

December 3, 2018

Ms. Megan Carr
Regional Supervisor for Resource Evaluation
Bureau of Ocean Energy Management
Alaska OCS Region
3801 Centerpoint Drive Suite #500
Anchorage, Alaska 99503-5823

**RE: TGS-NOPEC Geophysical Company
Barrow Arch 3D Seismic Survey Program
Modification to G&G Permit Application 18-02**

Dear Ms. Carr,

TGS-NOPEC Geophysical Company (TGS) is submitting a modification to permit application 18-02 for our proposed Barrow Arch 3D survey program which is currently under review by the Bureau of Ocean Energy Management Alaska OCS Region office.

The modification to the original application includes a change in the proposed seismic source size from a 620 in³ array to 680 in³ and 1,240 in³ arrays. Based on client feedback and better geophysical modelling of the prospective area, it was determined that a change in source size was necessary to get the best possible seismic imaging of the target zones in the subsurface geology. Details and operational methods on each seismic source array are reflected in the modified Plan of Operations document and BOEM-0327 application forms. Maps were also updated to show the specific areas where each source array will operate.

The enclosed application modification deliverables are listed as below. Should you have any questions regarding this application modification, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Troy Nelson", written in a cursive style.

Troy Nelson
Senior Regulatory and Compliance Specialist
TGS
1-403-781-1448
Troy.Nelson@tgs.com

Cc: Daniel Lasco (Geologist and G&G Permit Coordinator, Alaska Region, BOEM)
Troy Nelson (TGS)
Megan Blees (Owl Ridge Natural Resource Consultants, Inc.)

Enclosures:

- Modified proprietary copy BOEM-0327 form (1 copy)
- Modified public copy BOEM-0327 form (1 copy)
- Modified BOEM-0328 form
- Modified Barrow Arch 3D 2019 maps (Proprietary & Public)
- Modified Plan of Operations (Proprietary and Public)
- Marine Mammal Monitoring & Mitigation Plan (updated)