


# ISA Contract for Exploration – Public Information Template

 Ocean Mineral Singapore	Type of resource: Polymetallic Nodules
	Name of Contractor: Ocean Mineral Singapore Pte Ltd
	Contract Start: 22 Jan 2015
Sponsoring State: Singapore	Contract End: 21 Jan 2030
	Location: Clarion-Clipperton Fracture Zone

## Contents

Introduction .....	3
1. Contract Information .....	4
2. Coordinates and Illustrative Chart of the Exploration Area.....	5
3. Plan of Work.....	7
4. Programme of Activities .....	8
5. Standard clauses .....	15

## Introduction

The information contained in this ISA Contract for Exploration – Public Information Template is made available to the public in response to the request by the Council of the ISA to make contracts publicly available, subject to restrictions on confidential information, industrial secrets and proprietary data.

The content of the present template is in accordance with the Regulations on Prospecting and Exploration for [*Polymetallic Nodules in the Area*] [*ISBA/19/C/17*] (the “Regulations”).

### **About Ocean Mineral Singapore Pte. Ltd.**

Ocean Mineral Singapore Pte. Ltd. (OMS), a Singapore-incorporated company majority owned by Keppel Corporation Limited (Keppel). Keppel is a Singapore listed company and is a global asset manager and operator with strong capabilities in energy & environment, urban development and connectivity, creating solutions for a sustainable future.

OMS's other shareholders are UK Seabed Resources, a wholly owned subsidiary of Loke Marine Mineral, and Singapore-based private investment company Lion City Capital Partners.

## 1. Contract Information

Annex III of the Regulations.

<b>Type of resource</b>	Polymetallic Nodules
<b>Name of Contractor</b>	Ocean Mineral Singapore Pte Ltd
<b>Contract Start</b>	22 Jan 2015
<b>Contract End</b>	21 Jan 2030
<b>Location</b>	Clarion-Clipperton Zone
<b>Contract Area (km<sup>2</sup>)</b>	58,280 km <sup>2</sup>

## 2. Coordinates and Illustrative Chart of the Exploration Area

### 1. List of coordinates

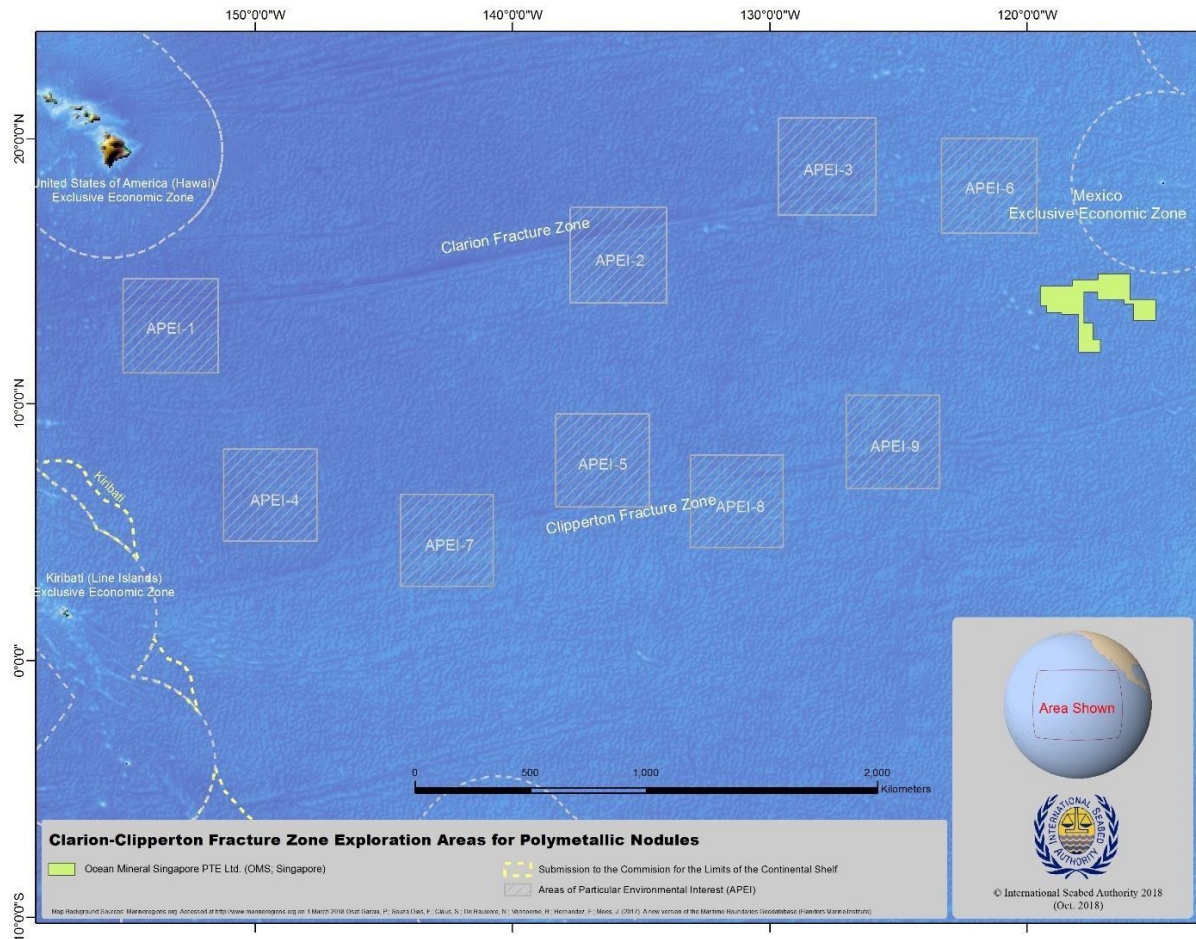
The area allocated to the Contractor is bounded by lines joining the following turning points, the coordinates of which are listed below in decimal degrees following the World Geodetic System 1984 geographical projection system:

**Table 1. Coordinates of the Exploration Area**

<i>Turning Point</i>	<i>Latitude (North)</i>	<i>Longitude (West)</i>
1	12.0000	117.1600
2	12.0000	118.0000
3	13.4333	118.0000
4	13.4333	118.6667
5	13.5000	118.6667
6	13.5000	119.2500
7	13.7500	119.2500
8	13.7500	119.5000
9	14.5000	119.5000
10	14.5000	118.2500
11	14.7500	118.2500
12	14.7500	117.2500
13	14.9667	117.2500
14	14.9667	116.0000
15	14.0000	116.0000
16	14.0000	115.0000
17	13.2000	115.0000
18	13.2000	115.8700
19	13.8200	115.8700
20	13.8200	116.2400
21	14.0000	116.2400
22	14.0000	117.2600
23	14.2800	117.2600
24	14.2800	117.8000
25	13.1000	117.8000
26	13.1000	117.4400
27	12.4700	117.4400
28	12.4700	117.1600

2. Illustrative chart of the exploration area

The area allocated to the Contractor covers a surface area of 58,280 km<sup>2</sup> in the eastern part in the Clarion-Clipperton Zone (CCZ) in the Pacific Ocean.



### 3. Plan of Work

*Summary of Plan of Work for Exploration including the Programme of Activities for the first and/or the current 5-year period (Regulation 18).*

The plan of work for exploration for polymetallic nodules, OMS will conduct environmental baseline studies and survey activities, with a detailed description of a programme for oceanographic and environmental baseline.

Major activities to be conducted in accordance with the exploration plan of work include:

- (1) Environmental baseline cruises, collection of data and analysis of data to obtain an environmental baseline for the area;
- (2) Survey activities to identify commercial recovery areas, followed by development of operational procedures and equipment requirements;
- (3) Advanced studies to select and develop improved survey equipment and techniques for analysis of data;
- (4) Assess and upgrade of survey equipment to improve the efficiency of exploration activities; and
- (5) Expanded analysis of ore grade, sediment, bathymetric, geological, and photographic data collected at sea, followed by preparation of reports and charts summarizing significant findings. Results from all aspects of the initial five-year exploration programme will necessarily inform and shape ongoing and subsequent activities.

## 4. Programme of Activities

Section 4.1 of Annex IV of the Regulations and Schedule 2 of Annex III of the Regulations.

Major activities to be conducted in accordance with the exploration plan of work include: (1) environmental baseline cruises, collection of data and analysis of data to obtain an environmental baseline for the area; (2) survey activities to identify commercial recovery areas, followed by development of operational procedures and equipment requirements; (3) advanced studies to select and develop improved survey equipment and techniques for analysis of data; and (4) Assessment on survey equipment.

### I. Agreed 5-year Programme of Activities

5-year Programme of Activities	First	Second	Third	Extension
General Objectives	<b>Objective</b>		<b>Description</b>	
	To conduct environmental baseline studies and survey activities and analyze technical and economic conditions for polymetallic nodule commercial recovery operations		<p><b>Environmental Baseline Studies</b> During the first few years, the primary focus for collection of environmental baseline data will be on proper delineation of the benthic environment within the exploration area and other areas in the CCZ for comparison purposes.</p> <p><b>Survey Activities</b> The primary objective of the survey activities during the first five years is to identify one or more sites within the exploration area as potential commercial recovery sites that can be used for subsequent testing of commercial recovery systems.</p> <p><b>Combined Environmental Baseline and Survey Cruises</b> Activities include: (a) initial planning of environmental baseline and survey cruises and associated requirements; (b) detailed planning of environmental baseline and survey cruises and analysis work; and (c) conducting cruises and analysis to obtain environmental baseline.</p> <p><b>Survey equipment Assessment</b> Activities include: (a) assessing improved methods and techniques; (b) choosing survey methods and a suite of associated surveying and environmental monitoring equipment for survey work; (c) continually assessing the effectiveness of the mineral</p>	



		<p>resource and environmental assessment equipment versus other newly arising methods and techniques for use in characterizing the resource; and (d) executing trade studies on costs and benefits of any potential new equipment upgrades. OMS intends to investigate the full spectrum of available technologies including ROVs, AUVs, gliders and satellites.</p>
--	--	--

## II. Results achieved during reported year [#]: [year]

<b>Table 3: Annual objectives and activities</b>		
<b>Year</b>	<b>Agreed Objectives</b>	<b>Details on Objectives Achieved</b>
<b>Year 1 (2015)</b>	One sampling cruise (40-50 days) to collect benthic biological field data.	<p>The ABYSSLINE 2015 Cruise (AB02) took place aboard the research vessel Thomas G. Thompson (R/V Thompson) between February 12, 2015 and March 25, 2015, as an expedition jointly funded and supported by UK Seabed Resources Ltd. (UKSRL) and Ocean Mineral Singapore (OMS). The chief objective of AB02 was to conduct an evaluation of biological and environmental baseline conditions in the UK1 contract area, and the OMS contract area at depths ranging from 3900 to 4400 meters (m) in the Clarion-Clipperton Zone (CCZ).</p> <p>The ABYSSLINE program was designed in accordance with the International Seabed Authority (ISA) environmental guidelines to use the best available technology for evaluating benthic biological baseline conditions. Biological, geological and oceanographic data were collected using a suite of scientific sampling equipment including: a box core, mega core, respirometer lander, baited trap, baited camera, plankton net, Brenke epibenthic sled, CTD, and 6000 m-rated Autonomous Underwater Vehicle (AUV).</p> <p>The Abyssline team was able to carry out additional successful deployments within the designated Area of Particular Environmental Interest No. 6 (APEI-6). APEI-6 is approximately 850 km north of OMS and offered a scientifically useful comparative baseline to the data collected.</p> <p>Keppel Corporation, the National University of Singapore (NUS) and the Singapore National Research Foundation, had set up the Keppel-NUS Corporate Laboratory on 25 November 2013, which supports Singapore's autonomous universities in their conduct of industry-relevant research with companies as partners and signifies a deeper collaboration between the industry and academia. Deepsea mining is one of its four-research themes under the Laboratory. To maximise involvement of local scientists and building of capability, AB02 was an excellent opportunity for Singapore-based scientists to build up their expertise in this field. The Keppel-NUS Corporate Laboratory, through the Tropical Marine Science Institute (TMSI) of the NUS, has five scientists participated the AB02 cruise.</p>
<b>Year 2 (2016)</b>	Review and analyse previous cruise's data and prepare for the Year 3 cruise,	The plan of works for year 2 (2016) pivoted primary on the continued synthesis of data collected from the 2015 Abyssline cruise to review and analyse to establish benthic baseline conditions within the OMS contract area. OMS reported the latest benthic biological results and submitted all supporting data in the format and structure into the template as provided by the Authority.

