Project Summary

Latitude Energy Lot 1 Guyana 3D

To be conducted over

Deep water blocks Guyana

Environmental Protection Agency **Guyana**

Revision History of this Project Summary

Rev No	Effective Date	Description	Prepared by	Reviewed by
01	20 May 2025	First Version	H. Goldsmith A. Sola	

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1 PROJECT SUMMARY

1.1 NON-TECHNICAL EXPLANATION OF THE PROJECT

Latitude Energy is planning to conduct a 3D towed streamer seismic survey offshore Guyana for Lot 1 in response to the Government of Guyana (GOG) request for proposals.

Latitude Energy Inc. is a Guyanese company that serves the Guyana geophysical market. Latitude Energy brings together the international geophysical knowledge and oil industry connections of Future Energy Consultants Ltd (UK-based) with the technology and services expertise and local knowledge and network of Latitude Geospatial in Guyana.

We have the philosophy of making energy deals simple, transparent, and mutually beneficial. Latitude energy in partnership with Shearwater GeoServices will be using the vessel SW Empress or similar to acquire the 3D seismic in Lot 1.

The proposed survey is located in Blocks D1, D2 and D3. The full fold data area for Lot 1 is approximately 11,468km^2 with the larger manoeuvring area for the seismic vessel being approximately 16,860km^2.

The purpose of the Project is to acquire and process, 3D marine seismic data to create a high quality geophysical and geological imaging of the subsurface.

3D marine seismic surveys are used in offshore oil and gas exploration to map out the subsurface geology and derisk drilling projects. The method involves towing an array of cables (streamers) behind the seismic vessel. These streamers contain receivers (hydrophones) that can pick up reflected sound from the sub surface. The vessel tows a sound source that emits a sound wave using compressed air in the water. This sound penetrates the subsurface, reflecting off geological features and being picked up on the streamers. This data that undergoes processing where it can be used to create a 3-dimensional map.

The vessel moves back and forth on adjacent lines, acquiring data in a racetrack fashion. The towed array is typically over 8km long and 1.5km in width floating at ~15m depth. This makes it one of the largest man-made moving objects and as a result has very restrictive manoeuvrability, requiring a specialised team and support vessels for safe and efficient operations. Recognised marine seismic survey providers, such as Shearwater GeoServices, typically have some of the highest environmental and safety standards leading the offshore industry in responsibility and governance. Figures 1.1- 1.3 show these principals.

