application includes a written undertaking dated 18 June 2012 and signed by the designated representative of the applicant.

17. The applicant elects to offer an equity interest in a joint venture arrangement in accordance with regulation 19.

18. The applicant has paid a fee of \$500,000 in accordance with regulation 21.

#### **IV. Examination of information and technical data submitted by the applicant**

19. The following technical documents and information were provided:

(a) Information relating to the area under application:

(i) Charts of the location of the blocks;

(ii) A list of the coordinates of the blocks under application;

(b) A certificate of sponsorship;

(c) Information to enable the Council to determine whether the applicant is financially capable of carrying out the proposed plan of work for exploration;

(d) Information to enable the Council to determine whether the applicant is technically capable of carrying out the proposed plan of work for exploration;

(e) Plan of work for exploration;

(f) Training programme;

(g) Written undertakings by the applicant.

## **V. Consideration of financial and technical qualifications of the applicant**

### **A. Financial capacity**

20. The applicant declared its financial capacity to carry out the proposed plan of work for exploration and fulfil its financial obligations to the Authority. In evaluating the financial capacity of the applicant, the Commission was provided with a financial statement dated 18 June 2012 and duly signed by Xie Xuren, Minister of Finance of China, certifying that the applicant has the necessary financial resources to meet the estimated costs of the proposed plan of work for exploration and to fulfil its financial obligations to the Authority.

### **B. Technical capacity**

21. The applicant stated that it was one of the registered pioneer investors of exploration for polymetallic nodules in the Area and that it possessed the relevant capability to explore for seabed mineral resources. The applicant further stated that it had been performing investigations into the cobalt-rich ferromanganese crusts of the Pacific Ocean since the 1990s. These activities have included testing of ores, excavation and processing and environmental studies. The applicant outlined the main methods it would use for investigations, including technical descriptions, and their purpose. The applicant also described the environmental monitoring activities associated with specific activities such as test mining.

22. The applicant indicated that information gained by both the applicant and other entities would be used, along with data collected during baseline studies, to allow a preliminary five-year assessment of the potential impact of the proposed activities on the marine environment.

23. The applicant provided information related to the prevention, reduction and control of hazards and possible impacts to the marine environment. The information included a list of the measures that would be taken to respond to incidents that were likely to cause serious harm to the marine environment, as well as measures to comply with relevant IMO conventions to which the sponsoring State is a party and to cooperate with the Authority in establishing rules and environmental guidelines, gathering baseline data and establishing contingency plans to respond effectively to such incidents.

## **VI. Consideration of data and information submitted for approval of the plan of work for exploration**

24. In accordance with regulation 20 of the Regulations, the application included the following information for approval of the plan of work for exploration:

(a) A general description and a schedule of the proposed exploration programme of activities for the first five-year period, such as studies to be undertaken in respect of the environmental, technical, economic and other appropriate factors that must be taken into account in exploration;

(b) A description of the programme for oceanographic and environmental baseline studies in accordance with the Regulations and environmental rules, regulations and procedures established by the Authority that would enable an assessment of the potential environmental impact of the proposed exploration activities, including, but not restricted to, the impact on biodiversity, taking into account any recommendations by the Legal and Technical Commission;

(c) A preliminary assessment of the possible impact of the proposed exploration activities on the marine environment;

(d) A description of proposed measures for the prevention, reduction and control of pollution and other hazards, as well as possible impacts, to the marine environment;

(e) Information necessary for the Council to make the determination it is required to make in accordance with regulation 13, paragraph 1, of the Regulations;

(f) A schedule of anticipated yearly expenditures in respect of the programme of activities for the first five-year period.

## **VII. Training programme**

25. The applicant submitted a provisional training programme.

## **VIII. Conclusion and recommendations**

26. Having examined the particulars submitted by the applicant, which are summarized in sections III to VII above, the Commission is satisfied that the application has been duly submitted in accordance with the Regulations and that the applicant:

(a) Has complied with the provisions of the Regulations;

(b) Has given the undertakings and assurances specified in regulation 15;

(c) Possesses the financial and technical capability to carry out the proposed plan of work for exploration.

27. The Commission states that none of the conditions in regulation 23, paragraph 6, of the Regulations apply.

28. The Commission is satisfied that the proposed plan of work for exploration will:

(a) Provide for effective protection of human health and safety;

(b) Provide for effective protection and preservation of the marine environment;

(c) Ensure that installations are not established where interference may be caused to the use of recognized sea lanes essential to international navigation or in areas of intense fishing activity.

29. Accordingly, pursuant to regulation 23, paragraph 5, of the Regulations, the Commission recommends to the Council approval of the plan of work for exploration submitted by COMRA.

## Annex I

**List of coordinates of the area under application (in accordance with the World Geodetic System 84)**

## Area I

Block No.	Longitude E			Latitude N		
	(degrees)	(minutes)	(seconds)	(degrees)	(minutes)	(seconds)
1	156	25	58.35	12	37	18.43
	156	28	26.56	12	37	18.18
	156	28	26.30	12	34	52.61
	156	25	58.10	12	34	52.87
2	156	28	26.44	12	36	11.44
	156	30	54.65	12	36	11.17
	156	30	54.36	12	33	45.61
	156	28	26.17	12	33	45.88
3	156	30	54.65	12	36	11.17
	156	33	22.85	12	36	10.87
	156	33	22.54	12	33	45.31
	156	30	54.36	12	33	45.61
4	156	33	23.17	12	38	36.43
	156	35	51.39	12	38	36.11
	156	35	51.05	12	36	10.55
	156	33	22.85	12	36	10.87
5	156	30	54.94	12	38	36.73
	156	33	23.17	12	38	36.43
	156	33	22.85	12	36	10.87
	156	30	54.65	12	36	11.17
6	156	28	26.71	12	38	37.01
	156	30	54.94	12	38	36.73
	156	30	54.65	12	36	11.17
	156	28	26.44	12	36	11.44
7	156	25	58.59	12	39	43.99
	156	28	26.83	12	39	43.74
	156	28	26.56	12	37	18.18
	156	25	58.35	12	37	18.43
8	156	28	26.98	12	41	2.57
	156	30	55.23	12	41	2.29
	156	30	54.94	12	38	36.73
	156	28	26.71	12	38	37.01
9	156	30	55.23	12	41	2.29
	156	33	23.48	12	41	1.99

Block No.	Longitude E			Latitude N		
	(degrees)	(minutes)	(seconds)	(degrees)	(minutes)	(seconds)
10	156	33	23.17	12	38	36.43
	156	30	54.94	12	38	36.73
	156	33	23.48	12	41	1.99
	156	35	51.73	12	41	1.67
	156	35	51.39	12	38	36.11
11	156	33	23.17	12	38	36.43
	156	33	23.80	12	43	27.55
	156	35	52.07	12	43	27.23
	156	35	51.73	12	41	1.67
12	156	33	23.48	12	41	1.99
	156	30	55.52	12	43	27.85
	156	33	23.80	12	43	27.55
	156	33	23.48	12	41	1.99
13	156	30	55.23	12	41	2.29
	156	28	27.25	12	43	28.13
	156	30	55.52	12	43	27.85
	156	30	55.23	12	41	2.29
14	156	28	26.98	12	41	2.57
	156	28	27.52	12	45	53.69
	156	30	55.82	12	45	53.42
	156	30	55.52	12	43	27.85
15	156	28	27.25	12	43	28.13
	156	30	55.82	12	45	53.42
	156	33	24.12	12	45	53.11
16	156	33	23.80	12	43	27.55
	156	30	55.52	12	43	27.85
	156	33	24.12	12	45	53.11
	156	35	52.41	12	45	52.79
17	156	35	52.07	12	43	27.23
	156	33	23.80	12	43	27.55
	156	35	52.41	12	45	52.79
	156	38	20.71	12	45	52.44
	156	38	20.34	12	43	26.89
18	156	35	52.07	12	43	27.23
	156	35	52.76	12	48	18.35
	156	38	21.08	12	48	18.00
	156	38	20.71	12	45	52.44
	156	35	52.41	12	45	52.79