		<p>Under the existing Keppel-NUS Corporate Laboratory, there are also three following on-going major research thrusts OMS has reported the research outcomes to the authority:</p> <ul style="list-style-type: none"> <li>• Establishing an environmental baseline for deep-sea seabed nodules harvesting in the Clarion-Clipperton fracture zone, East Pacific Ocean, which the local scientists are currently actively engaged with exploration activities including the participation in the AB02 Expedition in 2015.</li> <li>• Deepwater surveying for mineral nodules using a team of commercial off-the-shelf unmanned aerial vehicles</li> <li>• Nodule harvesting technology and impact on the marine environment.</li> </ul>
<p><b>Year 3 (2017)</b></p>	<p>One sampling/ROV cruise (40- 50 days), with project planning and data synthesis occurring before and after the cruise.</p>	<p>To better incorporate the significant progress made on the environmental baseline work undertaken since the inception of the OMS contract signed in 2015, OMS continued to analyse its existing backlog of samples from the 2015 Abyssline cruise, and this allowed OMS to leverage upon the scientific, technical, and practical knowledge gained to develop the best approaches moving forward and bridge the specific information gaps that existed across the scientific teams as analyses are completed. In March 2018, OMS thus informed to the Authority of deferment of the next sample collection cruise until 2018.</p> <p>The plan of works for year 3 (2017) pivoted on the continued synthesis of data collected during the AB02 expedition in 2015, and as indicated previously to the Authority, to maximize the use of the samples collected during the 2015 Abyssline expedition, and OMS reported the latest benthic biological results, as well as submitted all supporting data in the format and structure into the template as provided by the Authority.</p> <p>To better understand the possible environmental impacts of deep-sea mining, OMS leveraged on the Keppel-NUS Corporate Laboratory initiative and continued the research on the sediment dispersion, which the main research objectives was to assess the spreading of sediment plume and tailing discharge caused by the technical activities using particle-based methods that respect the particulate nature of the sediment fluid; Model the poly- dispersed nature of the sediment in the sediment transport process to assess the movement of different sized and shaped particles; Optimise points of sediment release to minimize environmental impacts.</p> <p>At the 23<sup>rd</sup> annual session of the International Seabed Authority in Kingston, OMS has hosted lunch time side event to introduce the initiatives and research undertaken on environment baseline and sediment dispersion studies by OMS and the Keppel Group as well as through the establishment of the Keppel-NUS Corporate Laboratory showcasing the synergistic collaboration between academia, government and industry. This was the first international event hosted by OMS at this level and it was well attended by more than 120 persons, including Secretary-General, President of Council, President of Assembly, amongst other attendees from the member states, NGOs and other stakeholders. The side event, provided for a visible platform to globally introduce</p>

		<p>initiatives led through the Keppel-NUS Corporate Laboratory programme towards providing quality baseline data in an open and transparent manner through building capabilities for future mineral resource research under the Keppel-NUS Corporate Laboratory.</p>
<b>Year 4 (2018)</b>	<p>Review and analyse previous cruise's data workshop discussion</p>	<p>The plan of works for year 4 (2018) pivoted on the synthesis of remaining data following the completion of the first baseline survey as well as preparation of the next OMS expedition. OMS has taken into consideration of the latest technological advancements in survey and environmental data collection techniques to-date to the OMS sampling survey and the programme of activities.</p> <p>OMS has also conducted thorough due-diligence and risk assessment processes to accessing and investigating various survey methods and techniques to ensure the effectiveness of the mineral resource and environmental assessment equipment used. OMS has thus informed and highlighted to the Authority of deferment of the next sample collection cruise to identify and mitigate risks, whilst engaging various stakeholders and service providers.</p> <p>OMS has reported the latest benthic biological results, as well as submitted all supporting data in the format and structure into the template as provided by the Authority.</p>
<b>Year 5 (2019)</b>	<p>Planning for OMS next expedition</p>	<p>The plan of works for year 5 (2019) pivoted primarily on the planning, preparation and execution of the next OMS expedition. This included the continuation of assessment on the appropriate survey methods and techniques, identification and securing of key survey equipment as well as the selection of an appropriate scientific team.</p> <p>An assessment on the appropriate survey methods and techniques was also further supported by various field experts through a few planning meetings and takes full consideration of the latest technological advancements in survey and environmental data collection techniques to-date. As to the authority, OMS intends to incorporate the latest technological advancements in survey and environmental data collection techniques to-date, such as the advancement in precision AUV survey technology and multiple-AUV testing, which we note would be a first within the Deep Sea Mining industry.</p> <p>OMS also continued on the synthesis of remaining data following the completion of the first baseline survey. OMS intends to ensure the maintenance of the state-of-the-art and, to date, unique taxonomic contribution of the baseline survey data though continued work to see DNA taxonomic and connectivity work through to publication and report on additional faunal components of the current sample set will enable the regular updating of the ISA data template.</p>

<p><b>Year 6 (2020)</b></p>	<p>One sampling cruise (30 days) to collect resource and environmental data.</p>	<p>OMS embarked on its second exploration expedition in February 2020, as a follow-up to the 2015 exploration survey, which was jointly funded and supported by Ocean Mineral Singapore (OMS) and UK Seabed Resources Ltd. (UKSRL).</p> <p>The expedition's goal was to acquire targeted AUV based detailed sidescan and bathymetry surveys in the survey area, as well as collect environmental data from the boxcore samples, which will be compared with previously collected environmental data. The expedition survey efforts were cut short due to the effects of the COVID 19 pandemic. Despite this, OMS survey objectives were met. In addition, the biology team collected biological samples from the OMS area in order to establish a biological baseline in this section of the CCZ.</p>
<p><b>Year 7 (2021)</b></p>	<p>Analyse 2020 cruise's data and report research outcome</p>	<p>For year 7 (2021), OMS continued to collaborate with leading scientists to analyse samples from the 2020 exploration expedition in order to evaluate foraminiferan and microfaunal diversity on the nodules and sediment in the OMS area in greater detail, as well as obtain sediment samples for eDNA analysis. The effort included the use of best available methodology and processes to undertake benthic biological baseline studies in accordance with the LTC recommendations, as well as using state-of-the-art approaches in deep-sea ecological, taxonomic, and connectivity studies. OMS completed the sorting of bio-samples and reported the research outcomes to the ISA.</p>
<p><b>Year 8 (2022)</b></p>	<p>Analyse 2020 cruise's data and report research outcome</p>	<p>For year 8 (2022), OMS continued to analyze its existing samples collected from the 2020 expedition, allowing OMS to continue its environmental baseline study and establish the abyssal biological community baseline of nodule fields in the OMS area at the CCZ. OMS completed and reported the nodule fauna analysis and sorting of the specimens into major taxonomic groups.</p>
<p><b>Year 9 (2023)</b></p>	<p>Analyse 2020 cruise's data and report research outcome</p>	<p>For the year 9 (2023) OMS continued to focus on scientific analysis, collaboration as well as peer- reviewed publications to facilitate meaningful dialogue and stakeholder engagement, with a particularly focus on: Sorting and identifying selected deep-sea macro- and meiofauna (sponges, polychaetes, tanaids, copepods) into families. Further sorting and identifying selected families into genera and species. Reporting on additional faunal components of the existing sample set.</p> <p><b>Technology Development:</b> OMS proudly announces the grant of two-family patents across various jurisdictions. One patent namely "SUBSEA REMOTELY OPERATED VEHICLE (ROV) HUB" has been granted in both Singapore and the United States of America. Another patent namely "APPARATUS AND METHOD FOR SEABED RESOURCES COLLECTION" has been granted in total 8 jurisdictions</p>