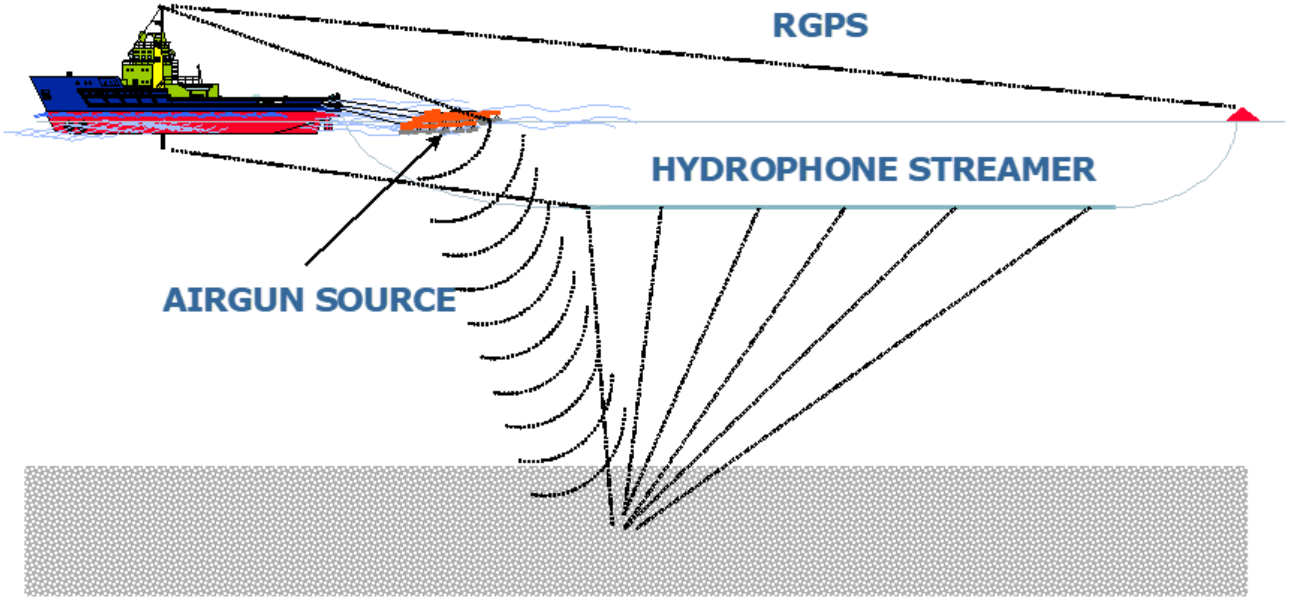


Figure 1.1 Seismic theory showing wave reflection.

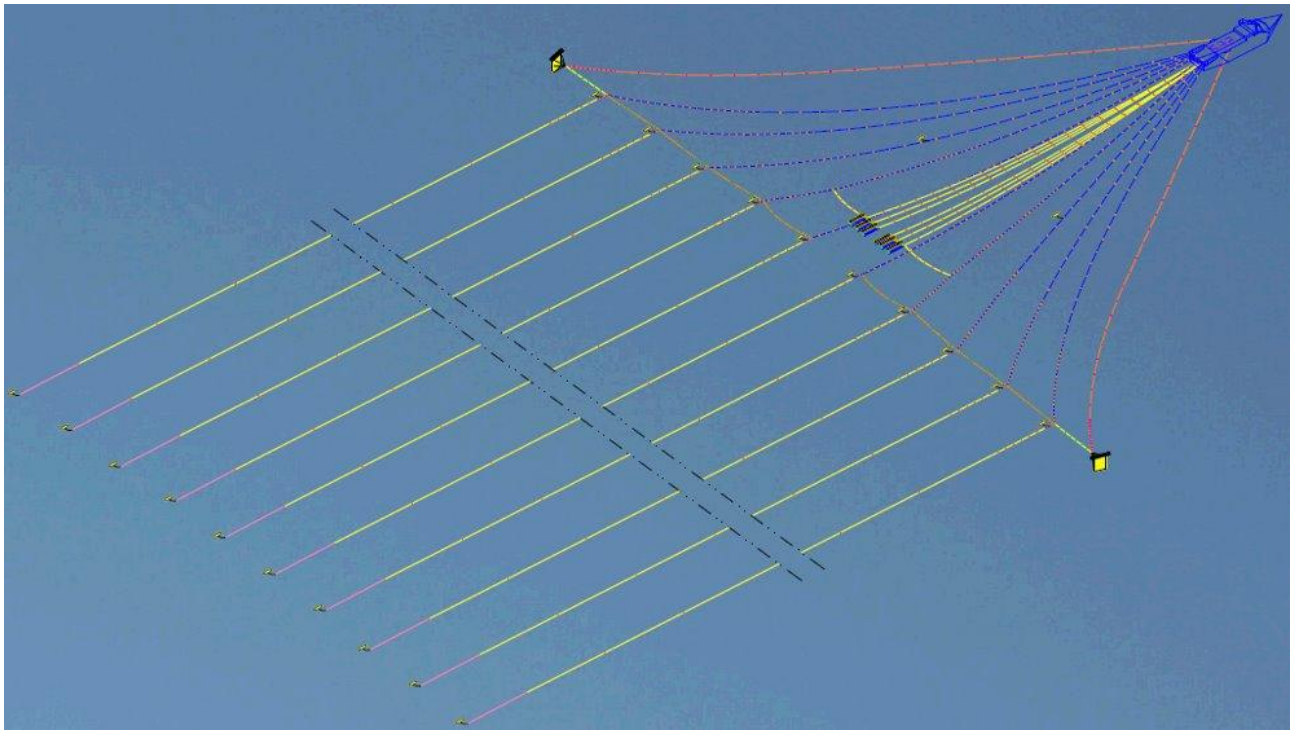


Figure 1.2 Seismic vessel and 10 streamer spread schematic

Figure 1.3 Shearwater's Geo Coral in production.