<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
19	156	33	24.43	12	48	18.67
	156	35	52.76	12	48	18.35
	156	35	52.41	12	45	52.79
	156	33	24.12	12	45	53.11
20	156	30	56.11	12	48	18.98
	156	33	24.43	12	48	18.67
	156	33	24.12	12	45	53.11
	156	30	55.82	12	45	53.42
21	156	28	27.79	12	48	19.26
	156	30	56.11	12	48	18.98
	156	30	55.82	12	45	53.42
	156	28	27.52	12	45	53.69
22	156	28	28.06	12	50	44.82
	156	30	56.41	12	50	44.54
	156	30	56.11	12	48	18.98
	156	28	27.79	12	48	19.26
23	156	30	56.41	12	50	44.54
	156	33	24.75	12	50	44.23
	156	33	24.43	12	48	18.67
	156	30	56.11	12	48	18.98
24	156	28	28.34	12	53	10.38
	156	30	56.71	12	53	10.10
	156	30	56.41	12	50	44.54
	156	28	28.06	12	50	44.82
25	156	30	56.71	12	53	10.10
	156	33	25.08	12	53	9.79
	156	33	24.75	12	50	44.23
	156	30	56.41	12	50	44.54
26	156	33	25.02	12	52	45.99
	156	35	53.39	12	52	45.67
	156	35	53.04	12	50	20.11
	156	33	24.70	12	50	20.43
27	156	35	53.39	12	52	45.67
	156	38	21.75	12	52	45.32
	156	38	21.38	12	50	19.76
	156	35	53.04	12	50	20.11
28	156	38	21.81	12	53	7.77
	156	40	50.17	12	53	7.39

Block No.	Longitude E			Latitude N		
	(degrees)	(minutes)	(seconds)	(degrees)	(minutes)	(seconds)
29	156	40	49.78	12	50	41.84
	156	38	21.44	12	50	42.21
	156	33	25.35	12	55	11.55
	156	35	53.73	12	55	11.22
	156	35	53.39	12	52	45.67
30	156	33	25.02	12	52	45.99
	156	35	53.73	12	55	11.22
	156	38	22.12	12	55	10.87
	156	38	21.75	12	52	45.32
31	156	35	53.39	12	52	45.67
	156	38	22.18	12	55	33.32
	156	40	50.57	12	55	32.95
	156	40	50.17	12	53	7.39
32	156	38	21.81	12	53	7.77
	156	40	50.46	12	54	54.48
	156	43	18.85	12	54	54.09
	156	43	18.43	12	52	28.53
33	156	40	50.07	12	52	28.93
	156	40	50.86	12	57	20.04
	156	43	19.26	12	57	19.64
	156	43	18.85	12	54	54.09
34	156	40	50.46	12	54	54.48
	156	43	19.02	12	55	55.40
	156	45	47.41	12	55	54.98
	156	45	46.97	12	53	29.43
35	156	43	18.60	12	53	29.85
	156	43	19.44	12	58	20.96
	156	45	47.85	12	58	20.53
	156	45	47.41	12	55	54.98
36	156	43	19.02	12	55	55.40
	156	45	47.73	12	57	41.14
	156	48	16.14	12	57	40.70
	156	48	15.67	12	55	15.15
37	156	45	47.29	12	55	15.59
	156	45	48.18	13	0	6.69
	156	48	16.61	13	0	6.25
	156	48	16.14	12	57	40.70
	156	45	47.73	12	57	41.14

<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
38	156	48	16.57	12	59	54.07
	156	50	45.00	12	59	53.60
	156	50	44.51	12	57	28.05
	156	48	16.10	12	57	28.52
39	156	48	26.68	13	2	19.59
	156	50	55.13	13	2	19.12
	156	50	54.63	12	59	53.57
	156	48	26.21	12	59	54.04
40	156	50	55.06	13	2	0.15
	156	53	23.51	13	1	59.66
	156	53	22.99	12	59	34.11
	156	50	54.57	12	59	34.61
41	156	50	55.56	13	4	25.70
	156	53	24.03	13	4	25.20
	156	53	23.51	13	1	59.66
	156	50	55.06	13	2	0.15
42	156	53	24.41	13	6	9.65
	156	55	52.89	13	6	9.12
	156	55	52.35	13	3	43.58
	156	53	23.88	13	3	44.10
43	156	53	23.88	13	3	44.10
	156	55	52.35	13	3	43.58
	156	55	51.80	13	1	18.03
	156	53	23.36	13	1	18.56
44	156	53	23.36	13	1	18.56
	156	55	51.80	13	1	18.03
	156	55	51.26	12	58	52.49
	156	53	22.85	12	58	53.01
45	156	55	51.92	13	1	49.06
	156	58	20.36	13	1	48.51
	156	58	19.79	12	59	22.97
	156	55	51.37	12	59	23.51
46	156	55	51.37	12	59	23.51
	156	58	19.79	12	59	22.97
	156	58	19.23	12	56	57.43
	156	55	50.83	12	56	57.97
47	156	58	19.71	12	59	3.22
	157	0	48.13	12	59	2.65

Block No.	Longitude E			Latitude N		
	(degrees)	(minutes)	(seconds)	(degrees)	(minutes)	(seconds)
48	157	0	47.54	12	56	37.11
	156	58	19.15	12	56	37.68
	156	58	31.41	12	56	37.63
	157	0	59.80	12	56	37.06
	157	0	59.21	12	54	11.52
49	156	58	30.85	12	54	12.09
	157	0	59.46	12	55	14.49
	157	3	27.84	12	55	13.90
	157	3	27.22	12	52	48.36
50	157	0	58.88	12	52	48.95
	157	3	27.57	12	54	11.69
	157	5	55.93	12	54	11.08
	157	5	55.30	12	51	45.54
	157	3	26.96	12	51	46.15
51	157	0	58.88	12	52	48.95
	157	3	27.22	12	52	48.36
	157	3	26.62	12	50	22.82
	157	0	58.29	12	50	23.40
52	156	58	30.53	12	52	49.51
	157	0	58.88	12	52	48.95
	157	0	58.29	12	50	23.40
	156	58	29.96	12	50	23.97
53	156	58	58.86	12	50	23.86
	157	1	27.18	12	50	23.29
	157	1	26.59	12	47	57.75
	156	58	58.29	12	47	58.31
54	157	1	27.18	12	50	23.29
	157	3	55.51	12	50	22.70
	157	3	54.89	12	47	57.16
	157	1	26.59	12	47	57.75
55	156	58	58.29	12	47	58.31
	157	1	26.59	12	47	57.75
	157	1	26.01	12	45	32.21
	156	58	57.73	12	45	32.77
56	156	56	29.99	12	47	58.86
	156	58	58.29	12	47	58.31
	156	58	57.73	12	45	32.77
	156	56	29.45	12	45	33.31

<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
57	156	56	29.45	12	45	33.31
	156	58	57.73	12	45	32.77
	156	58	57.17	12	43	7.22
	156	56	28.91	12	43	7.76
58	156	54	1.04	12	44	58.60
	156	56	29.32	12	44	58.09
	156	56	28.78	12	42	32.54
	156	54	0.53	12	42	33.05
59	156	53	9.77	12	42	33.22
	156	55	38.03	12	42	32.72
	156	55	37.50	12	40	7.17
	156	53	9.27	12	40	7.67
60	156	50	41.57	12	42	48.90
	156	53	9.83	12	42	48.41
	156	53	9.32	12	40	22.86
	156	50	41.09	12	40	23.35
61	156	50	11.44	12	40	23.44
	156	52	39.67	12	40	22.96
	156	52	39.17	12	37	57.41
	156	50	10.96	12	37	57.89
62	156	48	13.54	12	44	1.52
	156	50	41.81	12	44	1.05
	156	50	41.33	12	41	35.50
	156	48	13.08	12	41	35.96
63	156	45	45.70	12	46	29.22
	156	48	14.00	12	46	28.78
	156	48	13.54	12	44	3.23
	156	45	45.27	12	44	3.67
64	156	45	45.27	12	44	3.67
	156	48	13.54	12	44	3.23
	156	48	13.08	12	41	37.68
	156	45	44.83	12	41	38.12
65	156	43	17.13	12	44	53.75
	156	45	45.42	12	44	53.34
	156	45	44.98	12	42	27.78
	156	43	16.72	12	42	28.20
66	156	43	17.55	12	47	19.31
	156	45	45.85	12	47	18.89

