



Transmitted via email to: ***pr.itp.applicaitons.noaa.gov***

August 9, 2023

Jolie Harrison, Division Chief
Permits and Conservation, Office of Protected Resources
1315 East-West Highway, F/PR1 Room 13805
Silver Springs, MD 20910

RE: **Incidental Take Authorization**
Bay Marchand Area, OCS Federal Waters, Gulf of Mexico

Ms. Harrison:

Please find attached request for an incidental take authorization under section 101(1)(5) of the Marine Mammal Protection Act of 1972 (MMPA), as amended for the potential take of marine mammals incidental to conducting on lease Geophysical Operations by Cantium, LLC (Cantium).

Cantium as the designated operator of Leases OCS 00369 and 00370, Bay Marchand (BM) area, Blocks 2 and 3 proposes to conduct Geophysical Exploration operations.

An Ancillary Activities request has been submitted to the Bureau of Ocean Energy Management (BOEM) and assigned Control No. A-00029.

In support of this request, please find the Letter of Authorization Application.

Please contact Kelley Pisciola, J. Connor Consulting, Inc. at (281) 698-8519 or by email at kelly.pisciola@jccteam.com should you have questions or require additional information.

Sincerely,
Cantium, LLC

Sheri Merrell
Regulatory Specialist

Ancillary Activity G&G Information and LoA Application

Cantium, LLC

Bay Marchand Area, Blocks 2 and 3

A. Type of Survey

Please indicate which type of survey will be conducted during the planned activity	
<input type="checkbox"/>	Deep Penetration Seismic (greater than 1,500 in³ total airgun array volume) <ul style="list-style-type: none">• 2D Seismic-towed Streamer• 2D Seismic-Sea-floor Cable or Nodes• 3D Seismic-towed Streamer• 3D Seismic-Sea-floor Cable or Nodes• NAZ• WAZs• 4D (Time Lapse)• Vertical Cable• Borehole Seismic (VSP)
<input checked="" type="checkbox"/>	Shallow Penetration Seismic (less than 1,500 in³ total airgun array volume) <ul style="list-style-type: none">• Surface Vessel• Surface Vessel and AUV/ROV• Borehole Seismic (VSP)
<input type="checkbox"/>	HRG Surveys (no airguns used) <ul style="list-style-type: none">• Surface vessel• AUV/ROV• Both
<input type="checkbox"/>	Other <u>Describe (if Other):</u>

B. Date, Location, and Operations Information:

Question:	Response:
Purpose of the Activity:	Seismic Acquisition Method: OBN, Streamer Type of Acquisition: 3D seismic, magnetic, Side Scan Sonar, Bathymetry.

Proposed Start Date:	No sooner than October 1, 2023
Proposed End Date:	No later than December 31, 2023
Overall Duration of the Activity (days):	~45 days
Well Name:	NA
Lease Number(s):	OCS 00369 and OCS 00370
OCS Area(s):	Bay Marchand
OCS Lease Block(s):	2 and 3
Range of water depths (ft or m):	30' - 50'
Average water depth (ft or m):	40'
Areal extent of the survey area: (in OCS lease blocks or km ²) (Attach GIS file(s) of survey lines and/or survey area perimeter)	See attached map
G&G ITR/PEIS Modeling Zone(s) in which the activity will occur (1-7):	2
Number of days during the overall activity period on which the sound source(s) listed in Section C will operate: (If the activity will occur in more than one Modeling Zone, provide the number of operating days within each modeling zone.)	~45 days

B. Sound Sources:

- List all survey-related instruments that emit acoustic energy into the water column, including but not limited to airgun or airgun arrays, sub-bottom profilers, bubble pulsers, sparkers, side scan sonars, multi-beam sonars, single-beam echosounders, ultra-short baseline (USBL) position systems, pressure inverted echosounder (PIES), etc.
- For airgun arrays, please attach a diagram showing the layout (geometry) of the array and list of airgun sizes.

Energy Source	Manufacturer	Model	Array or Airgun Size (cu in)	Source Level (SL) in dB re 1uPa@1m in water (RMS)	Source Level (SL) in dB re 1uPa@1m in water (Peak to Peak)	Frequency (Hz, kHz range)	Ping Duration / Cycle	Ping Rate
Air Gun Array	Bolt	1900LLXT	300	162	230	10-200	2msec	20sec
Side Scan Sonar	Imagenex	Yellowfin	NA	NA	NA	260-800 kHz	NA	1 kHz
Fathometer	ODOM	C100	NA	NA	NA	200 kHz	NA	2 kHz

C. Vessel Information:

Vessel Type	Vessel Name	Registration Number	Registered Owner	Typical survey speed (knots)	Highest Travelling Speed (knots)	Home Port
Chase Vessel	Tyger		Walker Marine			
Recording and Air Gun Array Vessel	Resolution II		Walker Marine			
Nodal System Deployment Vessel	Resolve		Walker Marine			
Vessel/Activity Support Base:	Port Fourchon, LA					
Transit Route: (Describe clearly or attach a map)	Direct from Port Fourchon to lease blocks.					

D. Take Estimate:

[Insert the “Summary for NOAA” table here after completing all required inputs on the “Applicant Data Entry” spreadsheet in the Take Calculator Excel file or alternative tool developed with/by NMFS]

Attached.

E. Monitoring and Mitigation Plans:

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 less than 1,500 cubic inches will be followed. Appendix F of BOEM NTL No. 2009-G34 Appendices A, B, and C to NMFS 2020 BiOp for the GoMex Oil and Gas Program
Confirm that you will apply this set of monitoring and mitigation measures during the activity:	Yes, we will apply these measures during the Geophysical Seismic Acquisition Operations

F. Attach Certification

Attach a certification signed by an authorized company official attesting that you will conduct your ancillary activity in accordance with the performance standards in 30 CFR 550.202(a), (b), (d), and (e) and any applicable protection measures listed in Appendix F of BOEM NTL No. 2009-G34 Reissued: June 19, 2020.

Certification attached.

ANCILLARY ACTIVITIES CERTIFICATION

BAYMARCHANDBLOCKS2AND3

LEASES OCS-G 00369 AND 00370

The proposed ancillary activities identified in this notification will be conducted in accordance with the performance standards in 30 CFR 550.202 (a)(b)(d) and (e) and applicable protective measures listed in Appendix F of BOEM NTL No. 2009-G34.

Reissued: June 19, 2020

Cantium, LLC (BOEM Company No. 03481)

Lessee or Operator



Kelly Reun

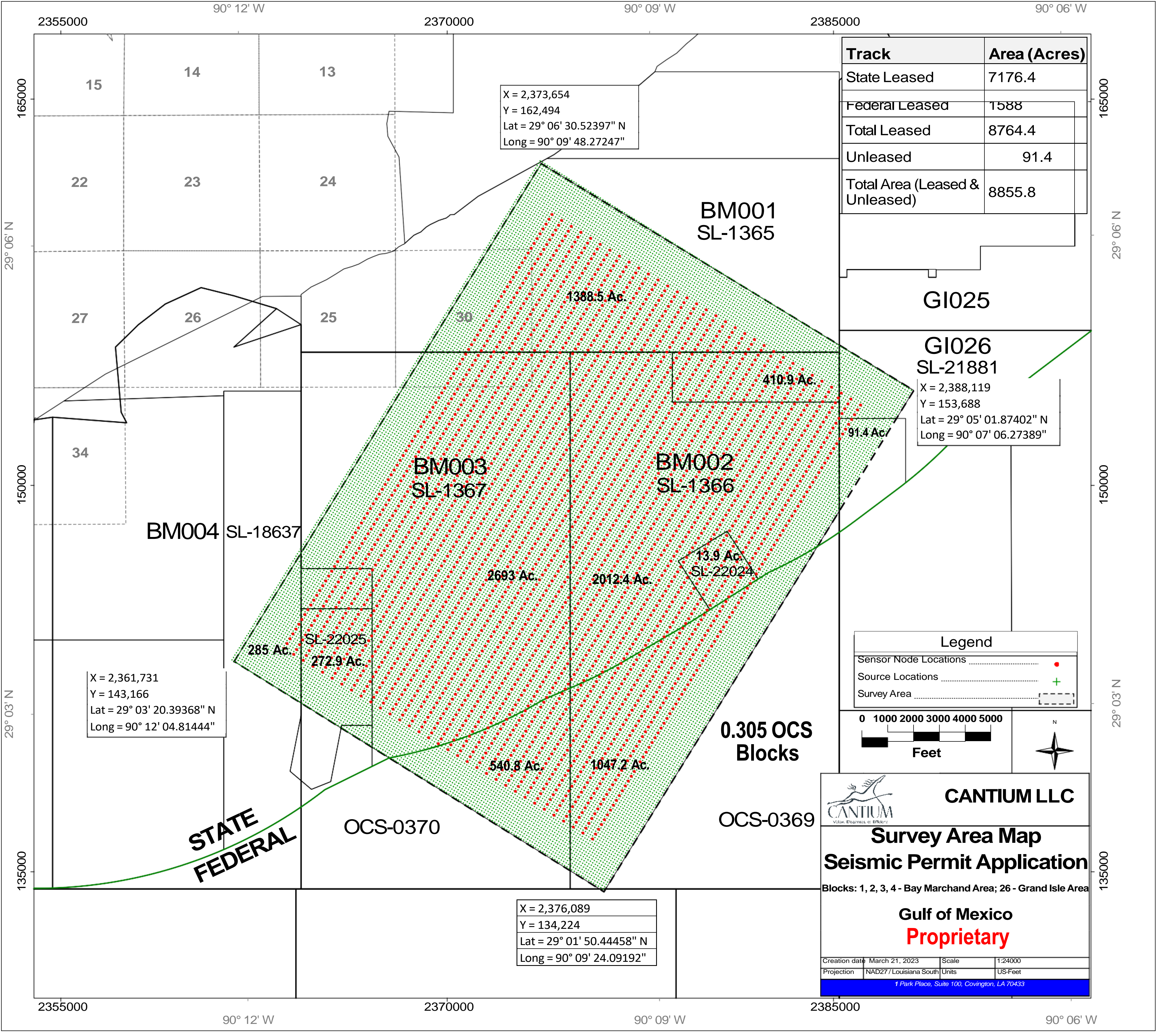
^Certifying Official

June 12, 2023

Date

G. Map of Survey Area and Transit Route

Attached.



Track	Area (Acres)
State Leased	7176.4
Federal Leased	1588
Total Leased	8764.4
Unleased	91.4
Total Area (Leased & Unleased)	8855.8

X = 2,373,654
 Y = 162,494
 Lat = 29° 06' 30.52397" N
 Long = 90° 09' 48.27247"

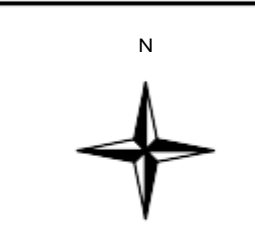
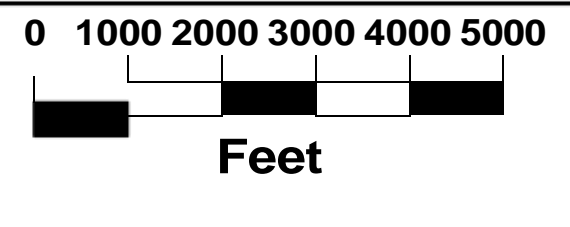
GI025

**GI026
 SL-21881**

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 Y = 153,688
 Lat = 29° 05' 01.87402" N
 Long = 90° 07' 06.27389"


X = 2,361,731
 Y = 143,166
 Lat = 29° 03' 20.39368" N
 Long = 90° 12' 04.81444"

Legend	
Sensor Node Locations	•
Source Locations	+
Survey Area	▭



**0.305 OCS
 Blocks**

**STATE
 FEDERAL**



CANTIUM LLC

Survey Area Map

Seismic Permit Application

Blocks: 1, 2, 3, 4 - Bay Marchand Area; 26 - Grand Isle Area

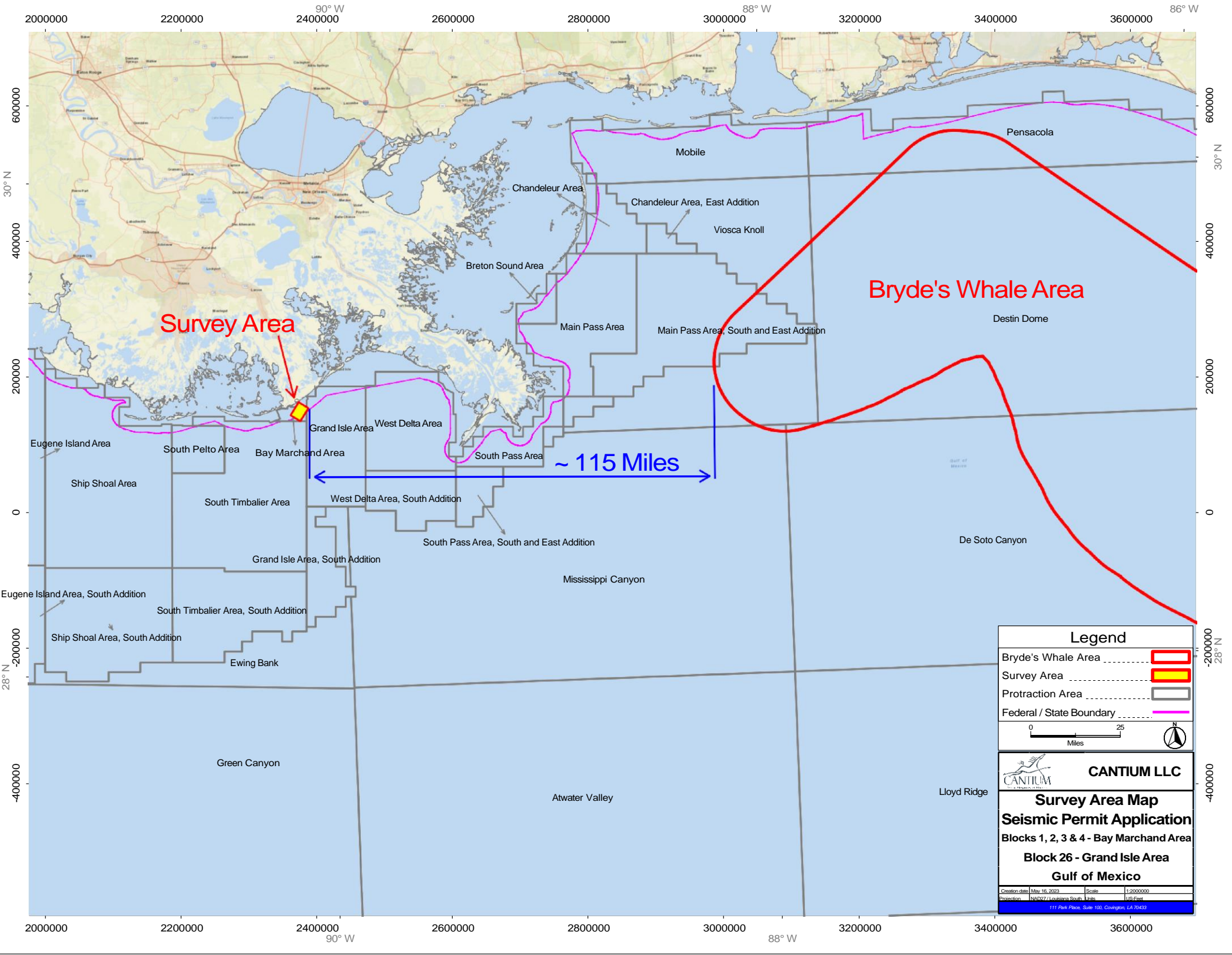
Gulf of Mexico

Proprietary

Creation date	March 21, 2023	Scale	1:24000
Projection	NAD27/Louisiana South	Units	US-Feet

1 Park Place, Suite 100, Covington, LA 70433

X = 2,376,089
 Y = 134,224
 Lat = 29° 01' 50.44458" N
 Long = 90° 09' 24.09192"



Survey Area

Bryde's Whale Area

~ 115 Miles

Legend

- Bryde's Whale Area
- Survey Area
- Protraction Area
- Federal / State Boundary

0 25
Miles

CANTIUM LLC

Survey Area Map
Seismic Permit Application
Blocks 1, 2, 3 & 4 - Bay Marchand Area
Block 26 - Grand Isle Area
Gulf of Mexico

Creation date: May 16, 2023 Scale: 1:2000000
 Projection: NAD2011 UTM Zone 18N Units: Feet

111 Park Place, Suite 100, Covington, LA 70433



June 2, 2023

Regional Supervisor for Resource Evaluation
Bureau of Ocean Energy Management
Gulf of Mexico OCS Region
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

Attn: Ms. Michelle Picou

RE: **Notification of Ancillary Activities (On Lease)**
Bay Marchand Area, OCS Federal Waters, Gulf of Mexico

Ms. Picou:

In accordance with 30 CFR Part 550.208(a) and NTL 2009-G34 reissued on June 19, 2020, Cantium, LLC (Cantium) hereby submits for your review and approval a permit to conduct on lease Ancillary Activities at Bay Marchand Area, Blocks 2 and 3, Leases OCS 00369 and 00370 respectively.

In support of this request, please find Proprietary and Public copies of the following:

- 1) BOEM-0327 Application for Permit to Conduct Geophysical Exploration
- 2) BOEM-0327 Section A General Information
- 3) BOEM-0327 Section D (*Proprietary*)
- 4) Seismic Map (*Proprietary & Public Copies*)
- 5) Survey Energy Source Table
- 6) Bryde's Whale Map

Please contact Kelley Pisciola, J. Connor Consulting, Inc. at (281) 698-8519 or by email at kelley.pisciola@jccteam.com should you have questions or require additional information.

Sincerely,
Cantium, LLC

Kelley Pisciola (for)
Sheri Merrell
Regulatory Specialist

General Information

Operator:

Cantium, LLC
111 Park Place, Suite 100
Covington, LA 70433
985.517.1218
Sam.sheets@cantium.us

Service Company:

Walker Geophysical Company LLC
2871 N. Ocean Blvd., C205
Boca Raton, FL 33431
561.251.5352
walkermarine@yahoo.com

Expected Commencement of Operations:

October 1, 2023

Expected Completion Date:

December 31, 2023

Name of individual in charge of the field operation:

Walker Geophysical Company, LLC
561.251.5352
walkermarine@yahoo.com

Vessels to be used:

Vessel Name(s)	Vessel Model	Registry Numbers	Radio Call Signs	Registered Owners
<i>RESOLVE</i>	<i>TBD</i>	<i>TBD</i>	<i>VHF Radio</i>	<i>Cameron Walker</i>
<i>RESOLUTION II</i>	<i>TBD</i>	<i>TBD</i>	<i>VHF Radio</i>	<i>Cameron Walker</i>
<i>TYGER</i>	<i>TBD</i>	<i>TBD</i>	<i>VHF Radio</i>	<i>Cameron Walker</i>

Port: Fourchon, LA

Navigation System: Trimble HydroPro, Garmin

Proposed Operations: Seismic Acquisition

Acquisition Method: OBN, Streamer

Type of acquisition: 3D seismic, magnetic, Side Scan Sonar, Bathymetry

Energy Source to be Used: Air Gun Array, Side Scan Sonar, Odom C100 Fathometer

Explosives will NOT be used

Section A General Information

Proposed Survey Activities: Vessel use, acoustic sources and benthic impacts.

1. **Potential Effect:** Excessive sound level. **Mitigation;** Soft Start, Protected Species Observers (PSO's).
2. **Potential Effect:** Bottom Disturbance. **Mitigation;** Newer and more compact OBN units.

Proprietary Informa.on A=achment

1. Attach detailed narrative and description of the energy source(s) and receiving array.

Gun array: Walker interdependent 2 to 4-gun linear, 300 cubic inches. RTS controller and gun spares.

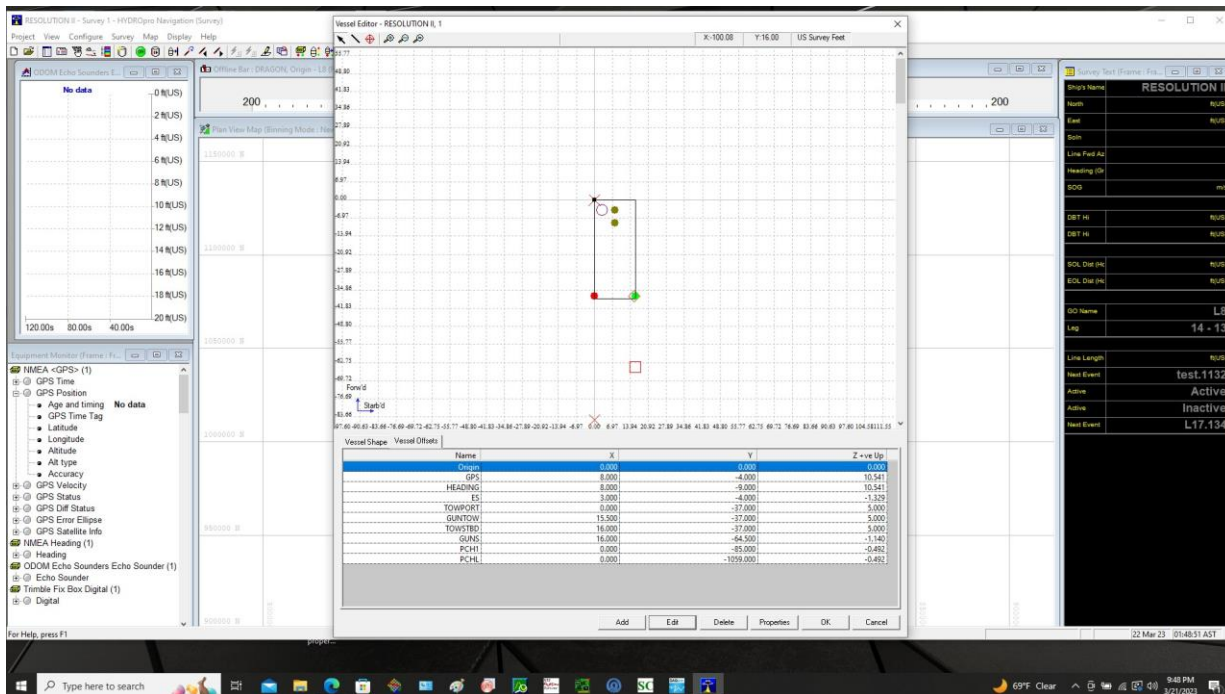
Streamers: 2021 Walker-Nautilus solid digital, 1.2" nominal diameter, 3.125m point sensor spacing, 96 channels (300m).

Ocean Bottom Nodes: Geospace MARINER, 3010 channels, sample interval 1ms.

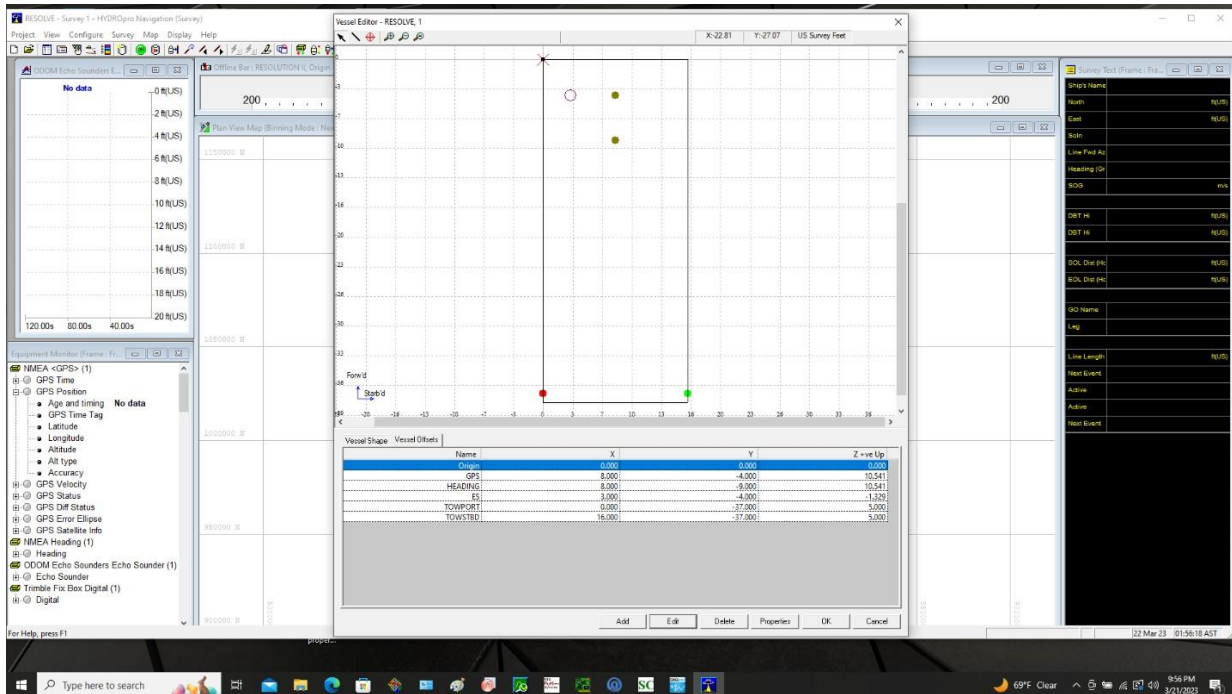
2. Attach a map view diagram/schematic that illustrates vessel(s) source and receiver(s) configuration. Label each vessel indicating its function and include the dimensions of streamer(s), tow fish, etc. Indicate the number of chase and alternate vessels to be used.

There will be one chase vessel (TYGER) used during seismic acquisition.

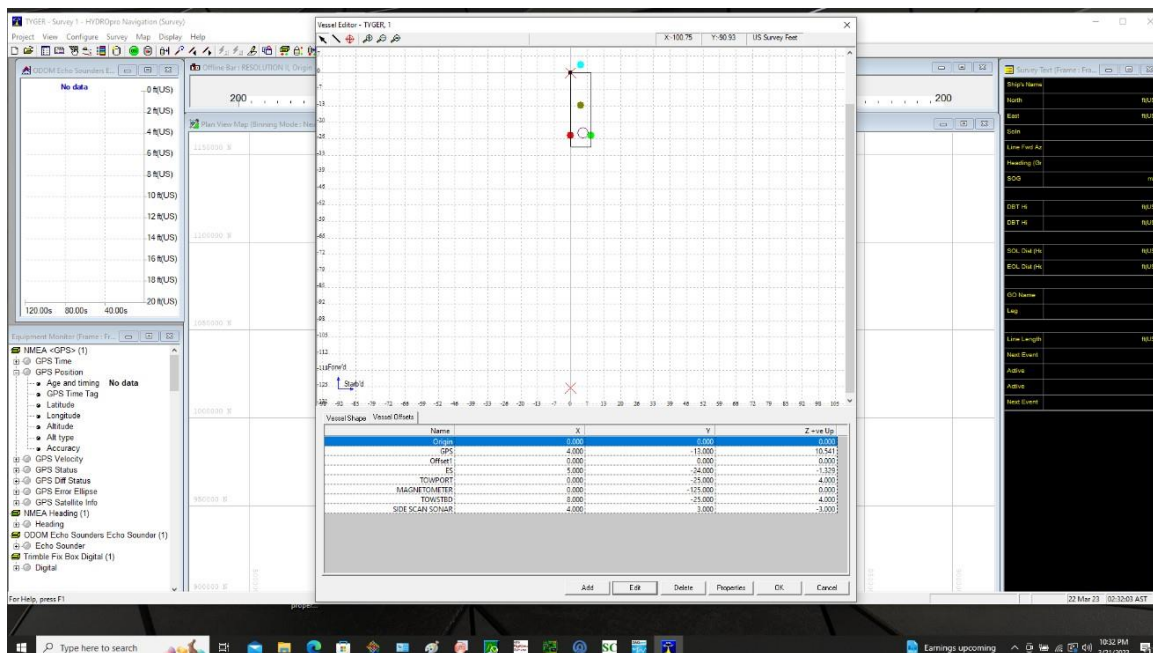
RESOLUTION II: Recording and air gun array vessel equipped with 96-channel digital streamer with 3.125m group spacing. Air gun array is 2X150 c.i. Bolt 1900LLXT-type air guns.



RESOLVE: Nodal system deployment vessel and carries the Mariner deployment trailer, rope, anchors and nodes.



TYGER: Reconnaissance vessel that will acquire the magnetometer, side scan sonar and bathymetric data to map the boYom prior to node deployment. TYGER is also the chase boat during seismic data acquisition.



3. List each energy source to be used (e.g., airgun, airgun array(s), sparker, towed dipole, side scan sonar, sub bottom profiler, etc.). Indicate the source's manufacturer, model, Source Level (SL) in dB re $1\mu\text{Pa}$ @ 1m in water (RMS) and if applicable, Source Level (SL) in dB re $1\mu\text{Pa}$ @ 1m in water (Peak to Peak) and ping rate. If the manufacturer does not provide a peak to peak level (many side scan sonars, etc.), please enter N/A. Additionally, provide the operational frequency ranges.

Energy Source	Manufacturer	Model	Array or Airgun Size (cu. in.)	Source Level (SL) in dB re $1\mu\text{Pa}$ @1m in water (RMS)	Source Level (SL) in dB re $1\mu\text{Pa}$ @1m in water (Peak to Peak)	Frequency (Hz, kHz range)	Ping Duration/ Cycle	Ping Rate
Air Gun Array	Bolt	1900LLXT	300	162	230	10-200	2msec	20sec
Side Scan Sonar	Imagenex	Yellowfin	N/A	N/A	N/A	260-800KHz	N/A	1 KHz

Fathometer	ODOM	C100	N/A	N/A	N/A	200 KHz	N/A	2 KHz
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4. State the shot frequency of the source array(s) as shots per minute or shots per linear mile (statute): 3 shots/min
5. List the towing depth (ft/m) of the source array(s): <1m
6. If applicable, list the towing depth (ft/m) of the receiver(s): <0.3m
7. CSEM, OBN, Magnetotelluric, and OBC surveys: Describe the receiver deployment and retrieval procedures. Indicate the number and spacing of any ocean bottom receivers, cables, and anchors. If anchors will not be retrieved, provide their physical composition and rate of decomposition.

We will spend approximately 5 days running recon over the project area while a shore-based crew will organize the dockside node operation center. The offshore recon will be run from our 30-foot chase boat (*TYGER*) that will be configured with side scan sonar (SSS), depth sounder and magnetometer. Every OBC node receiver line will be mapped for all bottom hazards. Once any hazards to placing nodes and their connecting ropes are identified, we will alter deployment of the nodes to avoid those hazards. Rope segments will be used to deploy around exposed pipes, wrecks, or other cultural debris rather than lay over them. A total of 3003 Mariner nodes will be deployed over 33 lines at 220' inline spacing with 440' cross line spacing. Each line will be secured with 2 retrievable anchors and equipped with acoustically released buoys such that no obstacles will be present at sea level at the time of acquisition. At the time of retrieval, these buoys will be activated to float to the surface and the RESOLVE will perform node retrieval by spooling the Tenex rope on reels. Divers will be on call during node retrieval. If there is a problem, we will buoy the snag and move on to another pick up location while the divers come out and investigate.

8. List the navigation/positioning system or method used to position shotpoint locations and/or ocean bottom receivers: Trimble Hydropro RTK
9. Proposed areal extent (in OCS blocks) for 3D surveys or total number of line miles for 2D surveys: 0.305 OCS Block (Louisiana)
10. Provide the company identification name of the proposed survey (e.g., Deep Six Survey) and list all proposed initial and final processed data sets that will result from survey acquisition.

Bay Marchand Shallow Reserve Area Survey (SRA)

Proposed Initial and Final Datasets

Pre Stack Time Migrated Volumes:

PSTM gathers (Raw and conditioned)

PSTM stacks (Full and Angle)

RMS and Interval velocity volume

Pre Stack Depth Migrated PP Volumes:

PP - KPSDM gathers (Raw and conditioned)

PP - KPSDM stacks (Full and angle)

PP - RTM stacks (Full and angle)

RMS and Interval velocity volume

Pre Stack Depth Migrated PS Volumes:

PS - KPSDM stacks (Raw and Final)

PS - RTM stacks (Raw and Final)

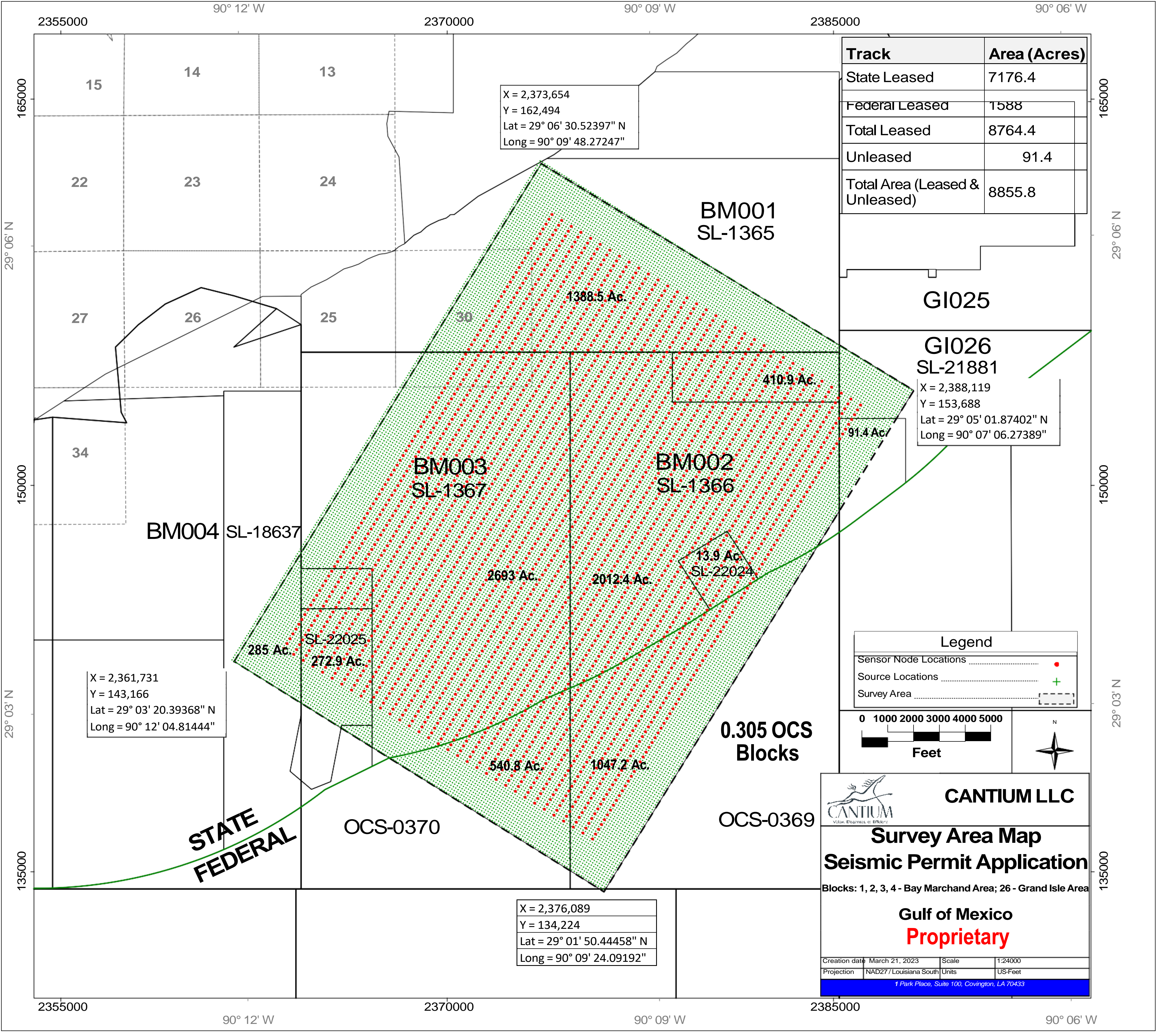
11. State the estimated date (month and year) on which initial and final processing will be available for all proposed processed data sets:

09/2024

12. Attach map(s), plat(s), and chart(s) (preferably at a scale of 1:250,000) and an electronic version of same showing latitude and longitude, scale, specific protraction areas, OCS boundary/3-mile limit, block numbers. The map, plat or chart should be submitted at a sufficient size and scale to make out all details of the activities shown. The map should be labeled "**Proprietary.**" For 2D data acquisition provide specific track lines with line identifications with the total number of line miles proposed or a representative polygon and total number of blocks for 3D surveys. Along with the hardcopy map, submit on CD or flashdrive (subject to security screening), the necessary ArcGIS shape files to reproduce the map for 2D track lines including individual line names in the attribute table. For 3D surveys provide a representative polygon as an ArcGIS shape file. You must provide a shapefile data set of the latitude/longitude location for all track lines, shot lines, and node placements. This can be submitted at a later time but must be received before activities can take place.

(See attached: BM_Seismic_Map_with Receiver and Source Proprietary)

SEISMIC MAP (PROPRIETARY)



Track	Area (Acres)
State Leased	7176.4
Federal Leased	1588
Total Leased	8764.4
Unleased	91.4
Total Area (Leased & Unleased)	8855.8

X = 2,373,654
 Y = 162,494
 Lat = 29° 06' 30.52397" N
 Long = 90° 09' 48.27247"

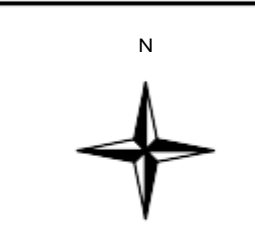
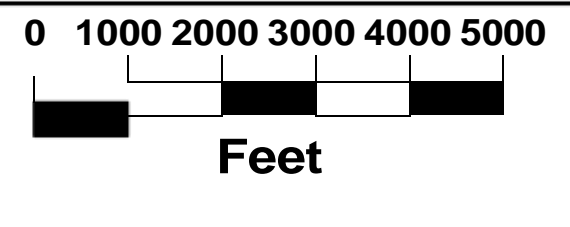
GI025

**GI026
 SL-21881**

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Legend	
Sensor Node Locations	•
Source Locations	+
Survey Area	▭



**0.305 OCS
 Blocks**

**STATE
 FEDERAL**

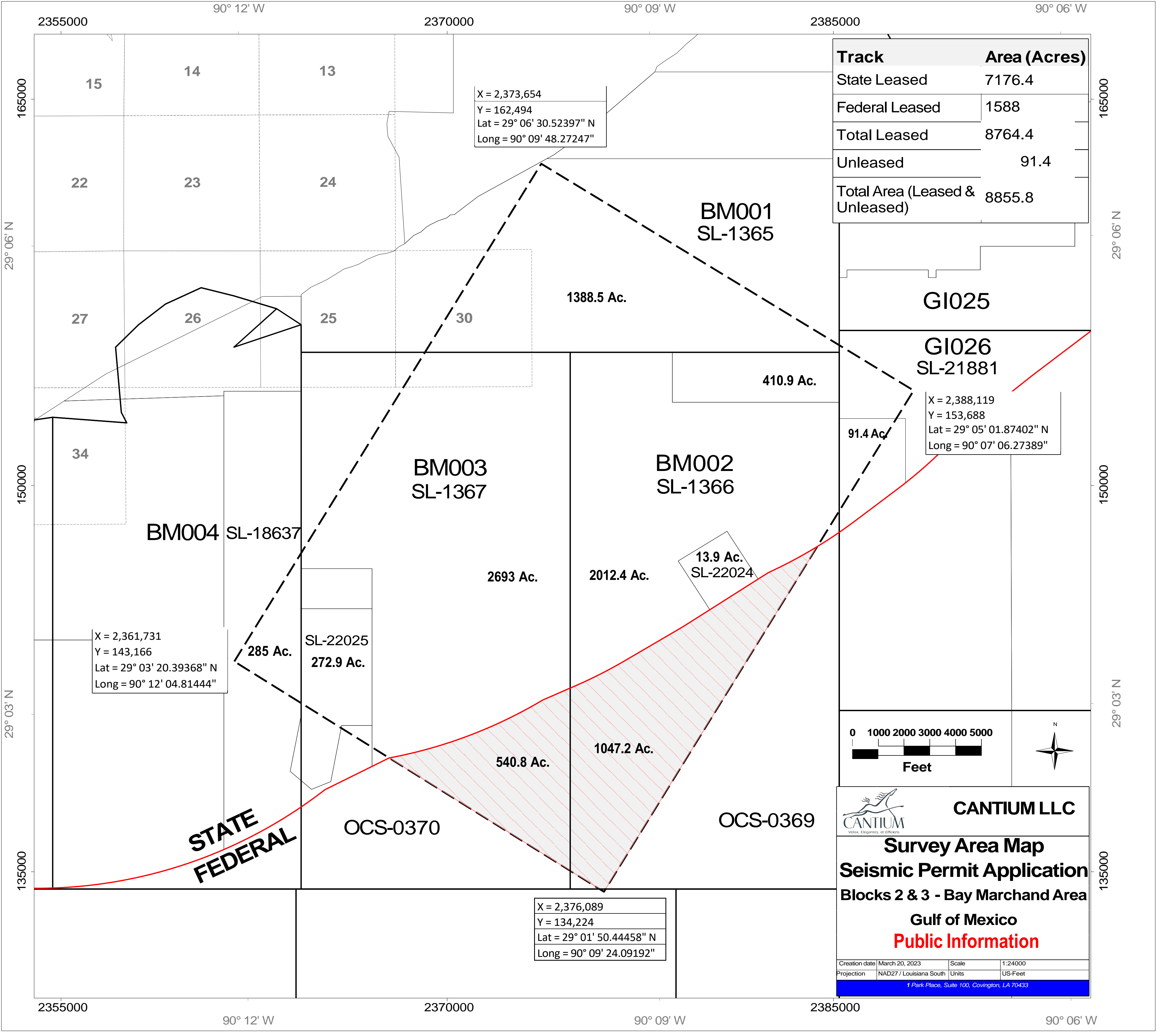
CANTIUM LLC

Survey Area Map
Seismic Permit Application
 Blocks: 1, 2, 3, 4 - Bay Marchand Area; 26 - Grand Isle Area
Gulf of Mexico
Proprietary

Creation date	March 21, 2023	Scale	1:24000
Projection	NAD27/Louisiana South	Units	US-Feet

1 Park Place, Suite 100, Covington, LA 70433

X = 2,376,089
 Y = 134,224
 Lat = 29° 01' 50.44458" N
 Long = 90° 09' 24.09192"

SEISMIC MAP (PUBLIC)



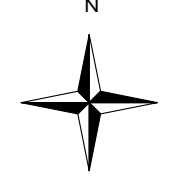
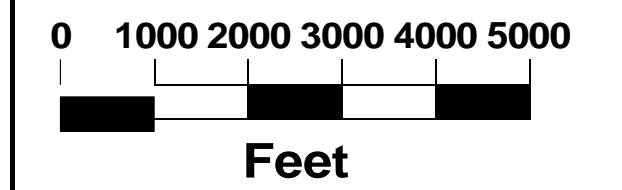
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 **CANTIUM LLC**
 Velox, Elegantes, et Efficiens

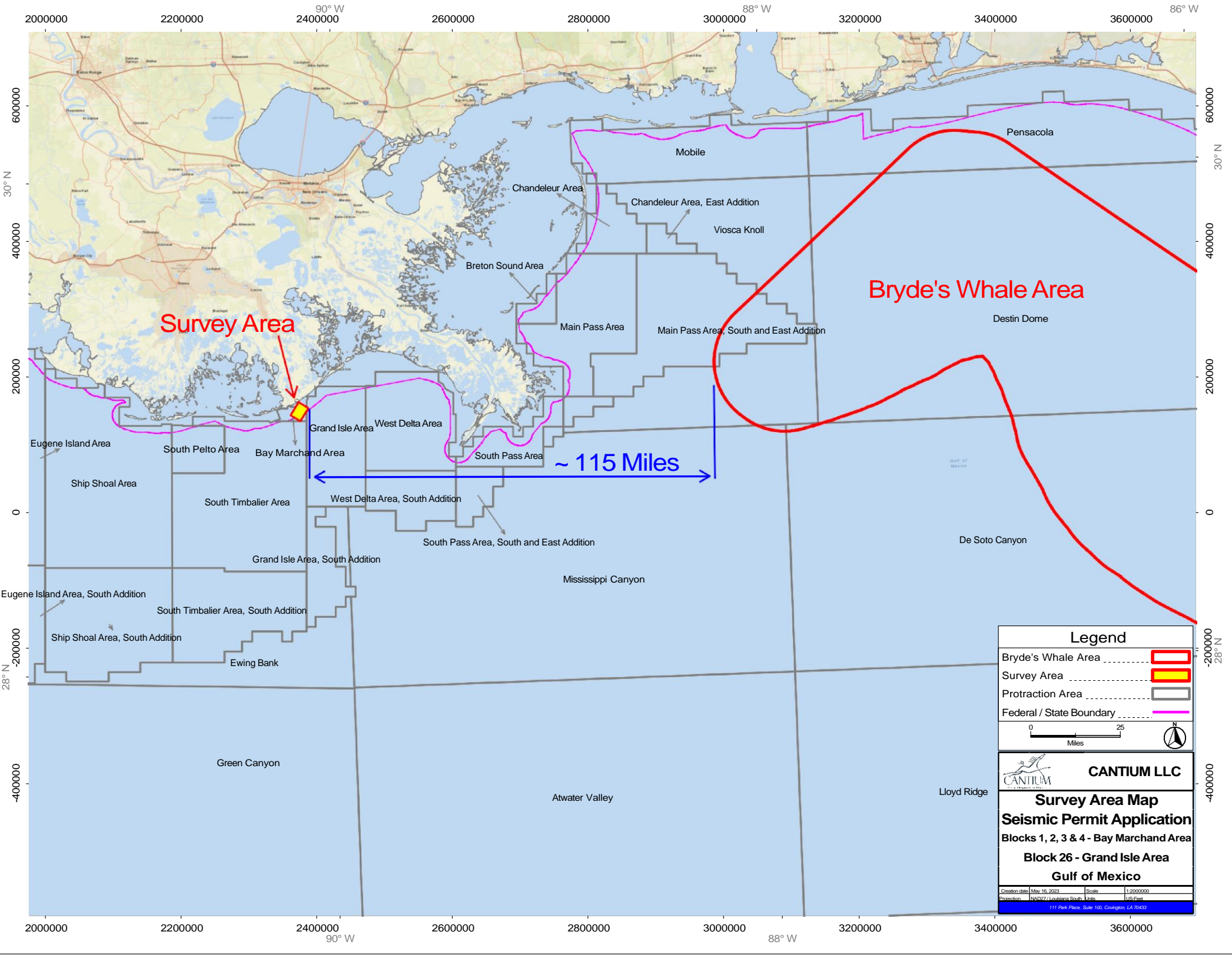
Survey Area Map
Seismic Permit Application
Blocks 2 & 3 - Bay Marchand Area
Gulf of Mexico
Public Information

Creation date	March 20, 2023	Scale	1:24000
Projection	NAD27 / Louisiana South	Units	US-Feet

1 Park Place, Suite 100, Covington, LA 70433

SURVEY ENERGY SOURCE TABLE

Energy Source	Manufacturer	Model	Array or Airgun Size (cu. in.)	Source Level (SL) in dB re 1μPa@1m in water (RMS)	Source Level (SL) in dB re 1μPa@1m in water (Peak to Peak)	Frequency (Hz, kHz range)	Ping Duration/ Cycle	Ping Rate
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Side Scan Sonar		Yellowfin				200-400KHz		1 KHz
Fathometer	ODOM	C100				200 KHz		2 KHz



Survey Area

Bryde's Whale Area

~ 115 Miles

Legend	
Bryde's Whale Area	
Survey Area	
Protraction Area	
Federal / State Boundary	



CANTIUM LLC

Survey Area Map
Seismic Permit Application
Blocks 1, 2, 3 & 4 - Bay Marchand Area
Block 26 - Grand Isle Area
Gulf of Mexico

Creation date: May 16, 2023 Scale: 1:2000000
 Projection: NAD83 UTM Zone 18N Units: Feet

111 Park Place, Suite 100, Covington, LA 70433