<b>Year 10 (2024)</b>	Analyse 2020 cruise's data and report research outcome	<p>For the year 10 (2024) OMS continued to focus on further sorting and identifying selected families into genera and species. In summary, a total of 111,408 biological samples were collected during 2015 and 2020 expeditions, including 39 megafaunal, 16,952 macrofaunal (including 1,110 sponge specimens), and 94,417 meiofaunal specimens. The biological samples collected are currently in different stages of identification. A cumulative 106,663 biological samples have been processed, including 39 Megafaunal, 16,296 macrofaunal and 1,110 sponge and 94,417 meiofaunal specimens. In 2023-24, the NUS benthic team mainly focused on the processing and study of 3,778 biological samples, which includes 1,097 Copepods, ~661 Polychaetes &amp; Isopods, 800 Sponges and 1,220 Tanaids. To date, eight articles involving at least one Singapore-based author have been published, including six peer-reviewed articles, one conference abstract, and one workshop report.</p>
---------------------------	--	---

## Training Programme

Schedule 3 of Annex III of the Regulations.

### I. Training Program

OMS recognizes that training is a critical component of capability building for developing States. OMS made significant efforts to provide various training opportunities.

In 2018, OMS offered ten funded three-month internships for candidates from developing States, in partnership with NUS, scheduled between April and October 2019. Due to limited qualified applicants, the program was re-advertised and postponed to March-May 2020. However, it was ultimately canceled because of candidate withdrawals, visa delays, and COVID-19 travel restrictions

In 2021, OMS offered a three-month virtual internship to enhance ML-based modeling of nodule distribution using advanced ANN techniques. However, low applicant interest led the LTC to recommend re-formulating the program

In 2022, OMS offered four full-time, one-year MSc training positions at NUS, including a two-month internship. The LTC selected eight candidates (four primary and four reserves), and OMS shared relevant application and program details with them. Of the five who applied to NUS, four were ultimately not accepted, and one did not respond. The same was informed to the ISA training office in June 2024. It is important to note that OMS has no control over NUS selection process, since NUS has their own selection criteria which considers variety of things. As part of its commitment, OMS is working with ISA to reimburse the SGD 109 application fees to these applicants.

Despite significant efforts to explore multiple training routes, no training could be delivered to date; however, OMS submitted a new training plan to ISA in October 2024, which is currently under review.

In addition to the above, two NUS scientists, Deep-sea team members Chim Chee Kong (CCK) and Lim Swee Cheng (LSC) who participated in OMS expeditions and conducted research have successfully submitted their PhD theses, and have successfully defended their PhD theses in 2023 based on abyssal tanaid and sponge material from the OMS and UK-1 exploration areas of the Clarion-Clipperton Fracture Zone (CCFZ) and have since been awarded their doctoral degrees from the National University of Singapore (NUS). This marks a significant achievement of OMS's commitment of providing opportunities and in the development of Singapore's deep sea biological expertise. OMS has been collaborating with NUS scientists since its first exploration expedition, providing opportunities for all scientists to conduct research in deep sea environments, as well as to expand their capability in organizing and planning expeditions. OMS look forward to continuing working with NUS to shape the EIA of the deep seabed in designated areas of the CCZ assigned to OMS.

### II. Trainings conducted up to reported year [10]: [2024]

None

### III. Completed Trainings per Year

None

## 5. Standard clauses

### STANDARD CLAUSES FOR EXPLORATION CONTRACT

#### Section 1

##### Definitions

1.1 In the following clauses:

- (a) "Exploration area" means that part of the Area allocated to the Contractor for exploration, described in schedule 1 hereto, as the same may be reduced from time to time in accordance with this contract and the Regulations;
- (b) "Programme of activities" means the programme of activities which is set out in schedule 2 hereto as the same may be adjusted from time to time in accordance with sections 4.3 and 4.4 hereof;
- (c) "Regulations" means the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area, adopted by the Authority.

1.2 Terms and phrases defined in the Regulations shall have the same meaning in these standard clauses.

1.3 In accordance with the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, its provisions and Part XI of the Convention are to be interpreted and applied together as a single instrument; this contract and references in this contract to the Convention are to be interpreted and applied accordingly.

1.4 This contract includes the schedules to this contract, which shall be an integral part hereof.

#### Section 2

##### Security of Tenure

2.1 The Contractor shall have security of tenure and this contract shall not be suspended, terminated or revised except in accordance with sections 20, 21 and 24 hereof.

2.2 The Contractor shall have the exclusive right to explore for polymetallic nodules in the exploration area in accordance with the terms and conditions of this contract. The Authority shall ensure that no other entity operates in the exploration area for a different category of resources in a manner that might unreasonably interfere with the operations of the Contractor.

2.3 The Contractor, by notice to the Authority, shall have the right at any time to renounce without penalty the whole or part of its rights in the exploration area, provided that the Contractor shall remain liable for all obligations accrued prior to the date of such renunciation in respect of the area renounced.

2.4 Nothing in this contract shall be deemed to confer any right on the Contractor other than those rights expressly granted herein. The Authority reserves the right to enter into contracts with respect to resources other than polymetallic nodules with third parties in the area covered by this contract.



**Section 3  
Contract Term**

3.1 This contract shall enter into force on signature by both parties and shall remain in force for a period of fifteen years thereafter unless:

- (a) The Contractor obtains a contract for exploitation in the exploration area which enters into force before the expiration of such period of fifteen years; or
- (b) The contract is sooner terminated, provided that the term of the contract may be extended in accordance with sections 3.2 and 17.2 hereof.

3.2 Upon application by the Contractor, not later than six months before the expiration of this contract, this contract may be extended for periods of not more than five years each on such terms and conditions as the Authority and the Contractor may then agree in accordance with the Regulations. Such extensions shall be approved if the Contractor has made efforts in good faith to comply with the requirements of this contract but for reasons beyond the Contractor's control has been unable to complete the necessary preparatory work for proceeding to the exploitation stage or if the prevailing economic circumstances do not justify proceeding to the exploitation stage.

3.3 Notwithstanding the expiration of this contract in accordance with section 3.1 hereof, if the Contractor has, at least 90 days prior to the date of expiration, applied for a contract for exploitation, the Contractor's rights and obligations under this contract shall continue until such time as the application has been considered and a contract for exploitation has been issued or refused.

**Section 4  
Exploration**

4.1 The Contractor shall commence exploration in accordance with the time schedule stipulated in the programme of activities set out in schedule 2 hereto and shall adhere to such time periods or any modification thereto as provided for by this contract.

4.2 The Contractor shall carry out the programme of activities set out in schedule 2 hereto. In carrying out such activities the Contractor shall spend in each contract year not less than the amount specified in such programme, or any agreed review thereof, in actual and direct exploration expenditures.

4.3 The Contractor, with the consent of the Authority, which consent shall not be unreasonably withheld, may from time to time make such changes in the programme of activities and the expenditures specified therein as may be necessary and prudent in accordance with good mining industry practice, and taking into account the market conditions for the metals contained in polymetallic nodules and other relevant global economic conditions.

4.4 Not later than 90 days prior to the expiration of each five-year period from the date on which this contract enters into force in accordance with section 3 hereof, the Contractor and the Secretary-General shall jointly undertake a review of the implementation of the plan of work for exploration under this contract. The Secretary-General may require the Contractor to submit such additional data and information as may be necessary for the purposes of the review. In the light of the review, the Contractor shall make such adjustments to its plan of work as are necessary and shall indicate its programme of activities for the following five-year period, including a revised schedule of anticipated yearly expenditures. Schedule 2 hereto shall be adjusted accordingly.

**Section 5  
Environmental Monitoring**

5.1 The Contractor shall take necessary measures to prevent, reduce and control pollution and other hazards to the marine environment arising from its activities in the Area as far as reasonably possible applying a precautionary approach and best environmental practices.

5.2 Prior to the commencement of exploration activities, the Contractor shall submit to the Authority:

- (a) An impact assessment of the potential effects on the marine environment of the proposed activities;
- (b) A proposal for a monitoring programme to determine the potential effect on the marine environment of the proposed activities; and
- (c) Data that could be used to establish an environmental baseline against which to assess the effect of the proposed activities.

5.3 The Contractor shall, in accordance with the Regulations, gather environmental baseline data as exploration activities progress and develop and shall establish environmental baselines against which to assess the likely effects of the Contractor's activities on the marine environment.

5.4 The Contractor shall, in accordance with the Regulations, establish and carry out a programme to monitor and report on such effects on the marine environment. The Contractor shall cooperate with the Authority in the implementation of such monitoring.

5.5 The Contractor shall, within 90 days of the end of each calendar year, report to the Secretary-General on the implementation and results of the monitoring programme referred to in section 5.4 hereof and shall submit data and information in accordance with the Regulations.

## **Section 6**

### **Contingency Plans And Emergencies**

6.1 The Contractor shall, prior to the commencement of its programme of activities under this contract, submit to the Secretary-General a contingency plan to respond effectively to incidents that are likely to cause serious harm or a threat of serious harm to the marine environment arising from the Contractor's activities at sea in the exploration area. Such contingency plan shall establish special procedures and provide for adequate and appropriate equipment to deal with such incidents and, in particular, shall include arrangements for:

- (a) The immediate raising of a general alarm in the area of the exploration activities;
- (b) Immediate notification to the Secretary-General;
- (c) The warning of ships which might be about to enter the immediate vicinity;
- (d) A continuing flow of full information to the Secretary-General relating to particulars of the contingency measures already taken and further actions required;
- (e) The removal, as appropriate, of polluting substances;
- (f) The reduction and, so far as reasonably possible, prevention of serious harm to the marine environment, as well as mitigation of such effects;
- (g) As appropriate, cooperation with other contractors with the Authority to respond to an emergency; and
- (h) Periodic emergency response exercises.

6.2 The Contractor shall promptly report to the Secretary-General any incident arising from its activities that has caused, is causing or poses a threat of serious harm to the marine environment. Each such report shall contain the details of such incident, including, inter alia:

- (a) The coordinates of the area affected or which can reasonably be anticipated to be affected;
- (b) The description of the action being taken by the Contractor to prevent, contain, minimize and repair the serious harm or threat of serious harm to the marine environment;
- (c) A description of the action being taken by the Contractor to monitor the effects of the incident on the marine environment; and
- (d) Such supplementary information as may reasonably be required by the Secretary-General.

6.3 The Contractor shall comply with emergency orders issued by the Council and immediate measures of a temporary nature issued by the Secretary-General in accordance with the Regulations, to prevent, contain, minimize or repair serious harm or the threat of serious harm to the marine environment, which may include orders to the Contractor to immediately suspend or adjust any activities in the exploration area.

6.4 If the Contractor does not promptly comply with such emergency orders or immediate measures of a temporary nature, the Council may take such reasonable measures as are necessary to prevent, contain, minimize or repair any such serious harm or the threat of serious harm to the marine environment at the Contractor's expense. The Contractor shall promptly reimburse the Authority the amount of such expenses. Such expenses shall be in addition to any monetary penalties which may be imposed on the Contractor pursuant to the terms of this contract or the Regulations.

## **Section 7**

### **Human Remains And Objects And Sites Of An Archaeological Or Historical Nature**

The Contractor shall immediately notify the Secretary-General in writing of any finding in the exploration area of any human remains of an archaeological or historical nature, or any object or site of a similar nature and its location, including the preservation and protection measures taken. The Secretary-General shall transmit such information to the Director General of the United Nations Educational, Scientific and Cultural Organization and any other competent international organization. Following the finding of any such human remains, object or site in the exploration area, and in order to avoid disturbing such human remains, object or site, no further prospecting or exploration shall take place, within a reasonable radius, until such time as the Council decides otherwise after taking account of the views of the Director General of the United Nations Educational, Scientific and Cultural Organization or any other competent international organization.