<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
	156	45	45.42	12	44	53.34
	156	43	17.13	12	44	53.75
67	156	40	49.35	12	48	1.30
	156	43	17.66	12	48	0.91
	156	43	17.25	12	45	35.36
	156	40	48.96	12	45	35.75
68	156	40	48.96	12	45	35.75
	156	43	17.25	12	45	35.36
	156	43	16.84	12	43	9.80
	156	40	48.57	12	43	10.19
69	156	38	21.08	12	48	18.01
	156	40	49.39	12	48	17.64
	156	40	49.00	12	45	52.08
	156	38	20.71	12	45	52.45
70	156	38	20.71	12	45	52.45
	156	40	49.00	12	45	52.08
	156	40	48.62	12	43	26.53
	156	38	20.34	12	43	26.89
71	156	32	8.59	12	18	28.08
	156	34	36.62	12	18	27.78
	156	34	36.31	12	16	2.21
	156	32	8.29	12	16	2.51
72	156	29	40.55	12	18	28.36
	156	32	8.59	12	18	28.08
	156	32	8.29	12	16	2.51
	156	29	40.28	12	16	2.79
73	156	27	12.51	12	18	28.62
	156	29	40.55	12	18	28.36
	156	29	40.28	12	16	2.79
	156	27	12.26	12	16	3.05
74	156	27	12.26	12	16	3.05
	156	29	40.28	12	16	2.79
	156	29	40.01	12	13	37.23
	156	27	12.01	12	13	37.48
75	156	29	40.28	12	16	2.79
	156	32	8.29	12	16	2.51
	156	32	8.00	12	13	36.95
	156	29	40.01	12	13	37.23

**Area A-II**

<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
1	154	54	10.71	15	24	12.21
	154	56	40.71	15	24	12.93
	154	56	41.44	15	21	47.42
	154	54	11.48	15	21	46.70
2	154	56	40.84	15	23	46.95
	154	59	10.83	15	23	47.65
	154	59	11.53	15	21	22.14
	154	56	41.57	15	21	21.44
3	154	59	11.18	15	22	34.24
	155	1	41.16	15	22	34.90
	155	1	41.83	15	20	9.39
	154	59	11.88	15	20	8.72
4	155	1	41.43	15	21	35.76
	155	4	11.40	15	21	36.40
	155	4	12.04	15	19	10.89
	155	1	42.10	15	19	10.25
5	155	4	11.67	15	20	34.20
	155	6	41.63	15	20	34.82
	155	6	42.24	15	18	9.30
	155	4	12.32	15	18	8.69
6	155	1	42.10	15	19	10.25
	155	4	12.04	15	19	10.89
	155	4	12.68	15	16	45.37
	155	1	42.77	15	16	44.73
7	155	0	35.55	15	16	44.44
	155	3	5.45	15	16	45.09
	155	3	6.11	15	14	19.57
	155	0	36.23	15	14	18.92
8	154	58	58.32	15	14	18.49
	155	1	28.20	15	14	19.15
	155	1	28.87	15	11	53.64
	154	58	59.02	15	11	52.97
9	154	57	57.00	15	11	52.69
	155	0	26.85	15	11	53.37
	155	0	27.53	15	9	27.85
	154	57	57.71	15	9	27.18
10	154	56	28.44	15	14	17.79
	154	58	58.32	15	14	18.49