1.2 DESCRIPTION OF PROJECT SITE (LOCATION)

The survey site is located in the Atlantic Ocean offshore Guyana within the Exclusive Economic Zone, outside the 12 nautical mile Territorial Waters.

The closet point to the shore is approximately is 220km. The maximum 3D seismic activity area is approximately 13,512 km^2 with an overall working area of 16,857 km^2. The area may be reduced dependent on client input and areas of interest. The water depth in the survey area will range from approximately 2,500-3,500m. The area is shown in the below map, figure 1.4

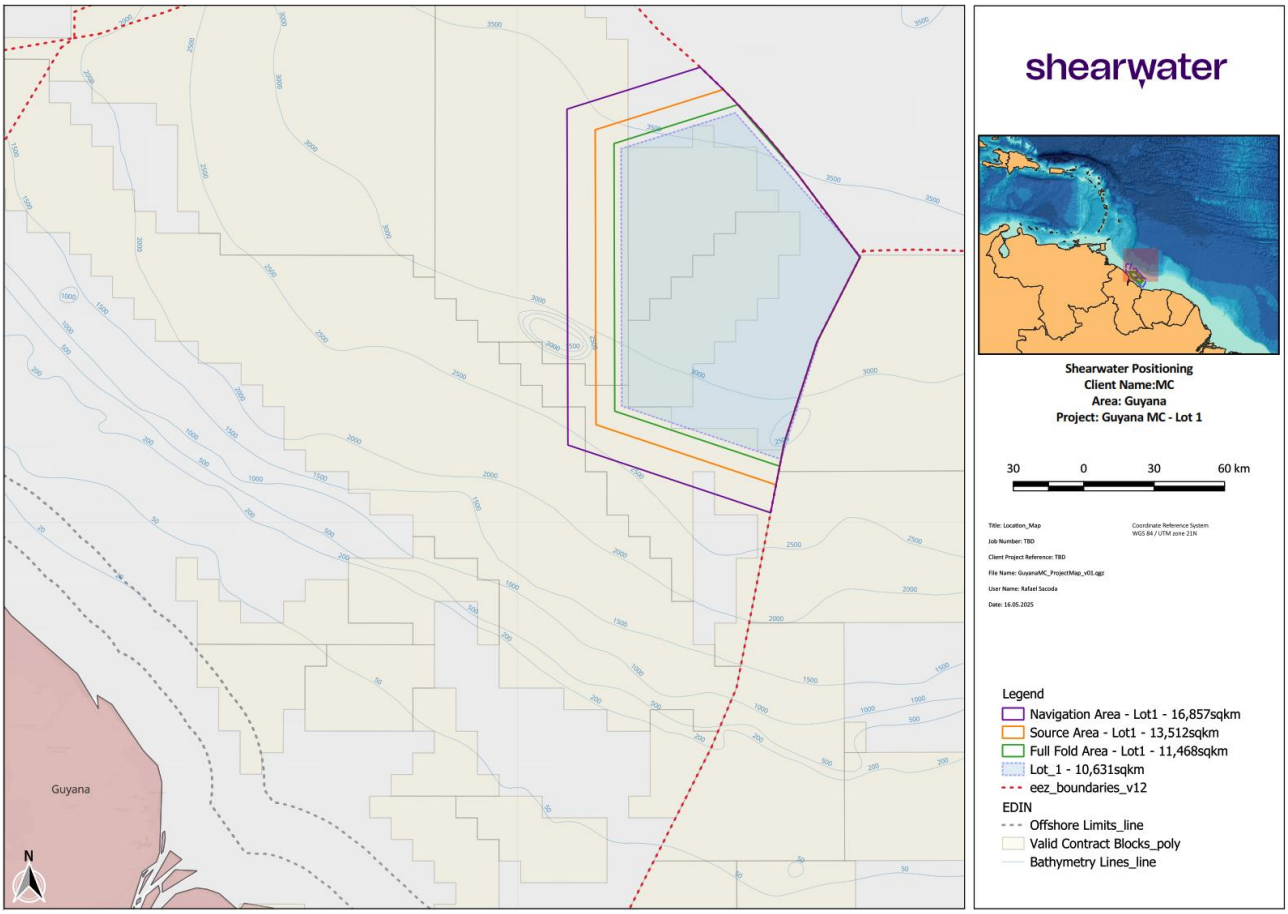


Figure 1.4 Project Areas

1.3 PROJECT DESIGN

The survey is a towed streamer 3D seismic acquisition. This will be utilizing one of Shearwaters high-capacity seismic vessels to tow a spread of, or similar to, 12 cables, 8,000m long with an overall width of 1,650m at of a depth of 20m. In addition, the streamer cables there will be a seismic source that uses compressed air to generate low frequency sound for imaging. See figure 1.1

Accompanying the seismic vessel will be two or more supporting vessels normally consisting of one support/supply vessel and a smaller chase vessel.

