I. ANNEX

ISA Contract for Exploration – Public Information Template for UK2

UK Seabed Resources	Type of resource: PMN
	Name of Contractor: UK Seabed Resources
	Contract Start: 29 March 2016
Sponsoring State: UK	Contract End: 28 March 2031
	Location: CCZ

Contents

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").

UK Seabed Resources operates two exploration contracts in the CCZ. The content of this template contains contractual information for UK2 in order to enable the public to better understand the scope of activity.

1. Contract Information

Annex III of the Regulations.

Type of resource	Polymetallic Nodules
Name of Contractor	UK Seabed Resources
Contract Start	29 March 2016
Contract End	28 March 2031
Location	Clarion Clipperton Zone
Contract Area (km^2)	74,919 (UK2)

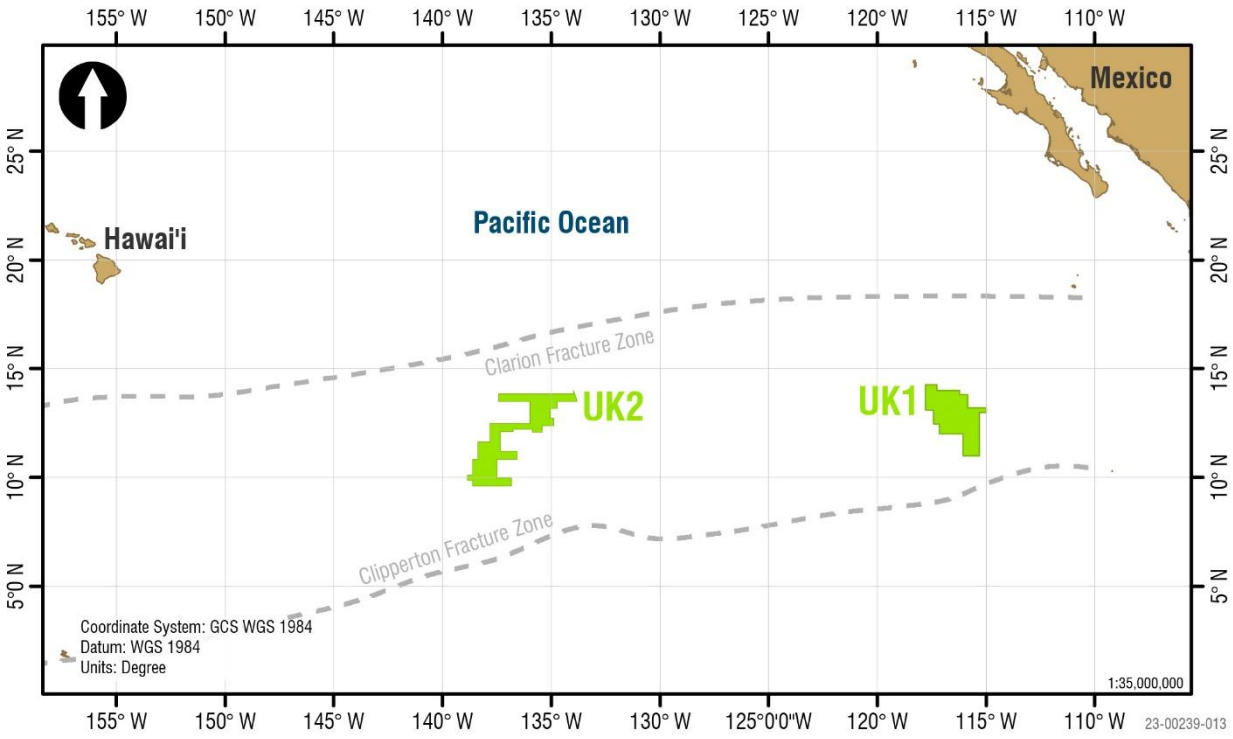
2. Coordinates and Illustrative Chart of the Exploration Area