<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
11	154	58	59.02	15	11	52.97
	154	56	29.17	15	11	52.28
	154	58	5.64	15	16	43.76
	155	0	35.55	15	16	44.44
	155	0	36.23	15	14	18.92
12	154	58	6.35	15	14	18.25
	154	55	35.67	15	16	56.08
	154	58	5.58	15	16	56.78
	154	58	6.29	15	14	31.27
13	154	55	36.41	15	14	30.57
	154	54	12.24	15	19	21.19
	154	56	42.17	15	19	21.91
	154	56	42.90	15	16	56.40
	154	54	12.99	15	16	55.68
14	154	56	41.57	15	21	21.44
	154	59	11.53	15	21	22.14
	154	59	12.23	15	18	56.62
	154	56	42.30	15	18	55.93
15	154	54	11.48	15	21	46.70
	154	56	41.44	15	21	47.42
	154	56	42.17	15	19	21.91
	154	54	12.24	15	19	21.19
16	154	52	44.70	15	29	40.39
	154	55	14.76	15	29	41.14
	154	55	15.51	15	27	15.63
	154	52	45.49	15	27	14.88
	154	55	14.94	15	29	7.05
17	154	57	44.99	15	29	7.77
	154	57	45.71	15	26	42.26
	154	55	15.69	15	26	41.54
	154	55	14.18	15	31	32.56
18	154	57	44.26	15	31	33.28
	154	57	44.99	15	29	7.77
	154	55	14.94	15	29	7.05
	154	54	46.25	15	33	57.93
	154	57	16.36	15	33	58.66
19	154	57	17.09	15	31	33.15
	154	54	47.01	15	31	32.43



<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
20	154	54	7.92	15	36	23.25
	154	56	38.06	15	36	23.99
	154	56	38.80	15	33	58.48
	154	54	8.69	15	33	57.75
21	154	54	7.14	15	38	48.76
	154	56	37.31	15	38	49.49
	154	56	38.06	15	36	23.99
	154	54	7.92	15	36	23.25
22	154	54	6.37	15	41	14.26
	154	56	36.56	15	41	15.00
	154	56	37.31	15	38	49.49
	154	54	7.14	15	38	48.76
23	154	54	5.59	15	43	39.77
	154	56	35.81	15	43	40.51
	154	56	36.56	15	41	15.00
	154	54	6.37	15	41	14.26
24	154	53	57.61	15	46	5.23
	154	56	27.86	15	46	5.98
	154	56	28.62	15	43	40.47
	154	53	58.39	15	43	39.73
25	154	56	27.80	15	46	18.37
	154	58	58.06	15	46	19.09
	154	58	58.78	15	43	53.58
	154	56	28.55	15	43	52.87
26	154	56	27.04	15	48	43.88
	154	58	57.33	15	48	44.60
	154	58	58.06	15	46	19.09
	154	56	27.80	15	46	18.37
27	154	58	57.01	15	49	48.12
	155	1	27.32	15	49	48.81
	155	1	28.02	15	47	23.30
	154	58	57.74	15	47	22.61
28	154	58	57.74	15	47	22.61
	155	1	28.02	15	47	23.30
	155	1	28.71	15	44	57.79
	154	58	58.47	15	44	57.10
29	155	1	27.74	15	48	20.62
	155	3	58.03	15	48	21.28