1.3.1 Phase 1: Preparatory Phase Activities

The preparation phases include:

- Define survey area, client and subsurface imaging needs.
- Technical seismic survey design.
- Develop project plan (terms of reference) including QHSE and deliverables.
- Conduct an Environmental Impact Assessment where required.
- Obtain licences and permits for the project.
- Assign vessels and equipment to the project and establish local contractors for services.

1.3.2 Phase 2: Operational Phase

The operational phase commences once the project has been sanctioned and involves mobilisation of the vessels to Guyana and the survey area including:

- Establish local agent (including local supplies, services and freight forwarding).
- Mobilise vessels to the survey area, usually via a port call in country, importing vessels.
- Deployment of the in water towed equipment.
- 3D seismic data acquisition.
- Offshore resupply and crew changes, conducted ship to ship by the supply vessel.
    - Including fuel, provisions, equipment and crew changes
- Demobilisation including recovery of all equipment.
- Export of vessels from country
- Data processing on shore.
- Project deliverables finalised.

1.3.3 Source of Water and Power

Potable water will be made via desalination systems on board the larger vessels. Some of the support vessels will require and load potable water in dock during resupply.

Power is generated on board using marine diesel fuel, which will be purchased in Guyana where available. The main seismic vessel will typically take fuel offshore from the supply vessel.

1.3.4 Waste Management

Waste is defined in two main categories, hazardous and non-hazardous

- Non-hazardous solid waste, such as general household-type refuse including food scraps, packaging materials, paper, plastic bags, and containers.
- Hazardous waste, which may consist of items like solvents, thinners, oils, lithium batteries, sludge, and materials contaminated with oil.

All vessels involved will operate in compliance with MARPOL 73/78 Annex V, which mandates the creation and enforcement of a waste management plan.

This plan details procedures for handling waste, including documentation of waste types, quantities, and methods of disposal. In accordance with these regulations, all hazardous waste will be retained on board and later transferred to approved onshore disposal facilities. Disposal of hazardous materials into the ocean is strictly prohibited.

Solid waste generated onboard will be segregated by type, compacted where feasible, and stored safely until the vessel reaches port. Some types of combustible waste may be incinerated on board if allowed by local regulation and in keeping with international maritime law

In line with local and international regulation, food waste may be discharged at sea (beyond 12 nautical miles) after it has been processed and ground down.

Some waste materials are suitable for reuse or recycling, either onboard or upon return to port. These include:

- Used cooking oil

- Paper and cardboard
- Plastic
- Glass
- Metal

A comprehensive waste management plan will be presented as part of any required permitting and within the final Project Plan. Estimated waste volumes for all the vessel involved in the project, along with their intended disposal methods, are provided in Appendix B.

1.3.5 Vessel Discharges into the Marine Environment Responsibilities

Standard effluents are generated by the vessels and are composed of:

- Grey water, sanitary effluent (wash water and laundry discharges);
- Treated black water (treated sewage effluent);
- Drainage water (e.g., bilge water and machinery spaces drainage); and

The vessels will be compliant with MARPOL 73/78. This maritime regulation ensures that grey and black water are treated prior to any discharge.

The regulations state that treated effluent may be discharged at sea when outside of the 12 nautical miles. Where this is not possible the effluent will be contained and sent ashore for processing at appropriate facilities.

Estimated discharge of black and grey water is presented below:

Table 1-1.

Vessel	Persons on board	Estimated daily black water discharge (litres per day)	Estimated daily grey water discharge (litres per day)
Seismic Vessel	68	1,000	12,000

1.4 CAPITAL INVESTMENT IN THE PROJECT

The capital investment to acquire this project over the Lot 1 has a budgetary cost allocated of USD $81,000,000 that will include mobilization and demobilization, acquisition, processing and interpretation of the data as well other costs associated on the Multiclient surveys requested by MNR such a software license, provision of a Virtual Data room, Marketing etc.

