

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT

Gulf of Mexico OCS Region

(Insert Appropriate Regional Office)

APPLICATION FOR PERMIT TO CONDUCT GEOLOGICAL OR GEOPHYSICAL
EXPLORATION FOR MINERAL RESOURCES OR SCIENTIFIC RESEARCH ON
THE OUTER CONTINENTAL SHELF

(Section 11, Outer Continental Shelf Lands Act of August 7, 1953, as amended on September 18, 1978,
by Public Law 95-372, 92 Statute 629, 43 U.S.C. 1340; and 30 CFR Parts 551 and 251)

WesternGeco LLC

Name of Applicant

10001 Richmond Avenue

Number and Street

Houston, TX 77042

City, State, and Zip Code

Application is made for the following activity: (check one)

Geological exploration for mineral resources

Geological scientific research

Geophysical exploration for mineral resources

Geophysical scientific research

Submit: Original plus three copies, totaling four copies, which include one copy of the original, one digital copy, and one public copy (all with original signatures).

To be completed by BOEM

Permit Number: L22-004

Date: 09-May-2022

A. General Information

1. The activity will be conducted by:

Magseis Fairfield

Service Company Name

9811 Katy Freeway, Suite 1200

Address

Houston, TX 77024

City, State, Zip

(281) 275 7608

Telephone/FAX Numbers

steve.mcintosh@magseisfairfield.com

E-Mail Address

For WesternGeco LLC

Purchaser(s) of the Data

10001 Richmond Avenue

Address

Houston, TX 77042

City, State, Zip

(713) 689 6547

Telephone/FAX Numbers

GPoole@slb.com

E-Mail Address

2. The purpose of the activity is: Mineral exploration
 Scientific research

3. Describe your proposed survey activities (i.e., vessel use, benthic impacts, acoustic sources, etc.) and describe the environmental effects of the proposed activity, including potential adverse effects on marine life. Describe what steps are planned to minimize these adverse effects (mitigation measures). For example: 1) Potential Effect: Excessive sound level Mitigation; Soft Start, Protected Species Observers (PSO's), mammal exclusion zone or 2) Potential Effect: Bottom disturbance; Mitigation: ROV deployment/retrieval of bottom nodes) (use continuation sheets as necessary or provide a separate attachment. Label as **BOEM-0327 Section A General Information.**):
Geophysical survey using Ocean Bottom Nodes. See attachment A-3 for more detailed information.

No adverse effects are expected.

4. The expected commencement date is: August 1, 2022

The expected completion date is: December 31, 2022

5. The name of the individual(s) in charge of the field operation is:
Gary Poole

May be contacted at:

10001 Richmond Avenue, Houston, TX 77042

Telephone (Local) (713) 689 6547 (Marine) (832) 835 8537 (cell)

Email Address: GPoole@slb.com

6. The vessel(s) to be used in the operation is (are):

Vessel Name (s) Vessel Model Registry Number(s) Radio Call Sign(s) Registered Owner(s)

See attachment A-6 for full details

7. The port from which the vessel(s) will operate is: Port Fourchon

8. Briefly describe the navigation system (vessel navigation only):

Navigation is DGPS input to the Integrated Navigation System (INS)

B. Complete for Geological Exploration for Mineral Resources or Geological Scientific Research

1. The type of operation(s) to be employed is: (check one)

a. Deep stratigraphic test, or

b. Shallow stratigraphic test with proposed total depth of _____, or

c. Other _____

2. Attach a page-size plat showing: 1) The generalized proposed location for each test, where appropriate, a polygon enclosing the test sites may be used; 2) BOEM protraction areas, coastline, point of reference, OCS boundary/3-mile limit; 3) Distance and direction from a point of reference to area of Activity; and 4) Label as "**Public Information**".