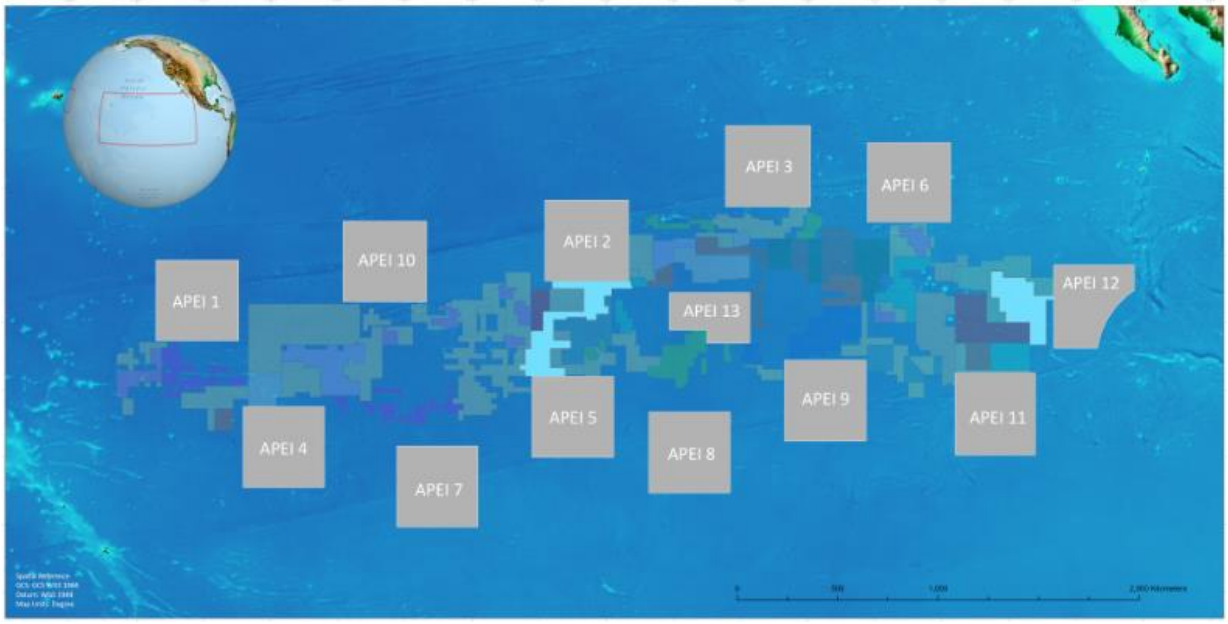
Schedule 1 of Annex III of the Regulations.

Geographic Coordinates (WGS84) Defining UK2 Contract Area - (9.875N, 138.75W & 14N, 133.83W)

Turning point	Latitude North	Longitude West
1	14.00000	-134.00000
2	13.58010	-133.83300
3	13.50000	-133.83300
4	13.50000	-134.75000
5	13.18000	-134.75000
6	13.18000	-135.07000
7	12.73000	-135.07000
8	12.73000	-134.89000
9	12.37000	-134.89000
10	12.37000	-135.44000
11	12.10000	-135.44000
12	12.10000	-135.89000
13	12.23000	-135.89000
14	12.23000	-136.77000
15	12.12500	-136.77000
16	12.12500	-137.34600
17	11.20000	-137.34600
18	11.20000	-136.58000
19	10.83330	-136.58000
20	10.83330	-137.50000
21	9.98330	-137.50000
22	9.98330	-136.83300
23	9.61000	-136.83300
24	9.61000	-138.62500
25	9.87500	-138.62500
26	9.87500	-138.87500
27	10.12500	-138.87500
28	10.12500	-138.62500
29	10.83330	-138.62500
30	10.83330	-138.37400
31	11.63330	-138.37400
32	11.63330	-137.83330
33	12.50000	-137.83330
34	12.50000	-136.00000
35	13.50000	-136.00000
36	13.50000	-137.42000
37	13.84000	-137.42000
38	13.84000	-134.00000

Illustrative Chart of Exploration Areas UK1 and UK2





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).

First 5-Year Plan of Work
This schematic summarises the first 5-year Plan of Work for Exploration for UK2. Due to the then integrated nature of the UKSR exploration programme there was no UK2 exclusive engineering, processing, or environmental monitoring strategy in this 5-year period.

UKSR's approach has historically been to build a detailed resource and environmental picture for UK1 first and use that knowledge to develop a habitat distribution, resource distribution and environmental impact hypothesis for UK2.

From reporting year 2019, the Plans of Work for UK1 and UK2 were formally disaggregated for reporting purposes although the exploration programme itself remained integrated.

	5 Year Plans of Work				
	2016	2017	2018	2019	2020
Expedition					
Planning Workshops	Mobility & Planarization Test	OMCO CCZ film digitisation	-	Expedition planning workshops	Expedition planning workshops
Cruise Equipment Upgrades	Archimedes Scroll design mob. studies. Engineering and fabrication	Mobility & Planarization Test	-	Procurement of survey equipment	-
At Sea Operations	-	-	-	-	RC01-L2
Analysis					
Environmental	-	-	-	-	Sample Analysis
Resource	-	-	-	Bathymetry data assessment	-
Systems Engineering					
Subsea	-	-	Internal reviews of systems architecture	Maturing engineering prototype programme	Engineering schedule and cost model Trade studies and vendor proposals
Processing	-	-	Metallurgical process trade study	-	Cuprion leach process test program

Second 5-Year Plan of Work

During the second (current) 5-year period the Contractor intends to:

- complete the scientific hypothesis for UK2.
- conduct cruise planning workshops in support of independent UK2 exploration cruises.
- complete the Cuprion process optimization project.
- develop an environmental baseline strategy and a sample programme design.
- mature its engineering programme together with technology partner TechnipFMC.
- conduct exploration cruise to deploy moorings.

	5 Year Plan of Work				
	2021	***2022***	***2023***	***2024***	***2025***
Expedition					
Planning Workshops	-	-	Cruise planning workshops	Cruise planning workshops	Cruise planning workshops
Exploration Technology Upgrades	-	-	Digital box corer development	Calibrating image technology	Calibrating image technology
At Sea Operations	-	-	-	-	Mooring deployment.
Analysis					
Environmental	-	-	-	Initiate scientific hypothesis	Complete scientific hypothesis
Resource	-	-	-	-	-
Systems Engineering					
Subsea	Benchmarking legacy designs	Explore & review ongoing front end engineering design studies	Concept Select	Collection Tool & VTS development.	Collection Tool & VTS development
Processing	Cuprion leach process test program	Cuprion process optimization project.	Cuprion process optimization project	Supporting studies on processing technologies and site requirements.	Seeking processing partner.

4. Programme of Activities and Exploration Expenditure

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

I. Agreed 5-year Programme of Activities

5-year Programme of Activities	First	Second	Third	Extension
General Objectives	**Objective**	**Description**		
	Exploration Cruises	Execute mapping of polymetallic nodules. Conduct studies of environmental factors.		
	Environmental Baseline Development	Develop an environmental baseline strategy and a sample programme design.		
	Resource Mapping	Prepare detailed mapping of deposits of polymetallic nodules to inform UK2 resource estimates.		
	System Engineering	Develop and qualify exploration and production technologies.		
	Onshore Processing	Securing processing partner and offtake agreement.		
	Commercial Re-evaluation	Economic analysis and re-assessment of Programme of Activities and related expenditures.		

II. Results achieved during reported years 1- 9: 2016-2024

Due to the then integrated nature of the UKSR exploration programme there was no UK2 exclusive engineering, processing, or environmental monitoring strategy for the first 5-year period.

UKSR's approach has historically been to build a detailed resource and environmental picture for UK1 first, with an aim to use that knowledge to develop a habitat distribution, resource distribution and environmental impact hypothesis for UK2.

Under new management UKSR has, in consultations with OEMMR and CARMU, initiated the development of the scientific hypothesis. Once completed, the hypothesis will inform the upcoming cruise planning process and sample campaign design.

Cruise Planning Workshops leveraged legacy and new environmental and geological data, while incorporating improved sampling equipment and methodology, to optimise the exploration programme beyond that envisaged in the original Plan of Work.

An initial **exploration cruise** designated RC01 Leg 2 (RC01-L2) was accomplished in May 2020. The cruise entailed a multibeam survey providing approximately a 14 km wide average swath along a 1,226 km path. This geophysical survey data will assist in identification of target areas for future environmental baseline survey operations.

Exploration Technology upgrades have been implemented in collaboration with owners and technology partners, to leverage advances in AUV and sensing technologies. New technology solutions were developed and patented in 2023 and 2024.

Systems engineering activities focused on revalidation of legacy engineering solutions, including trade studies and analysis to define updated performance parameters and subsequent systems architecture definition; and technology horizon scanning and supply chain engagement. In 2020-2022 activities focused on advancing mineral processing technologies and studying their feasibility at scale.