## **Section 8**

### **Training**

8.1 In accordance with the Regulations, the Contractor shall, prior to the commencement of exploration under this contract, submit to the Authority for approval proposed training programmes for the training of personnel of the Authority and developing States, including the participation of such personnel in all of the Contractor's activities under this contract.

8.2 The scope and financing of the training programme shall be subject to negotiation between the Contractor, the Authority and the sponsoring State or States.

8.3 The Contractor shall conduct training programmes in accordance with the specific programme for the training of personnel referred to in section 8.1 hereof approved by the Authority in accordance with the Regulations, which programme, as revised and developed from time to time, shall become a part of this contract as schedule 3.

## **Section 9**

### **Books and records**

The Contractor shall keep a complete and proper set of books, accounts and financial records, consistent with internationally accepted accounting principles. Such books, accounts and financial records shall include information which will fully disclose the actual and direct expenditures for exploration and such other information as will facilitate an effective audit of such expenditures.

## **Section 10**

### **Annual Reports**

10.1 The Contractor shall, within 90 days of the end of each calendar year, submit a report to the Secretary-General in such format as may be recommended from time to time by the Legal and Technical Commission covering its programme of activities in the exploration area and containing, as applicable, information in sufficient detail on:

- (a) The exploration work carried out during the calendar year, including maps, charts and graphs illustrating the work that has been done and the results obtained;
- (b) The equipment used to carry out the exploration work, including the results of tests conducted of proposed mining technologies, but not equipment design data; and
- (c) The implementation of training programmes, including any proposed revisions to or developments of such programmes.

10.2 Such reports shall also contain:

- (a) The results obtained from environmental monitoring programmes, including observations, measurements, evaluations and analyses of environmental parameters;
- (b) A statement of the quantity of polymetallic nodules recovered as samples or for the purpose of testing;
- (c) A statement, in conformity with internationally accepted accounting principles and certified by a duly qualified firm of public accountants, or, where the Contractor is a State or a State enterprise, by the sponsoring State, of the actual and direct exploration expenditures of the Contractor in carrying out the programme of activities during the Contractor's accounting year. Such expenditures may be claimed by the contractor as part of the contractor's development costs incurred prior to the commencement of commercial production; and
- (d) Details of any proposed adjustments to the programme of activities and the reasons for such adjustments.

10.3 The Contractor shall also submit such additional information to supplement the reports referred to in sections 10.1 and 10.2 hereof as the Secretary-General may from time to time reasonably require in order to carry out the Authority's functions under the Convention, the Regulations and this contract.

10.4 The Contractor shall keep, in good condition, a representative portion of samples of the polymetallic nodules obtained in the course of exploration until the expiration of this contract. The Authority may request the Contractor in writing to deliver to it for analysis a portion of any such sample obtained during the course of exploration.

## **Section 11**

### **Data And Information To Be Submitted On Expiration Of The Contract**

11.1 The Contractor shall transfer to the Authority all data and information that are both necessary for and relevant to the effective exercise of the powers and functions of the Authority in respect of the exploration area in accordance with the provisions of this section.

11.2 Upon expiration or termination of this contract the Contractor, if it has not already done so, shall submit the following data and information to the Secretary-General:

- (a) Copies of geological, environmental, geochemical and geophysical data acquired by the Contractor in the course of carrying out the programme of activities that are necessary for and relevant to the effective exercise of the powers and functions of the Authority in respect of the exploration area;
- (b) The estimation of mineable areas, when such areas have been identified, which shall include details of the grade and quantity of the proven, probable and possible polymetallic nodule reserves and the anticipated mining conditions;
- (c) Copies of geological, technical, financial and economic reports made by or for the Contractor that are necessary for and relevant to the effective exercise of the powers and functions of the Authority in respect of the exploration area;
- (d) Information in sufficient detail on the equipment used to carry out the exploration work, including the results of tests conducted of proposed mining technologies, but not equipment design data;
- (e) A statement of the quantity of polymetallic nodules recovered as samples or for the purpose of testing; and
- (f) A statement on how and where samples are archived and their availability to the Authority.

11.3 The data and information referred to in section 11.2 hereof shall also be submitted to the Secretary-General if, prior to the expiration of this contract, the Contractor applies for approval of a plan of work for exploitation or if the Contractor renounces its rights in the exploration area to the extent that such data and information relates to the renounced area.

## **Section 12**

### **Confidentiality**

Data and information transferred to the Authority in accordance with this contract shall be treated as confidential in accordance with the provisions of the Regulations.

## **Section 13**

### **Undertakings**

13.1 The Contractor shall carry out exploration in accordance with the terms and conditions of this contract, the Regulations, Part XI of the Convention, the Agreement and other rules of international law not incompatible with the Convention.

13.2 The Contractor undertakes:

- (a) To accept as enforceable and comply with the terms of this contract;
- (b) To comply with the applicable obligations created by the provisions of the Convention, the rules, regulations and procedures of the Authority and the decisions of the relevant organs of the Authority;
- (c) To accept control by the Authority of activities in the Area as authorized by the Convention;

(d) To fulfil its obligations under this contract in good faith; and

(e) To observe, as far as reasonably practicable, any recommendations which may be issued from time to time by the Legal and Technical Commission.

13.3 The Contractor shall actively carry out the programme of activities:

(a) With due diligence, efficiency and economy;

(b) With due regard to the impact of its activities on the marine environment; and

(c) With reasonable regard for other activities in the marine environment.

13.4 The Authority undertakes to fulfil in good faith its powers and functions under the Convention and the Agreement in accordance with article 157 of the Convention.

## **Section 14**

### **Inspection**

14.1 The Contractor shall permit the Authority to send its inspectors on board vessels and installations used by the Contractor to carry out activities in the exploration area to:

(a) Monitor the Contractor's compliance with the terms and conditions of this contract and the Regulations;  
and

(b) Monitor the effects of such activities on the marine environment.

14.2 The Secretary-General shall give reasonable notice to the Contractor of the projected time and duration of inspections, the name of the inspectors and any activities the inspectors are to perform that are likely to require the availability of special equipment or special assistance from personnel of the Contractor.

14.3 Such inspectors shall have the authority to inspect any vessel or installation, including its log, equipment, records, facilities, all other recorded data and any relevant documents which are necessary to monitor the Contractor's compliance.

14.4 The Contractor, its agents and employees shall assist the inspectors in the performance of their duties and shall:

(a) Accept and facilitate prompt and safe boarding of vessels and installations by inspectors;

(b) Cooperate with and assist in the inspection of any vessel or installation conducted pursuant to these procedures;

(c) Provide access to all relevant equipment, facilities and personnel on vessels and installations at all reasonable times;

(d) Not obstruct, intimidate or interfere with inspectors in the performance of their duties;

(e) Provide reasonable facilities, including, where appropriate, food and accommodation, to inspectors; and

(f) Facilitate safe disembarkation by inspectors.

14.5 Inspectors shall avoid interference with the safe and normal operations on board vessels and installations used by the Contractor to carry out activities in the area visited and shall act in accordance with the Regulations and the measures adopted to protect confidentiality of data and information.

14.6 The Secretary-General and any duly authorized representatives of the Secretary-General, shall have access, for purposes of audit and examination, to any books, documents, papers and records of the Contractor which are necessary and directly pertinent to verify the expenditures referred to in section 10.2 (c).

14.7 The Secretary-General shall provide relevant information contained in the reports of inspectors to the Contractor and its sponsoring State or States where action is necessary.

14.8 If for any reason the Contractor does not pursue exploration and does not request a contract for exploitation, it shall, before withdrawing from the exploration area, notify the Secretary-General in writing in order to permit the Authority, if it so decides, to carry out an inspection pursuant to this section.

## **Section 15**

### **Safety, Labour And Health Standards**

15.1 The Contractor shall comply with the generally accepted international rules and standards established by competent international organizations or general diplomatic conferences concerning the safety of life at sea, and the prevention of collisions and such rules, regulations and procedures as may be adopted by the Authority relating to safety at sea. Each vessel used for carrying out activities in the Area shall possess current valid certificates required by and issued pursuant to such international rules and standards.

15.2 The Contractor shall, in carrying out exploration under this contract, observe and comply with such rules, regulations and procedures as may be adopted by the Authority relating to protection against discrimination in employment, occupational safety and health, labour relations, social security, employment security and living conditions at the work site. Such rules, regulations and procedures shall take into account conventions and recommendations of the International Labour Organization and other competent international organizations.

## **Section 16**

### **Responsibility And Liability**

16.1 The Contractor shall be liable for the actual amount of any damage, including damage to the marine environment, arising out of its wrongful acts or omissions, and those of its employees, subcontractors, agents and all persons engaged in working or acting for them in the conduct of its operations under this contract, including the costs of reasonable measures to prevent or limit damage to the marine environment, account being taken of any contributory acts or omissions by the Authority.

16.2 The Contractor shall indemnify the Authority, its employees, subcontractors and agents against all claims and liabilities of any third party arising out of any wrongful acts or omissions of the Contractor and its employees, agents and subcontractors, and all persons engaged in working or acting for them in the conduct of its operations under this contract.

16.3 The Authority shall be liable for the actual amount of any damage to the Contractor arising out of its wrongful acts in the exercise of its powers and functions, including violations under article 168 (2) of the Convention, account being taken of contributory acts or omissions by the Contractor, its employees, agents and subcontractors, and all persons engaged in working or acting for them in the conduct of its operations under this contract.

16.4 The Authority shall indemnify the Contractor, its employees, subcontractors, agents and all persons engaged in working or acting for them in the conduct of its operations under this contract, against all claims and liabilities of any third party arising out of any wrongful acts or omissions in the exercise of its powers and functions hereunder, including violations under article 168 (2) of the Convention.

16.5 The Contractor shall maintain appropriate insurance policies with internationally recognized carriers, in accordance with generally accepted international maritime practice.

## **Section 17**

### **Force majeure**

17.1 The Contractor shall not be liable for an unavoidable delay or failure to perform any of its obligations under this contract due to force majeure. For the purposes of this contract, force majeure shall mean an event or condition that the Contractor could not reasonably be expected to prevent or control; provided that the event or condition was not caused by negligence or by a failure to observe good mining industry practice.

17.2 The Contractor shall, upon request, be granted a time extension equal to the period by which performance was delayed hereunder by force majeure and the term of this contract shall be extended accordingly.

17.3 In the event of force majeure, the Contractor shall take all reasonable measures to remove its inability to perform and comply with the terms and conditions of this contract with a minimum of delay.

17.4 The Contractor shall give notice to the Authority of the occurrence of an event of force majeure as soon as reasonably possible, and similarly give notice to the Authority of the restoration of normal conditions.

## **Section 18**

### **Disclaimer**

Neither the Contractor nor any affiliated company or subcontractor shall in any manner claim or suggest, whether expressly or by implication, that the Authority or any official thereof has, or has expressed, any opinion with respect to polymetallic nodules in the exploration area and a statement to that effect shall not be included in or endorsed on any prospectus, notice, circular, advertisement, press release or similar document issued by the Contractor, any affiliated company or any subcontractor that refers directly or indirectly to this contract. For the purposes of this section, an "affiliated company" means any person, firm or company or State-owned entity controlling, controlled by, or under common control with, the Contractor.

## **Section 19**

### **Renunciation of Rights**

The Contractor, by notice to the Authority, shall have the right to renounce its rights and terminate this contract without penalty, provided that the Contractor shall remain liable for all obligations accrued prior to the date of such renunciation and those obligations required to be fulfilled after termination in accordance with the Regulations.

## **Section 20**

### **Termination of Sponsorship**

20.1 If the nationality or control of the Contractor changes or the Contractor's sponsoring State, as defined in the Regulations, terminates its sponsorship, the Contractor shall promptly notify the Authority forthwith.

20.2 In either such event, if the Contractor does not obtain another sponsor meeting the requirements prescribed in the Regulations which submits to the Authority a certificate of sponsorship for the Contractor in the prescribed form within the time specified in the Regulations, this contract shall terminate forthwith.

## **Section 21**

### **Suspension and Termination Of Contract And Penalties**

21.1 The Council may suspend or terminate this contract, without prejudice to any other rights that the Authority may have, if any of the following events should occur:



- (a) If, in spite of written warnings by the Authority, the Contractor has conducted its activities in such a way as to result in serious persistent and wilful violations of the fundamental terms of this contract, Part XI of the Convention, the Agreement and the rules, regulations and procedures of the Authority; or
- (b) If the Contractor has failed to comply with a final binding decision of the dispute settlement body applicable to it; or
- (c) If the Contractor becomes insolvent or commits an act of bankruptcy or enters into any agreement for composition with its creditors or goes into liquidation or receivership, whether compulsory or voluntary, or petitions or applies to any tribunal for the appointment of a receiver or a trustee or receiver for itself or commences any proceedings relating to itself under any bankruptcy, insolvency or readjustment of debt law, whether now or hereafter in effect, other than for the purpose of reconstruction.