C. Complete for Geophysical Exploration for Mineral Resources or Geophysical Scientific Research

1. The proposed operation: Seismic Survey

a. Acquisition method (OBN, OBC, Streamer): OBN

b. Type of acquisition: (High Resolution Seismic, 2D Seismic, 3D Seismic, gravity, magnetic, CSEM, etc.)
3D seismic

2. Attach a page-size plat showing:

a. The generalized proposed location of the activity with a representative polygon;

b. BOEM protraction areas, coastline, point of reference, OCS boundary/3-mile limit;

c. Distance and direction from a point of reference to area of activity;

d. Label as "**Public Information**"; and

e. Submit relevant shape files needed to recreate the map as part of the required digital copy.

3. List all energy source types to be used in the operation(s): (Air gun, air gun array(s), sub-bottom profiler, sparker, towed dipole, side scan sonar, etc.).

Air gun arrays

4. Explosive charges will will not be used. If applicable, indicate the type of Explosive and maximum charge size (in pounds) to be used: _____

Type _____ Pounds _____ Equivalent Pounds of TNT _____

D. Proprietary Information Attachments

Use the appropriate form on page 9 for a "geological" permit application or the form on page 11 for a "geophysical" permit application. You must submit a separate Form BOEM-0327 to apply for each geological or geophysical permit.

E. Certification

I hereby certify that foregoing and attached information are true and correct.

Print Name: Gary Poole

SIGNED  DATE May 3rd 2022

TITLE MultiClient Asset Development, WesternGeco

COMPANY NAME: WesternGeco LLC

TO BE COMPLETED BY BOEM

Permit No. L22-004 Assigned by Tanaporn Sakulpitakphon Date 09-May-2022
of BOEM

This application is hereby:

- a. Accepted
- b. Returned for reasons in the attached

SIGNED MATTHEW WILSON Digitally signed by MATTHEW WILSON Date: 2022.05.16 09:49:04 -05'00' TITLE For Regional Supervisor DATE 5/16/22

A. General Information (Attachment A.3)

3. Describe your proposed survey activities (i.e., vessel use, benthic impacts, acoustic sources, etc.) and describe the environmental effects of the proposed activity, including potential adverse effects on marine life Describe what steps are planned to minimize these adverse effects (mitigation measures). For example: 1) Potential Effect; Excessive sound level Mitigation; Soft Start, MMOs, mammal exclusion zone or 2) Potential Effect; Bottom disturbance; Mitigation; ROV deployment/retrieval of bottom nodes) (use continuation sheets as necessary or provide a separate attachment):

The Geophysical Survey proposes to use Ocean Bottom Nodes (OBN) and four vessels. Two of the four vessels will tow three seismic energy sources (as described in Section D – Energy Source). The third vessel will deploy/recover nodes using a dual ROV operation and the fourth will act as a supply/support vessel.

Up to 12 PIES (Pressure Inverted Echo Sounder) units will be utilized also to measure the water velocity through the full water column. The PIES units will be placed on a few of the listed node locations, i.e. co-located with nodes.

1) It is not anticipated that this equipment will have any environmental impact.

The source has been designed to output the minimum amount of acoustic energy in order to achieve the geophysical survey objectives.

Several steps will be taken by the crews as follows to mitigate the effects of the seismic sources:

