November 26, 2025

Mr. Ben Laws, Deputy Chief,
Office of Protected Resources
National Marine Fisheries Service
National Oceanic and Atmospheric Administration (NOAA)
Dept. of Commerce
1315 East-West Highway
Silver Spring, MD 20910
Via email: benjamin.laws@noaa.gov

SUBJECT: Modification of LOA granted for Permit T24-006

On December 20, 2024, TGS was granted a Letter of Authorization (LOA) to conduct an ultra-long offset OBN seismic survey in the East Breaks area, Gulf of America, under BOEM permit T24-006.

As the survey schedule changed from the original application, a modified LOA was granted on August 19, 2025, extending the LOA validity to April 19, 2026.

Since receiving the modified LOA, the program area has been further modified based on market interest, which has resulted in the need to modify both LOA and permit. Please accept this letter as a formal request for a modification to this LOA.

With the latest modified area, the breakdown in number of days for each zone is estimated as follows: Zone 6 = 139 days, Zone 7 = 0.1 days or total source duration now 139.1 days. Source effort for this project started September 22, 2025.

Should you have any questions regarding this request, please do not hesitate to contact me at +1 713 204 0797 or john.cramer@tgs.com

Best regards,

John E Cramer

John Cramer
Business Development Manager
TGS

LETTER OF AUTHORIZATION APPLICATION

AMENDMENT WEST 1 (Mod-2)

BOEM control number: T24-006

Requested period of effectiveness:

Start date: August 15, 2025

End date: April 20, 2026

A. Type of Survey

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

_X_ Deep penetration seismic (greater than 1,500 cu.in. 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: (lease block, facility or prospect name, lat/lon, etc.)	East Breaks protraction
Overall duration of the activity: (days from mobilization to demobilization):	Est. 240 days
Areal extent of the survey area: (in OCS lease blocks or Km² (Attach GIS file of the survey lines and/or survey area perimeter)	~838 OCS blocks – 19,532 Km² Shape file attached separately.
Water depth range:	600 - 2,000 m
G&G ITR / PIES modeling zone(s) in which the activity will occur (1-7):	139 days in zone 6 0.1 days in zone 7
Number of days during the overall activity period on which the sound sources listed in section C will operate:	139.1 days

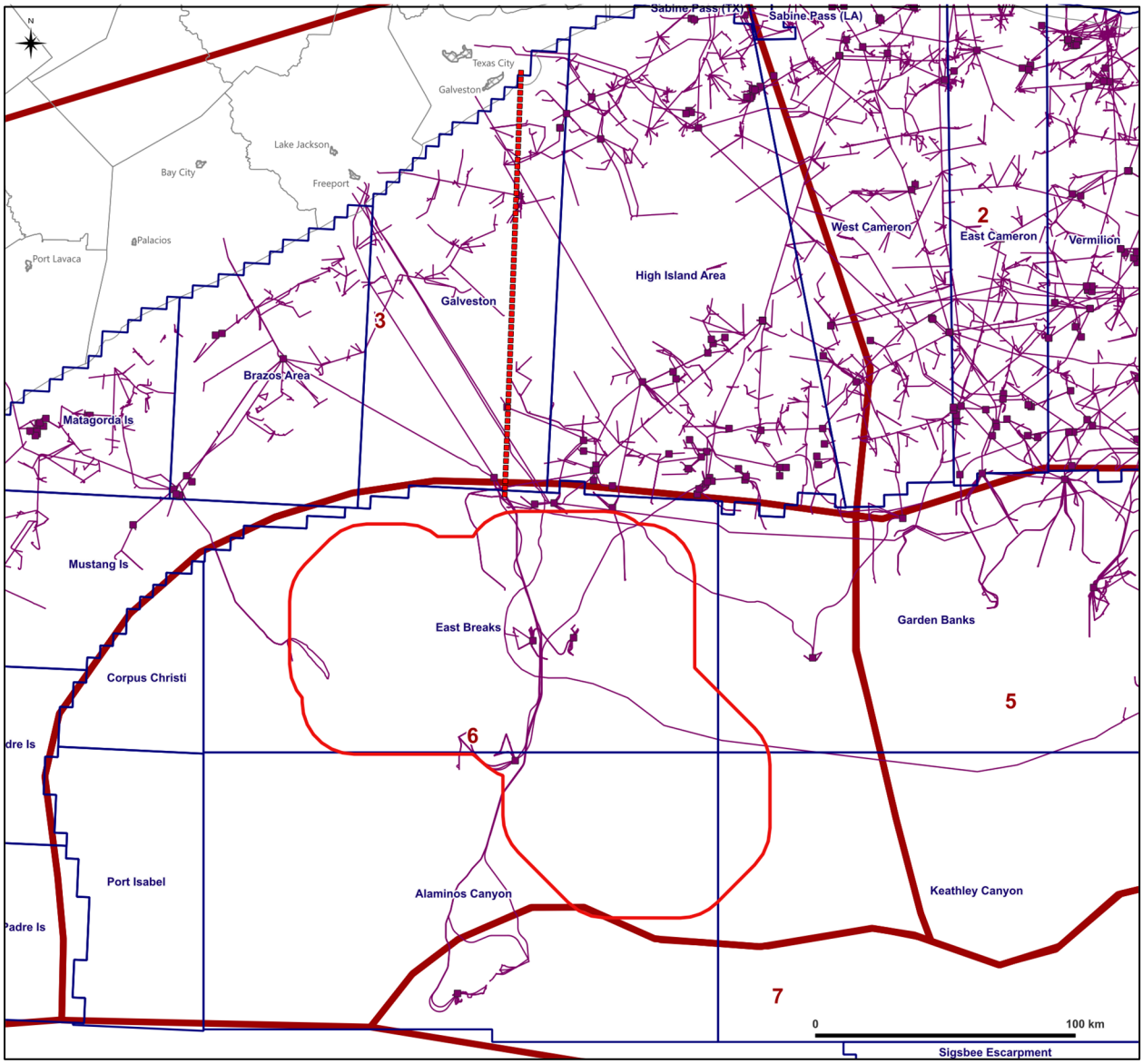
C. Sound sources

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 in³. Gemini airgun arrays will be used for the entire survey and will fire using “flip-flap-flop-flup” method with 2.5 second dithers applied to each source. The source firing sequence will create a 50 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	130 days
Extended Frequency Source	TGS	Gemini	8000 in^3	~220 dB	~243 dB	0-100 Hz		24 pulse / minute	8 m	OBN receivers on seabed	105 days

D. 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

E. Map of the survey and transit route: