



United States Department of the Interior

GEOLOGICAL SURVEY (2-1)
Conservation Division, Atlantic OCS/Eastern Region
1725 K Street, N.W., Suite 213
Washington, D.C. 20006

June 16, 1981

John C. Bryson, P.E., Executive Director
Mid-Atlantic Fishery Management Council
Room 2115 Federal Building
North & New Streets
Dover, Delaware 19901

RECEIVED

JUN 16 1981

MID ATLANTIC COUNCIL

Dear Mr. Bryson

We have received your June 8, 1981, letter addressed to this office as well as the copy of your June 12, 1981, telegram to the Secretary of Interior, James Watt, expressing your concern about the proposed use of explosives in the pending Lamount-Doherty geophysical survey permit application. Your comments are appreciated and are being considered in our evaluation of the permit application (copy enclosed).

As part of our permit review process we have been evaluating the effect of this proposed action on the environment by conducting our in house environmental assessment and by consulting with the National Marine Fisheries Services (NMFS). As a result of these studies we hope to identify whether the proposed survey can take place as proposed, or whether special restrictions will have to be placed on the survey activities. Any special restrictions deemed necessary by this office would be attached to the applicants permit prior to its approval. Stipulations which we are presently considering are enclosed.

The completed environmental assessment and the official response from NMFS, as well as any permit and agreement forms completed as a result of these studies will be available for public inspection in our office. Because of your special interest in this activity, copies of these documents will be provided to your office if you so request.

Your interest and concern in this matter is appreciated.

Norman L Weaver
for John A. Lees

Enclosures

Agreement No: _____

Date: _____

- Geological Exploration for Mineral Resources
- Geophysical Exploration for Mineral Resources
- Geological Scientific Research
- Geophysical Scientific Research

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Atlantic OCS Region
(Insert Appropriate Region Name)

APPLICATION FOR PERMIT AND AGREEMENT
FOR OUTER CONTINENTAL SHELF EXPLORATION
FOR MINERAL RESOURCES
OR SCIENTIFIC RESEARCH

(Sec. 11, Outer Continental Shelf Lands Act of August 7, 1953,
as amended on September 18, 1978 by P.L. 95-372, 92 Stat. 629,
43 U.S.C. 1340; and 30 CFR 251)

Lamont-Doherty Geological Observatory of Columbia University*
(Name of Applicant)

(Number and Street)

Palisades, New York 10964
(City, State and Zip Code)

(Name of Service Company or Purchaser
if different from above)

Application is made for a Permit and Agreement to conduct exploration for mineral resources or scientific research on the Outer Continental Shelf. Application should be filed in triplicate. Separate applications are required for each permit requested.

The applicant hereby furnishes the following information with respect to the proposed activity for which a Permit and Agreement is requested. Use separate sheets as necessary.

Each application for a Permit and Agreement shall include a plat(s) showing the proposed location of the activity. Said plat(s) should show geographic coordinates relative to Bureau of Land Management area and block numbers, an easily identified onshore point of reference, and the distance and direction from the point of reference to the area of activity.

*This application is being made by ¹Lamont-Doherty Geol. Obs. in the name of the the institutions listed on p.2

A. GENERAL INFORMATION:

1. The activity shall be conducted by
Woods Hole Oceanographic Inst.
Woods Hole Mass.

FOR

(Service Company Name)

(Purchaser of the data)

U. of Texas Marine Science Inst., Austin Texas 78712

Lamont-Doherty Geol. Obs. Palisades, N.Y. 10964

(Address)

(Address)

Bedford Inst., Dartmouth, Nova Scotia

(Telephone)

12Y4A2

(Telephone)

2. The purpose of the activity is: Scientific research

Mineral exploration

3. Describe the environmental effects of the proposed activity including potential adverse effects on marine life and what steps are planned to minimize these adverse effects (use continuation sheets as necessary) see attachment

4. The expected commencement date is June 4/81 and the expected completion date is June 20/81.

5. The name of the individual in charge of the field operation is
Dr. P. Buhl
Dr. J. Diebold. May be contacted at Lamont-Doherty Geol. Obs.
of Columbi Univ., Palisades, N.Y. 10964

Telephone (local) 914-359-2900 (marine)

Radio call sign WX 8295 for R/V F.H. Moore

6. The vessel(s) to be used in the operations is (are) as follows
CG BV for C.S.S. DAWSON

Name see attachment Official number see attachment

Registered owner see attachment

7. The port from which the vessel(s) will operate is Woods Hole, Mass.

8. Briefly describe the locator system LORAN "C"

3. COMPLETE FOR GEOLOGICAL EXPLORATION FOR MINERAL RESOURCES, OR GEOLOGICAL SCIENTIFIC RESEARCH:

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

(a) Deep stratigraphic test, or (b) Shallow stratigraphic test with proposed total depth of _____ or,

(c) Other: Seismic reflection & refraction experiments.

2. Exact geographic coordinates of proposed test(s): The corners of the area of tion are: 38°35'N, 74°50'W; 39°50'N, 73°50'W; 38°N, 70°W; 36°N, 70°W.

C. COMPLETE FOR GEOPHYSICAL EXPLORATION FOR MINERAL RESOURCES, OR GEOPHYSICAL SCIENTIFIC RESEARCH:

1. Area of activity and total number of line miles proposed: _____

LASE 870 miles; ESP 375 miles

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

Seismic
(Seismic, gravity, magnetic, etc.)

3. The instrumentation and/or technique(s) to be used in the operation(s)

is (are): airgun & explosives
(Air gun, sparker, etc.)

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 HYDROMAX GEL Pounds 55
Equivalent pounds of TNT 55

D. COMPLETE FOR SCIENTIFIC RESEARCH:

1. State the time and manner in which information resulting from the research will be made available to the public for inspection and reproduction,

such time being the earliest practicable time: 2 years from date of acquisition

2. see below* (applicant) agreed that the information and data

resulting from the research will not be sold or withheld for exclusive use.

Walter C. Pitman III
(Signature of Applicant)

Walter C. Pitman III

(Type or print name of applicant)

Senior Research Assoc., Lamont-Doherty Geo

(Title)

(Date)

Enclosure

Answer to Question 3.

The first part of the operation (see map enclosure) will be a large aperture seismic experiment (hereafter called LASE). This will involve the acquisition of multichannel seismic data using three ships aligned in tandem to give an effective array length of 12 km. In this case the sound source will be airguns only. We expect no adverse environmental effects from this experiment. The LASE operation will take place between June 3 and 17, 1981.

The second activity will involve the acquisition of at least 4 and possibly 6 two ship seismic refraction profiles hereafter called E.S. at the locations shown in the map enclosure 1. Each profile will be 100 long in a NE-SW direction and located as shown. The entire sequence of profiles will be taken between 17 and 20 June, 1981. Each profile will take approximately 4 hours. Each will consist of a sequence of shots using 55 lb. charges spaced about 5 min. apart. NO flotation gear will be used. The charges will sink at a rate of about 1 meter/sec. The depth below seafloor at which the explosion will occur will be 25 to 75 m. A gel type explosive will be used (Hvdromax). Any unexploded charge will sink to the bottom and it will quickly dissipate in the water. We expect no adverse environmental impact to be caused by this experiment.

45-60sec
fuses

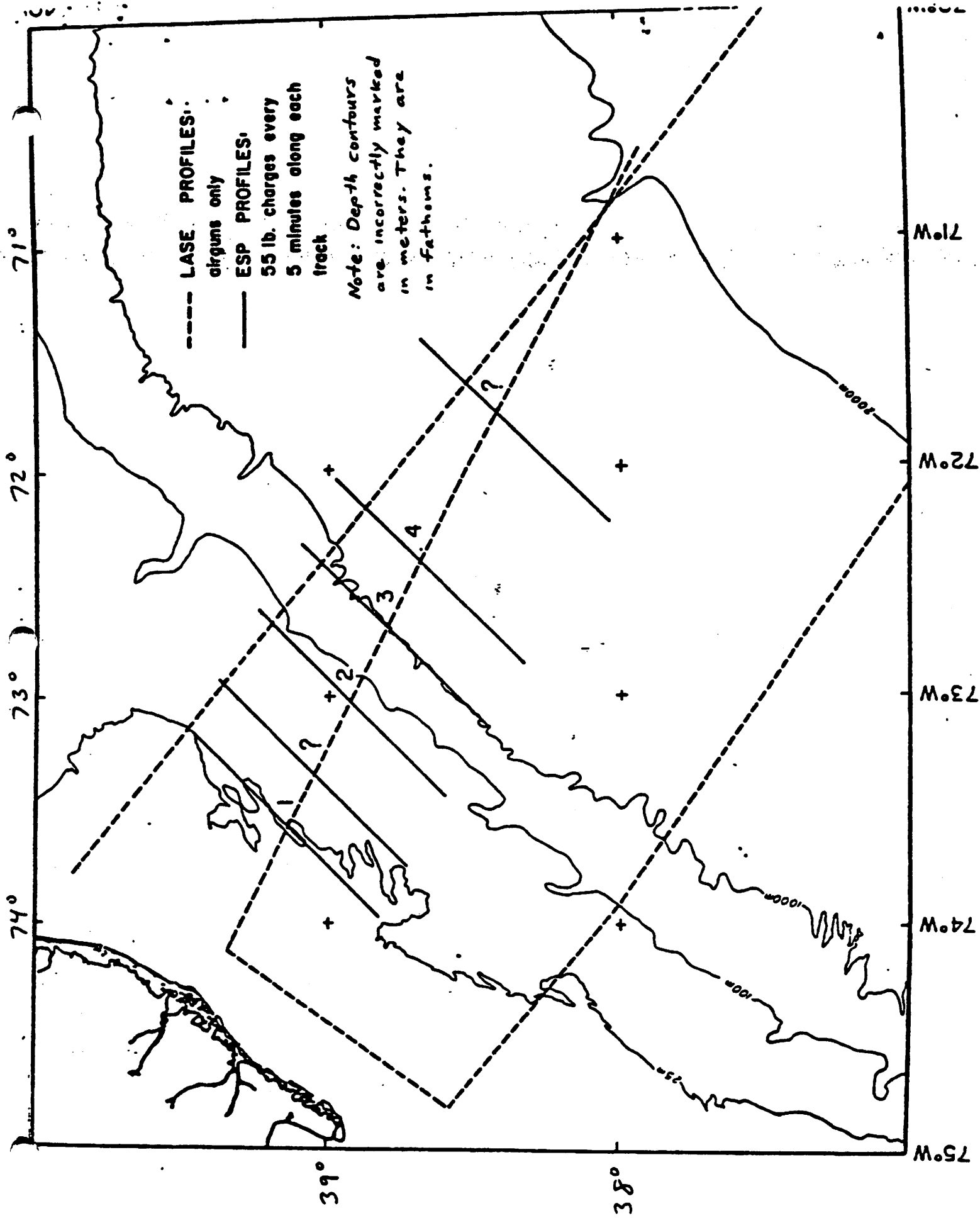
Answer to Question 6.