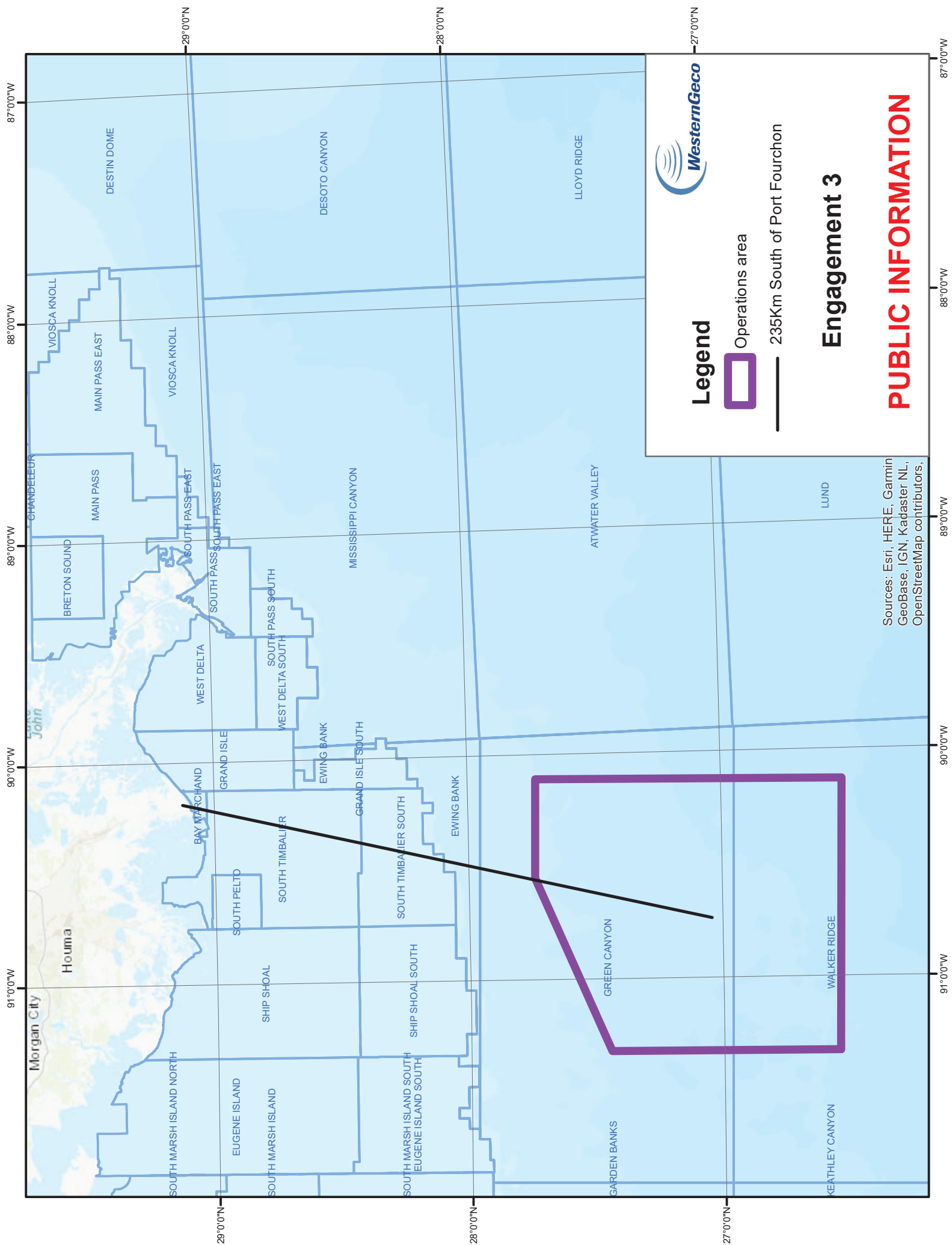
- Use of a PAM system (or equivalent) on all vessels
- Ramp-up/soft-start of the sources
- Application of a mammal exclusion zone for the acoustic energy source
- Use of approved Protected Species Observers

2) Whereas nodes will be placed on the seabed care will be taken to ensure minimum bottom disturbance. Most of the nodes will be placed more than 250 feet away from any of the benthic communities as supplied by BOEM via the Seismic Water Bottom Anomalies Map Database. For all node locations photographs will be taken of each location before deployment and after retrieval. If any active benthic communities are found at a node location the node will not be placed there but will be placed away from the community as close as possible to the permitted location.

A. General Information (Attachment A.6)

6. The vessel(s) to be used in the operation is (are):

Vessel Name	Registered Owner	Registry Number	Radio Call Sign	Vessel Type
Rem Saltire	E. Forland AS	9377016	5BYV4	ROV handler
Artemis Arctic	Maritim Management	9207510	LIZK3	Source
Sanco Spirit	Sanco Holdings	9429936	ZDJN3	Source
Victory G	Rederij Groen BV	9318838	3ECY4	Support



Legend



Operations area

— 235Km South of Port Fourchon

Engagement 3

PUBLIC INFORMATION

Sources: Esri, HERE, Garmin
GeoBase, IGN, Kadaster NL,
OpenStreetMap contributors,