Under new management, renewed focus on technology development led to a Concept Select decision in December 2023 for a mechanical nodule collector design.

Commercial re-evaluation remained a constant process although periodic economic analysis and re-evaluation studies were undertaken as planned in 2015, 2019, 2021 and 2022. UKSR was acquired by Loke Marine Minerals in March 2023. Loke has continued to monitor and evaluate commercial conditions aligned with sound commercial principles.

Annual objectives and activities		
Year	**Agreed Objectives**	**Objective: Completed, Modified, Postponed or Replaced**
Years 1 – 2 – 3 **2016 – 2017 – 2018** Due to the then integrated nature of the UKSR exploration programme there was no UK2 exclusive engineering, processing, or environmental monitoring strategy in this 5-year period. From reporting year 2019, the Plans of Work for UK1 and UK2 were formally disaggregated.		
Year 4: 2019	Cruise Planning Workshops	Completed
	Environmental Baseline Studies	No activity
	Survey Cruises	No activity
	Cruise Equipment Upgrades	Completed
	Systems Engineering	Completed
	Commercial re-evaluation	Completed
Year 5: 2020	Cruise Planning Workshops	Completed
	Environmental Baseline Studies	No activity
	Survey Cruises	Partially Completed
	Cruise Equipment Upgrades	Completed
	Systems Engineering	Completed
	Commercial re-evaluation	Completed
Year 6: 2021	Cruise Planning Workshops	No activity
	Environmental Baseline Studies	No activity
	Survey Cruises	No activity
	Cruise Equipment Upgrades	No activity
	Systems Engineering	No activity
	Commercial re-evaluation	Completed
Year 7: 2022	Cruise Planning Workshops	No activity
	Environmental Baseline Studies	No activity
	Survey Cruises	No activity
	Cruise Equipment Upgrades	Completed
	Systems Engineering	No activity
	Commercial re-evaluation	Completed

Year 8:2023	Cruise Planning Workshops	Completed
	Environmental Baseline Studies	No activity
	Survey Cruises	No activity
	Systems Engineering	Completed
	Commercial re-evaluation	Completed
Year 9: 2024	Cruise Planning Workshops	Completed
	Environmental Baseline Studies	Initiated
	Survey Cruises	No activity
	Systems Engineering	Completed
	Commercial re-evaluation	Completed

5. Training Programme

Schedule 3 of Annex III of the Regulations.

I. Training Programme

Type of training	**Rhodes Academy Summer Course**	**Deep Sea Mining Remote Learning Programme**	**At-Sea Training**
Institutions	Rhodes Academy	National Oceanography Centre Innovations	UKSR
Duration	5 Weeks	14 Weeks	50 days
Scope	Ocean Law & Policy	Practitioner perspective on key exploration considerations	Ocean expedition training & execution
Fields	Law	Ecology, Geology, Legal Framework, Survey Planning, Engineering, Sustainability, GIS Modelling	At Sea Experience
Qualification required	Relevant degree	Relevant degree	Relevant degree
Financing	UK2 Fully funded	UKSR Fully funded	UK2 Fully Funded

II. Trainings conducted up to reported year 9: 2024

Start year	End Year	Name of Trainee	Nationality	Gender	Type of Programme	Details	Duration
2019	2019	Juan Galindo Roldan Garlindo	Argentina	M	ISA Approved Summer Programme	Ocean Law & Policy	5 weeks
2019	2020	Wycliff Tupiti	Solomon Islands	M	At Sea Training	Geological Sample collection	50 days
2024	2024	17 ISA trainees	India Philippines Kenya United Republic of Tanzania Ghana Jamaica Bangladesh Pakistan Mauritius Nigeria	4 F & 13 M	Online training	Fundamentals of DSM (NOCi)	23 Jan – 30 April

III. Completed Trainings per Year

	Rhodes Academy Summer Course	At-Sea Training	Deep Sea Mining Remote Learning Programme NOCi
Year 1 2016			
Year 2 2017			
Year 3 2018			
Year 4 2019	**First Student**		
Year 5 2020		**1 Student - 50 days**	
Year 6 2021			
Year 7 2022			**Course Development**
Year 8 2023			**Course Development**
Year 9 2024			**Course Completion 2024**

6. Standard clauses

Annex IV of the Regulations.