21.2 The Council may, without prejudice to section 17, after consultation with the Contractor, suspend or terminate this contract, without prejudice to any other rights that the Authority may have, if the Contractor is prevented from performing its obligations under this contract by reason of an event or condition of force majeure, as described in section 17.1, which has persisted for a continuous period exceeding two years, despite the Contractor having taken all reasonable measures to overcome its inability to perform and comply with the terms and conditions of this contract with minimum delay.

21.3 Any suspension or termination shall be by notice, through the Secretary-General, which shall include a statement of the reasons for taking such action. The suspension or termination shall be effective 60 days after such notice, unless the Contractor within such period disputes the Authority's right to suspend or terminate this contract in accordance with Part XI, section 5, of the Convention.

21.4 If the Contractor takes such action, this contract shall only be suspended or terminated in accordance with a final binding decision in accordance with Part XI, section 5, of the Convention

21.5 If the Council has suspended this contract, the Council may by notice require the Contractor to resume its operations and comply with the terms and conditions of this contract, not later than 60 days after such notice.

21.6 In the case of any violation of this contract not covered by section 21.1 (a) hereof, or in lieu of suspension or termination under section 21.1 hereof, the Council may impose upon the Contractor monetary penalties proportionate to the seriousness of the violation.

21.7 The Council may not execute a decision involving monetary penalties until the Contractor has been accorded a reasonable opportunity to exhaust the judicial remedies available to it pursuant to Part XI, section 5, of the Convention.

21.8 In the event of termination or expiration of this contract, the Contractor shall comply with the Regulations and shall remove all installations, plant, equipment and materials in the exploration area and shall make the area safe so as not to constitute a danger to persons, shipping or to the marine environment.

## **Section 22**

### **Transfer of Rights And Obligations**

22.1 The rights and obligations of the Contractor under this contract may be transferred in whole or in part only with the consent of the Authority and in accordance with the Regulations.

22.2 The Authority shall not unreasonably withhold consent to the transfer if the proposed transferee is in all respects a qualified applicant in accordance with the Regulations and assumes all of the obligations of the Contractor and if the transfer does not confer to the transferee a plan of work, the approval of which would be forbidden by article 6, paragraph 3 (c), of annex III to the Convention.

22.3 The terms, undertakings and conditions of this contract shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

### **Section 23**

#### **No Waiver**

No waiver by either party of any rights pursuant to a breach of the terms and conditions of this contract to be performed by the other party shall be construed as a waiver by the party of any succeeding breach of the same or any other term or condition to be performed by the other party.

### **Section 24**

#### **Revision**

24.1 When circumstances have arisen or are likely to arise which, in the opinion of the Authority or the Contractor, would render this contract inequitable or make it impracticable or impossible to achieve the objectives set out in this contract or in Part XI of the Convention or the Agreement, the parties shall enter into negotiations to revise it accordingly.

24.2 This contract may also be revised by agreement between the Contractor and the Authority to facilitate the application of any rules, regulations and procedures adopted by the Authority subsequent to the entry into force of this contract.

24.3 This contract may be revised, amended or otherwise modified only with the consent of the Contractor and the Authority by an appropriate instrument signed by the authorized representatives of the parties.

### **Section 25**

#### **Disputes**

25.1 Any dispute between the parties concerning the interpretation or application of this contract shall be settled in accordance with Part XI, section 5, of the Convention.

25.2 In accordance with article 21 (2) of Annex III to the Convention, any final decision rendered by a court or tribunal having jurisdiction under the Convention relating to the rights and obligations of the Authority and of the Contractor shall be enforceable in the territory of any State party to the Convention affected thereby.

### **Section 26**

#### **Notice**

26.1 Any application, request, notice, report, consent, approval, waiver, direction or instruction hereunder shall be made by the Secretary-General or by the designated representative of the Contractor, as the case may be, in writing. Service shall be by hand, or by telex, fax, registered airmail or e-mail containing an authorized signature to the Secretary-General at the headquarters of the Authority or to the designated representative. The requirement to provide any information in writing under these Regulations is satisfied by the provision of the information in an e-mail containing a digital signature.

26.2 Either party shall be entitled to change any such address to any other address by not less than ten days' notice to the other party.

26.3 Delivery by hand shall be effective when made. Delivery by telex shall be deemed to be effective on the business day following the day when the "answer back" appears on the sender's telex machine. Delivery by fax shall be effective when the "transmit confirmation report" confirming the transmission to the recipient's published fax number is received by the transmitter. Delivery by registered airmail shall be deemed to be effective 21 days after posting. An e-mail is presumed to have been received by the addressee when it enters an information system designated or used by the addressee for the purpose of receiving documents of the type sent and it is capable of being retrieved and processed by the addressee.

26.4 Notice to the designated representative of the Contractor shall constitute effective notice to the Contractor for all purposes under this contract, and the designated representative shall be the Contractor's agent for the service of process or notification in any proceeding of any court or tribunal having jurisdiction.

26.5 Notice to the Secretary-General shall constitute effective notice to the Authority for all purposes under this contract, and the Secretary-General shall be the Authority's agent for the service of process or notification in any proceeding of any court or tribunal having jurisdiction.

## **Section 27**

### **Applicable law**

27.1 This contract shall be governed by the terms of this contract, the rules, regulations and procedures of the Authority, Part XI of the Convention, the Agreement and other rules of international law not incompatible with the Convention.

27.2 The Contractor, its employees, subcontractors, agents and all persons engaged in working or acting for them in the conduct of its operations under this contract shall observe the applicable law referred to in section 27.1 hereof and shall not engage in any transaction, directly or indirectly, prohibited by the applicable law.

27.3 Nothing contained in this contract shall be deemed an exemption from the necessity of applying for and obtaining any permit or authority that may be required for any activities under this contract.

## **Section 28**

### **Interpretation**

The division of this contract into sections and subsections and the insertion of headings are for convenience of reference only and shall not affect the construction or interpretation hereof.

## **Section 29**

### **Additional documents**

Each party hereto agrees to execute and deliver all such further instruments, and to do and perform all such further acts and things as may be necessary or expedient to give effect to the provisions of this contract.