Block No.	Longitude E			Latitude N		
	(degrees)	(minutes)	(seconds)	(degrees)	(minutes)	(seconds)
30	155	3	58.70	15	45	55.77
	155	1	28.44	15	45	55.11
	155	1	27.05	15	50	46.13
	155	3	57.36	15	50	46.79
	155	3	58.03	15	48	21.28
31	155	1	27.74	15	48	20.62
	155	3	57.19	15	51	23.97
	155	6	27.52	15	51	24.61
	155	6	28.16	15	48	59.10
32	155	3	57.86	15	48	58.46
	155	3	57.86	15	48	58.46
	155	6	28.16	15	48	59.10
33	155	6	28.80	15	46	33.58
	155	3	58.53	15	46	32.95
	155	6	27.94	15	49	50.22
	155	8	58.25	15	49	50.83
	155	8	58.86	15	47	25.31
34	155	6	28.57	15	47	24.71
	155	6	27.30	15	52	15.74
	155	8	57.64	15	52	16.34
	155	8	58.25	15	49	50.83
35	155	6	27.94	15	49	50.22
	155	8	57.41	15	53	9.79
	155	11	27.77	15	53	10.37
36	155	11	28.35	15	50	44.86
	155	8	58.02	15	50	44.28
	155	8	58.02	15	50	44.28
	155	11	28.35	15	50	44.86
	155	11	28.93	15	48	19.34
37	155	8	58.63	15	48	18.77
	155	11	27.77	15	53	10.37
	155	13	58.12	15	53	10.92
38	155	13	58.67	15	50	45.40
	155	11	28.35	15	50	44.86
	155	11	27.19	15	55	35.88
	155	13	57.57	15	55	36.43
	155	13	58.12	15	53	10.92
	155	11	27.77	15	53	10.37

<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
39	155	13	57.98	15	53	49.57
	155	16	28.34	15	53	50.09
	155	16	28.86	15	51	24.58
	155	13	58.53	15	51	24.06
40	155	13	57.43	15	56	15.09
	155	16	27.82	15	56	15.61
	155	16	28.34	15	53	50.09
	155	13	57.98	15	53	49.57
41	155	13	56.87	15	58	40.60
	155	16	27.30	15	58	41.13
	155	16	27.82	15	56	15.61
	155	13	57.43	15	56	15.09
42	155	16	27.22	15	59	3.21
	155	18	57.65	15	59	3.71
	155	18	58.14	15	56	38.19
	155	16	27.74	15	56	37.70
43	155	16	27.74	15	56	37.70
	155	18	58.14	15	56	38.19
	155	18	58.64	15	54	12.67
	155	16	28.26	15	54	12.18
44	155	16	28.26	15	54	12.18
	155	18	58.64	15	54	12.67
	155	18	59.13	15	51	47.15
	155	16	28.79	15	51	46.66
45	155	18	58.29	15	55	54.01
	155	21	28.69	15	55	54.47
	155	21	29.15	15	53	28.95
	155	18	58.78	15	53	28.49
46	155	18	57.80	15	58	19.53
	155	21	28.22	15	58	19.99
	155	21	28.69	15	55	54.47
	155	18	58.29	15	55	54.01
47	155	21	28.45	15	57	8.20
	155	23	58.86	15	57	8.64
	155	23	59.29	15	54	43.12
	155	21	28.91	15	54	42.68
48	155	21	28.91	15	54	42.68
	155	23	59.29	15	54	43.12

<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
49	155	23	59.73	15	52	17.59
	155	21	29.38	15	52	17.16
	155	23	59.29	15	54	43.12
	155	26	29.68	15	54	43.52
	155	26	30.08	15	52	18.00
50	155	23	59.73	15	52	17.59
	155	26	29.72	15	54	27.46
	155	29	0.10	15	54	27.83
	155	29	0.47	15	52	2.31
51	155	26	30.12	15	52	1.94
	155	28	59.96	15	55	21.08
	155	31	30.36	15	55	21.43
	155	31	30.70	15	52	55.91
52	155	29	0.34	15	52	55.56
	155	31	30.36	15	55	21.43
	155	34	0.75	15	55	21.75
	155	34	1.06	15	52	56.22
53	155	31	30.70	15	52	55.91
	155	31	30.70	15	52	55.91
	155	34	1.06	15	52	56.22
	155	34	1.37	15	50	30.70
54	155	31	31.04	15	50	30.38
	155	29	0.34	15	52	55.56
	155	31	30.70	15	52	55.91
	155	31	31.04	15	50	30.38
55	155	29	0.71	15	50	30.04
	155	27	45.82	15	50	29.86
	155	30	16.15	15	50	30.22
	155	30	16.50	15	48	4.69
56	155	27	46.20	15	48	4.33
	155	30	16.15	15	50	30.22
	155	32	46.48	15	50	30.54
	155	32	46.81	15	48	5.02
57	155	30	16.50	15	48	4.69
	155	28	18.60	15	48	4.41
	155	30	48.90	15	48	4.76
	155	30	49.25	15	45	39.24
	155	28	18.98	15	45	38.89

