LETTER OF AUTHORIZATION APPLICATION

FOR AMENDMENT WEST 2

BOEM control number: TBD

Requested period of effectiveness:

Start date: March 15th ,2025

End date: December 31st , 2025

A- Type of Survey

Please indicate which type of survey will be used in the proposed activity

_X_ Deep penetration seismic (greater than 1,500cuin total airgun array volume)

- 2D seismic-towed steamer
- 2D seismic-seafloor cable or nodes
- 3D seismic-towed streamer
- 3D seismic-seafloor cable or nodes
- NAZ
- WAZ
- 4D (time lapse)
- Vertical cable
- Borehole seismic (VSP

__ Shallow penetration seismic (less than 1,500cuin total airgun array volume)

- Surface vessel
- Surface vessel and AUV/ROV
- Borehole seismic (VSP)

__ HRG surveys (no airgun used)

- Surface vessel
- AUV/ROV
- Both

__ Other

Describe (if other):

B Survey area and operational plan

Question:	Response:
Location:	Garden Banks, Keathley Canyon, Sigsbee Escarpment

(lease block, facility or prospect name, lat/lon, etc.)	
Overall duration of the activity: (days from mobilization to demobilization):	109 days
Areal extend of the survey area: (in OCS lease blocks or Km² (Attach GIS file of the survey lines and/or survey area perimeter)	~255 OCS blocks – 12,646 Km² Shape file attached separately.
Water depth range:	2,000 - 2,800 m
G&G ITR / PIES modeling zone(s) in which the activity will occur (1-7):	10.7 days in zone 7. 14.5 days in zone 6. 37.8 days in zone 5
Number of days during the overall activity period on which the sound sources listed in section C will operate:	63 days

C Sound sources

List the same sound sources provided in response to question #3 in "Section D Proprietary Information Attachment" to the G&G Permit Application and indicate their Duration of Use.

The source types to be used during this survey will be Gemini 8000 in^3. Gemini airgun arrays will be used for the entire survey and will fire using flip / flap / flop method with up to a 3 second time dither. The source firing sequence will create a 50m x 100 m shot grid. A separation distance of no less than 2000 m will be maintained between each source vessel.

Energy Source	**Manu-facturer**	**Model**	**Total Array Volume & Number of Elements** (cubic inches or Liters.)	**Source Level (SL) in dB re 1µPa@1m in water** (RMS)	**Source Level (SL) in dB re 1µPa@1m in water** (Peak to Peak)	**Operating Frequency** (Hz, kHz, range)	**Pulse Duration** (seconds, milli-seconds)	**Pulse Rate (or Cycle)** (Pulses per second or minute)	**Towing Depth of the Source** (ft or m)	**Towing Depth of the Receiver(s)** (ft or m)	**Duration of Use** (Number of Days or Percent of Active Sound Source Days)
PIES (Pressure Inverted Echo Sounder)	Sonardyne	8302-3116	N/A	190-202 dB	80-120 dB	14-19 kHz	N/A	1 pulse every 10 minutes	Placed on seabed	Placed on seabed	109 days
Extended Frequency Source	TGS	Gemini	8000 in3	~220 dB	~243 dB	0-100 Hz		24 pulse / minute	8 m	OBN receivers on seabed	63 days

D Take estimate Information

The planned 3D OBN survey will involve two source vessels sailing along closely spaced survey sail lines that are approximately 400 m apart and an average sail line length of 72 km. The source vessels will optimize line turns using a “racetrack” or “teardrop” pattern to sail on adjacent or nearby lines 400 m apart while maintaining a separation of >2.0 km between the source vessels. If survey activities occurred throughout the entire survey area of 12646 km2 over the course of 63 days, the average area covered per day would be 200 km2.

E Mitigation and monitoring effort

Question:	Response:
Please indicate which set of monitoring and mitigation measures from the ITR apply to the planned activity:	All monitoring and mitigation measures in the ITRs applicable to Airgun Surveys with a total volume >1,500 in3 (Deep Penetration) will be followed.
Confirm that you will apply this set of monitoring and mitigation measures during the activity:	Yes

F Map of the survey and transit route: