

PUBLIC

Attachment 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT

New Orleans
(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 251 and 551)

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)

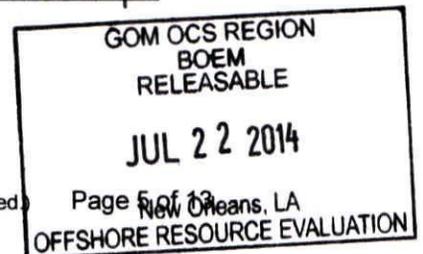
- Geological exploration for mineral resources
- Geological scientific research
- Geophysical exploration for mineral resources
- Geophysical scientific research



Submit: Original plus three copies, totaling four copies, which include one digital copy, and one public information copy.

To be completed by BOEM

Permit Number: E14-004 Date: 09-Apr-2014



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

Name (s)	Registry Number(s)	Registered owners)
_____	_____	_____
<u>See attachment for section A.</u>	_____	_____

7. The port from which the vessel(s) will operate is: Charleston, SC

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

DGPS using
Veripos Ultra and StarFix

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

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

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

- a) Acquisition method (OBN, OBC, Streamer): Streamer
- b) Type of acquisition: (High Resolution Seismic, 2D Seismic, 3D Seismic, gravity, magnetic, CSEM, etc.)
2D Narrow Azimuth, Long Offset 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,
- c) Distance and direction from a point of reference to area of activity.

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 X 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: Jeff Mayville

SIGNED

Jeff Mayville

DATE

3 April 2014

TITLE Marine Manager, Western Hemisphere

COMPANY NAME: WesternGeco LLC

TO BE COMPLETED BY BOEM

Permit No. E14004

Assigned by

Terrie C. Campbell
of BOEM

Date

10-Apr-2014

This application is hereby:

a. Accepted

b. Returned for reasons in the attached

SIGNED

A. J. Lake

TITLE

Regional Supervisor

DATE

4/30/14

A. General Information (Attachment A.3)

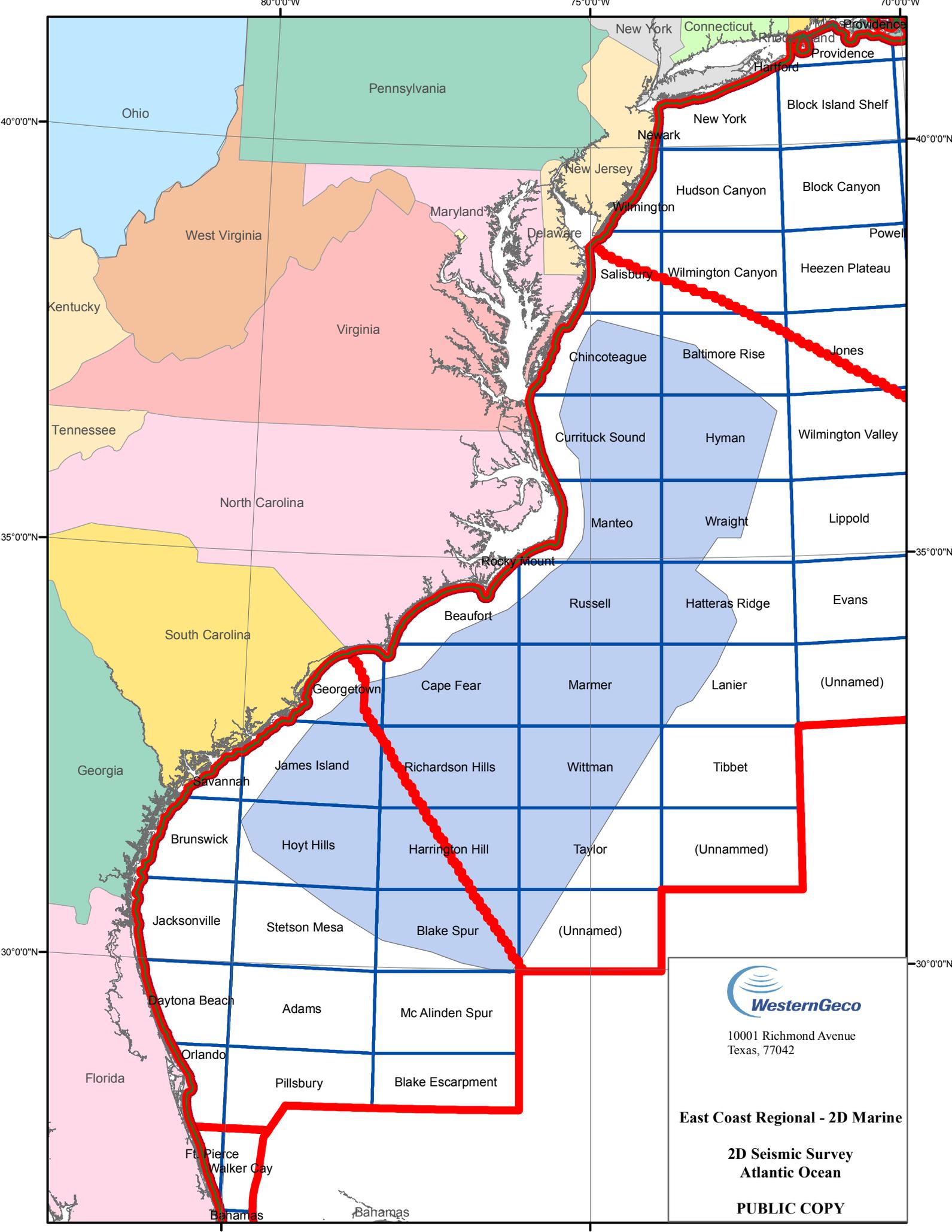
3. Describe your proposed survey activities (i.e., vessel use, benthic impacts, acoustic sources, etc.) and describe the environmental effects of the proposed activity, including potential adverse effects on marine life. Describe what steps are planned to minimize these adverse effects (mitigation measures). 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 survey crew consists of a single vessel which will tow a seismic energy source (as described in Section D – Energy Source) and a streamer array. There will also be two support (picket) vessels and a supply vessel associated with the survey.

1) It is not anticipated that this equipment will have any environmental impact. The sources have been designed to output the minimum amount of acoustic energy in order to achieve the geophysical objectives. Several steps will be taken by the crews as follows to mitigate the effects of the seismic sources:

- Use of a mitigation gun and soft start procedures as per NTL requirements
- Use of a PAM system (or equivalent)
- Application of a mammal exclusion zone for all acoustic energy sources
- Use of Marine Mammal Observers

2) There will be no bottom disturbance as no equipment will be deployed to the sea floor.



10001 Richmond Avenue
Texas, 77042

East Coast Regional - 2D Marine

**2D Seismic Survey
Atlantic Ocean**

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