1.5 EMPLOYMENT BY THE PROJECT

As a local Guyanese entity, Latitude Energy brings a unique understanding of the country.

Given the nature of the highly specialized work, most of the workforce will be foreign. Some positions may be filled with local workforce if properly trained, such as Marine Mammal Observers (MMOs) or Passive Acoustic Monitoring (PAM) operators.

Where possible Latitude Energy and Shearwater will aim to employ local Guyanese companies in any services required to carry out the project. However, we reserve the right to decide on a case-by-case the technical, safety and commercial competitiveness of any local company to those operating internationally.

We anticipate using local content for:

- Shipping agent in country for Shearwater
- Environmental requirements onboard for MMO/PAM operators
- Fishing Liaison Officer (FLO)
- Doctor/Nurses onboard
- Accommodation during the crew change and for the shore representative during the duration of the survey
- Provisions including fuel for the vessels during the seismic campaign

In addition of the above list, we are committed to making a positive impact on the local community and provide support to several initiatives in country working closely with the regulator.

Workforce estimates for the project:

Vessel	Estimated Personnel
Seismic Vessel	60-70
Supply Vessel	~7
Chasse vessel 1	~5
Chasse vessel 2	~5

1.6 PROJECT DURATION

The 3D seismic acquisition is estimated to take approximately around 5.5 months and is expected to start in Q4 2025 once the granted permit is in place. The duration of the survey can vary depending on the weather conditions and other parameters outside our control.

Once the data has been collected, it will be transferred to a data processing center and processed and interpreted.

Processing deliverables are expected to take approximately:

- **UFT PostSTM:** *5 weeks from delivery of final input data to processing centre* •
- **FT PoSTM**: *8 weeks from delivery of final input data to processing centre*
- **Full Integrity 3D Processing, VMB, K PreSDM:** *11-12 months from delivery of final input data to processing centre Inclusive of: Advanced Broadband Processing, Denoise/Deblending, Shallow/Deep Water Demultiple, FT/Early Out KPreSDM , VMB/FWI, KPreSDM* **,** *Final Imaging*

Interpretation of the data can be done before the final deliverables.

1.7 Potential Effects on the Environment & Mitigation Plans

Below is a brief description of the man impacts the project could have to the surrounding environment.

1.7.1 Air Quality

The largest impact to air quality is from the vessel exhaust fumes. Shearwater is continually monitoring environmental impacts and ways to reduce the vessels impact (ESG initiatives). The main initiative is reducing fuel use on the project. Shearwater actively manages resupply and port call plans to reduce unnecessary trips to and from the survey. Shearwater's vessels have been designed to be fuel efficient and reduce exhaust emissions.

The vessels run on Marine Gas Oil (MGO), which is one of the least polluting marine fuels. Where available low sulphur MGO is used exclusively.

All equipment orders go through a robust process where a local product is preferred. This has helped Shearwater to reduce it carbon impact from international freight.

Exhaust emission from the project will be typical with other marine vessels at sea. Detailed figures of emissions can be provided upon request.

1.7.2 Seawater Quality

There is no anticipated detrimental impact to sea water quality, and international conventions (MARPOL) will be followed to ensure that no potential damaging discharges are made.

1.7.3 Marine Wildlife - Fish, Birds, Turtles and Mammals

Whilst the vessel and equipment do not impose an inherent risk to marine wildlife the sound source is considered potentially disturbing to marine mammals. To mitigate this, the project will adhere to any environmental conditions that are made as part of the Licence. However, Shearwater is truly committed to good stewardship of the seas and will at the least implement internationally recognised JNCC guidelines for marine animal protection. These include having independent (3rd party) Protected Species Observers on board. They will keep a visual watch for marine wildlife and have the authority and responsibility to pause operations when necessary (in line with JNCC guidelines). In addition, Shearwater will have Passive Acoustic Monitoring equipment and operators to detect marine mammals. This allows for detection of animals that are not visually seen (for example at night).

Shearwater is an active participant in the EnerGeo ghost net initiative and removes many tonnes of lost fishing gear and marine debris form the oceans every year.

1.7.4 Physical Presence of Seismic Vessel

The seismic vessel and towed equipment can pose a significant obstacle to other vessels and stake holders. Lot 1 is in deep water and an area of relatively low marine traffic and fishing. Traffic from larger ocean-going vessels is expected to be light to moderate. To mitigate against disruption and risk, a notice to mariners will be made in line with any local regulations. The seismic vessel has a 24hr per day look out and a dedicated navigation team that can arrange safe navigation between vessels with advanced warning. In addition to this the survey will have several additional supporting vessels that are used in a guarding capacity to help warn and direct other vessels of the seismic survey. One of these supporting vessels is usually scouting in front of the survey vessel. This helps mitigate the navigation risks and many layers of mitigation are in place.

1.7.5 Lighting

The lighting on the project will be typical of other vessels at sea. Shearwater does reduce unnecessary lighting where practical to lower environmental impact and disturbances.

1.7.6 Noise

The most significant environment noise is from the intermittent activation of the seismic source.

To mitigate the environmental impact of the source, as defined above, Shearwater utilises the JNCC guidelines as a minimum. This includes shutting down in the presence of protected species and using a slow soft start of the source after any period of inactivity.

There are occupational noise hazards associated with the running of a vessel. These are defined and managed in the vessels hazard register and crew plan.

1.7.7 Marine Navigation

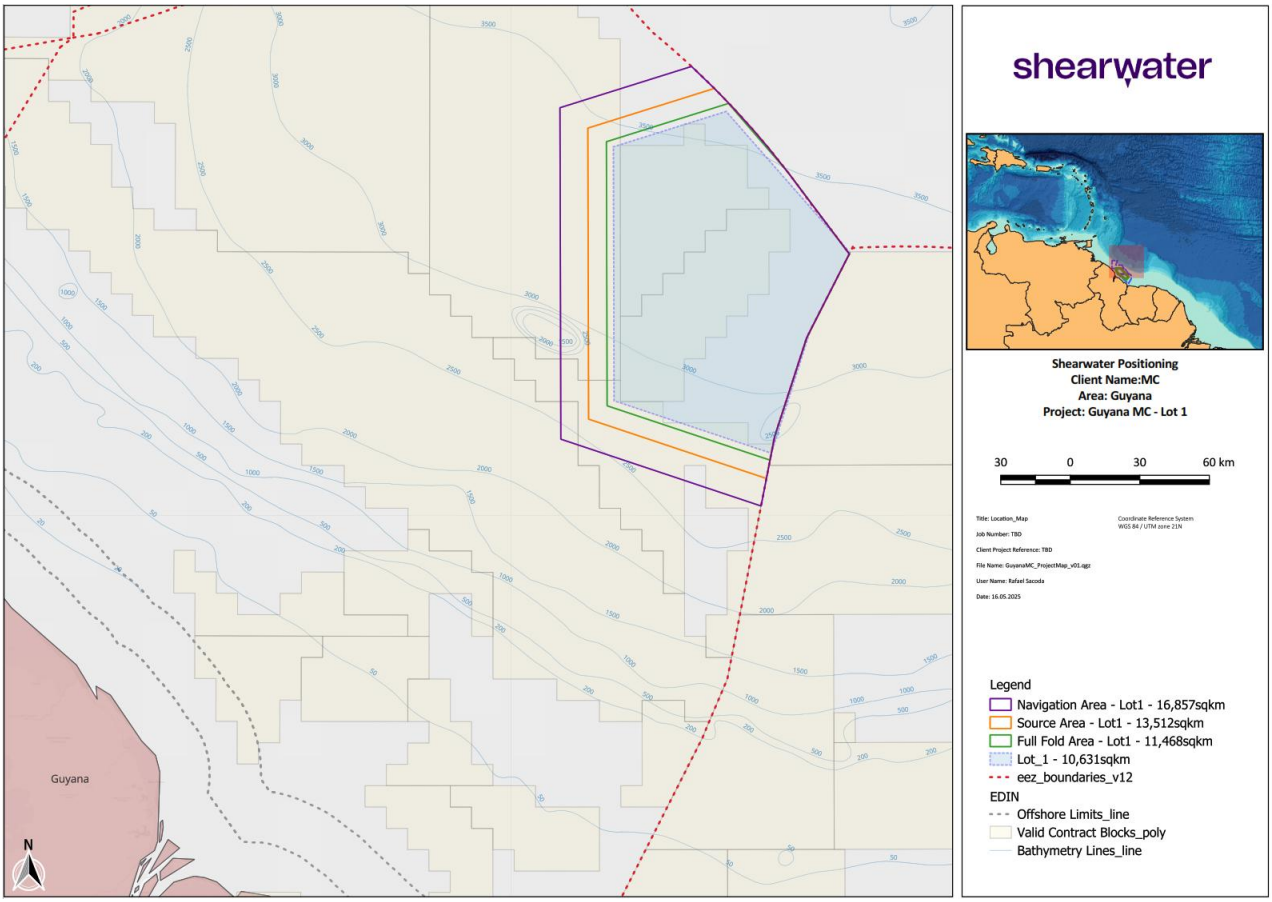
The Project area is located far offshore with relatively low levels of marine traffic and an abundance of manoeuvring space. Impact to marine navigation is expected to be low.

Shearwater vessels operate in strict accordance with international maritime law and the vessels have flag states from top tier providers.

In line with SOLAS (safety of Lives at Sea) conventions, an exclusion zone is established around the seismic vessel and towed equipment. This is monitored and maintained with the help of supporting vessels, mitigating risks to other stake holders.

Appropriate navigation aids and lights are displayed from the seismic vessel and when possible, a notice to mariners is issued via local shore authorities (Port Authority) and directly via the vessel by radio.

APPENDIX A – PROJECT MAP AND COORDINATES



Appendix A map areas

Navigation area, purple – Operational area required by the seismic vessel while surveying.

Source Area, orange – Area where source can be activated. This has a halo margin over the full fold area to allow for soft start and environmental mitigation measures.

Full Fold area, green – This is the area of data coverage, including necessary halo over block boundary for high quality full imaging.

Appendix A Coordinates

Full Fold Area - Lot 1		
Vertice	xcoord	ycoord
0	-55.7673	9.324387
1	-55.9358	8.997618
2	-56.0625	8.612667
3	-56.081	8.520419
4	-56.7193	8.733641
5	-56.7213	9.764659
6	-56.2409	9.913407
7	-56.0081	9.644617
8	-55.7673	9.324387

Source Area - Lot 1		
Vertice	xcoord	ycoord
0	-55.7673	9.324387
1	-55.9358	8.997439
2	-56.0625	8.612667
3	-56.0951	8.448825
4	-56.7919	8.681514
5	-56.7943	9.81779
6	-56.2962	9.972107
7	-56.22	9.893572
8	-56.1435	9.809405
9	-56.0859	9.741883
10	-56.007	9.643154
11	-55.7673	9.324387

Navigation Area - Lot 1		
Vertice	xcoord	ycoord
0	-55.7673	9.324387
1	-55.9358	8.997618
2	-56.0625	8.612667
3	-56.1164	8.341428
4	-56.9008	8.603296
5	-56.904	9.897457
6	-56.3858	10.05811
7	-56.2962	9.972107
8	-56.2746	9.950365
9	-56.22	9.893572
10	-56.1435	9.809405
11	-56.0859	9.741883
12	-56.007	9.643154
13	-55.7673	9.324387

APPENDIX B – ESTIMATED WASTE GENERATION & DISPOSAL METHOD

Estimated waste generated per week for the whole offshore project (all vessels)

Waste Type	Weekly Average (kg)	Disposal Method
Oily Waste	900	Facilities on shore
Food	337	At sea under MARPOL 73/78 Appendix V regulations
Non-recyclable Waste	137	Facilities on shore
Plastic	85	Incinerate/ Facilties on shore
Contaminated Waste	72	Facilities on shore
Wood	60	Incinerate/ Facilities on shore
Paper/Cardboard	50	Incinerate/ Facilities on shore
Metal	35	Facilities on shore
Glass	27	Facilities on shore
Tetra Pak	17	Facilities on shore
Electronics/Cartridges	16	Facilities on shore
Aluminium Cans	11	Facilities on shore
Contaminated Drums	11	Facilities on shore
Cooking Oil	0.37	Facilities on shore
Aerosol	0.21	Facilities on shore