The ships participating in the LASE experiment will be as follows:

- 1) R.V. OCEANUS: Owned by the U.S. Government. Operated by Woods Hole Oceanographic Inst., Woods hole, Mass. 02543
It has no registration number
- 2) R.V. FRED H. MOORE: Owned by University of Texas, Austin, Texas 78712
operated by: Univ. of Texas Marine Sciences Institute,
Austin, Texas 78712
Reg. No. TX 5715XY
and 507-4923
- 3) C.S.S. DAWSON: Owned by the Canadian Government. Operated by Bedford Institute, Dartmouth, Nova Scotia BZY4AZ
Reg. No. 328-023

For the E.S.P. Experiments the operating ships will be the

R.V. FRED H. MOORE
and the
C.S.S. DAWSON



----- LASE PROFILES:
airguns only
—— ESP PROFILES:
55 lb. charges every
5 minutes along each
track

Note: Depth contours
are incorrectly marked
in meters. They are
in fathoms.

71°
72°
73°
74°
75°W

71°W
72°W
73°W
74°W
75°W

39°

38°

Addendum to Application for Permit and Agreement for OCS Exploration for Mineral Resources on Scientific Research Submitted by Lamont Doherty and Others for a June 1981 Survey.

As identified during a telephone conversation with Mr. Walter C. Pittman III on June 16, 1981 the seismic refraction survey proposed by Lamont-Doherty will utilize explosives on only the N.E. 1/4 of each of the profiles indicated on their location plat submitted with their permit application. On the two shoreward profiles the explosive charges will be suspended from floats above the ocean floor, as needed, to prevent explosion of charges on the ocean bottom.

Norman L. Weaver

Norman L. Weaver

6/17/81

Proposed.

Permit Stipulations

1. No explosives should be detonated on the bottom. Charges on the first, and parts of the second, traverse sinking at a rate of 1m/sec with a 45 sec fuse would explode on or near the bottom (about 45 m, 148 ft) As the possible damage to fish is increased in shallow water by bottom reflection of the incident wave, shorter fuses or flotation devices should be used to detonate these charges at a shallower depth. Above bottom detonation will also minimize the impact on benthic organisms.

2. A directional fish finder should be installed on the shooting vessel with an experienced operator.

3. Charges should not be detonated when fish schools are observed on the fish finder closer than the prescribed distances:

<u>Detonation Depth</u>	<u>Fish Depth</u>	Minimum "safe" <u>Distance for Fish</u>
83 ft (25 m)	about 5 ft (1.5 m)	500 ft (153 m)
83 ft (25 m)	greater than 50 ft (15.3 m)	1,200 ft (364 m)
248 ft (75 m)	about 5 ft (1.5 m)	750 ft (227 m)

NMFS may require greater minimum "safe" distances because they feel that schools of smaller fish may be in abundance in the area at the time of the survey.

4. Charges should be detonated closer to the shallower proposed depth (25 m, 83 ft) rather than the deeper depth (75 m, 248 ft). Deeper explosions require a greater minimum "safe" distance for fish than shallow ones.

5. The position of any charges which fail to explode shall be noted and the Coast Guard notified that they represent a hazard until such time that they dissipate (about 3 days).

6. Delay detonation of charges if fish finder or surface observation detects whales near the shooting vessel. NMFS may make recommendations as to safe distances.