<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
58	155	25	48.30	15	48	4.03
	155	28	18.60	15	48	4.41
	155	28	18.98	15	45	38.89
	155	25	48.71	15	45	38.51
59	155	25	5.52	15	45	38.40
	155	27	35.79	15	45	38.78
	155	27	36.17	15	43	13.26
	155	25	5.93	15	43	12.87
60	155	27	35.79	15	45	38.78
	155	30	6.06	15	45	39.14
	155	30	6.42	15	43	13.62
	155	27	36.17	15	43	13.26
61	155	24	23.35	15	43	12.76
	155	26	53.59	15	43	13.15
	155	26	53.98	15	40	47.63
	155	24	23.77	15	40	47.24
62	155	24	23.77	15	40	47.24
	155	26	53.98	15	40	47.63
	155	26	54.37	15	38	22.10
	155	24	24.19	15	38	21.71
63	155	21	53.67	15	40	13.76
	155	24	23.87	15	40	14.18
	155	24	24.29	15	37	48.66
	155	21	54.12	15	37	48.24
64	155	21	54.12	15	37	48.24
	155	24	24.29	15	37	48.66
	155	24	24.71	15	35	23.13
	155	21	54.56	15	35	22.71
65	155	19	23.88	15	38	7.32
	155	21	54.06	15	38	7.77
	155	21	54.50	15	35	42.25
	155	19	24.36	15	35	41.80
66	155	19	24.36	15	35	41.80
	155	21	54.50	15	35	42.25
	155	21	54.95	15	33	16.72
	155	19	24.83	15	33	16.28
67	155	17	44.64	15	33	15.96
	155	20	14.75	15	33	16.43

<i>Block No.</i>	<i>Longitude E</i>			<i>Latitude N</i>		
	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>	<i>(degrees)</i>	<i>(minutes)</i>	<i>(seconds)</i>
68	155	20	15.22	15	30	50.90
	155	17	45.13	15	30	50.44
	155	15	14.75	15	32	12.76
	155	17	44.85	15	32	13.25
	155	17	45.34	15	29	47.73
69	155	15	15.27	15	29	47.24
	155	12	44.65	15	32	12.24
	155	15	14.75	15	32	12.76
	155	15	15.27	15	29	47.24
70	155	12	45.20	15	29	46.72
	155	10	14.55	15	32	11.69
	155	12	44.65	15	32	12.24
	155	12	45.20	15	29	46.72
71	155	10	15.13	15	29	46.17
	155	7	44.52	15	31	55.87
	155	10	14.61	15	31	56.45
	155	10	15.19	15	29	30.93
72	155	7	45.13	15	29	30.36
	155	5	14.51	15	31	35.27
	155	7	44.60	15	31	35.87
	155	7	45.21	15	29	10.36
73	155	5	15.15	15	29	9.75
	155	2	44.43	15	31	34.63
	155	5	14.51	15	31	35.27
	155	5	15.15	15	29	9.75
74	155	2	45.09	15	29	9.12
	155	0	14.34	15	31	33.97
	155	2	44.43	15	31	34.63
	155	2	45.09	15	29	9.12
75	155	0	15.04	15	29	8.46
	154	57	44.49	15	30	47.57
	155	0	14.56	15	30	48.26
	155	0	15.26	15	28	22.75
	154	57	45.21	15	28	22.06

## Annex II

### Map of the general location of the area under application

