

## **Remotely Operated Vehicle (ROV) Investigations of Unidentified Magnetic Anomalies and/or Sidescan Sonar Targets: Methodological Guidelines**

### **MISSION:**

**The MMS may direct you to conduct ROV investigations around magnetic anomalies and sidescan sonar targets that have potential to be historic shipwrecks.**

The goal of the following investigative procedures is twofold:

1. to determine if the magnetic anomaly (magnetic anomalies are localized disturbances in the earth's magnetic field), sidescan target, and/or shipwreck is modern debris or a historic archaeological resource; and
2. to determine if the magnetic anomaly, sidescan target, and/or shipwreck possesses qualities that makes it a significant and unique archaeological property as defined by Federal law. Not all shipwrecks are considered "significant."

### **TESTING PROCEDURES**

#### ROV Investigations of Unidentified Magnetic Anomalies, Sidescan Sonar Targets, and Potential Historic Shipwrecks.

All ROV investigations of any unidentified magnetic anomalies, sidescan sonar targets, or potential shipwrecks listed in the MMS archaeological analysis may not begin until the operator has contacted the MMS GOMR Social Sciences Unit. This must be done at least two (2) weeks prior to commencement of field investigations as per Notice to Lessees (NTL) 2005-G07. It is recommended that a professional archaeologist be on board the survey vessel during the investigation of unidentified magnetic anomalies, sidescan sonar targets, and shipwrecks. If this is not possible, it is critical that you contact one of the marine archaeologists at MMS to plan the investigation. Failure to comply can result in civil penalties and/or criminal prosecution. A professional archaeologist must review the tapes to determine the significance of the site. The following procedures should be followed.

1. **During ROV investigations of magnetometer anomalies, sidescan sonar targets, and/or shipwrecks, the ROV pilot is prohibited from disturbing or picking up any artifacts. This includes features and other structural components of a shipwreck.**
2. Do not turn off the video feed any time during the survey. Keep a complete record from the approach to the site to the time you leave it.
3. During ROV investigations, the ROV pilot must not allow the tether to drag on the site or in the debris field.
4. Use Ultra Short Base Line (USBL) positioning. The USBL fixes (waypoints) are to be taken near the location of the object (if visible) to provide information on the size and shape of the anomaly.
5. If the anomaly is a shipwreck, the USBL fixes should be taken on the bow, amidships port-side, amidships starboard-side, stern, and any other survey ties that

- would help determine the size of the vessel. Include important structural components such as stacks, pilot house, external machinery, housings, etc.
6. In addition to the physical remains of the shipwreck, survey the surrounding area around the vessel to determine the size of the debris field. This may include the area between the proposed area of impact and the wreck site, or the distance set by MMS. Determine position of and video survey any significant debris. Use scanning sonar from as many positions as needed to define size and geometry of debris field.
  7. It may be necessary to run a series of transect lines to get the entire site.
  8. Request the surveyor to take timed sequence X-Y-Z points so that it will be possible to reproduce a post-plot of ROV movement.
  9. Complete video inspection with voice-over commentary is necessary during all survey activities. Continuous video with position overlay is to be recorded throughout the entire survey. Be systematic so that complete coverage of the sides of the vessel is recorded smoothly in sequence. In addition, please record features such as stacks, pilot house, damage, external machinery and housings, etc. Do not get distracted by interesting marine life. It's important to be able to follow where you are on the wreck, which can be difficult if you go off-line to chase a fish.
  10. Video as closely as possible without disturbing the site all unique features such as superstructure, stacks, pilot house, damage, external machinery and housings debris, etc. and continuously record all on video tape. At all unique features a Video TIF image (clip) is to be recorded.
  11. Thoroughly inspect bow and stern for name of vessel.
  12. If possible, position ROV on at least four (4) points around the vessel at a sufficient distance from the wreck to image the entire vessel on the ROV scanning sonar. At each of these points both plan (sector scan) and profile imagery of the wreck are to be made using the dual cursor measuring system to define the size of the wreck. At each of these points, TIF's of each sonar measurement are to be recorded in addition to continuous digital or VCR tape.
  13. Note and survey any significant scars on the seafloor in the immediate vicinity of the wreck. Collect video and sonar imagery of seafloor features, such as drag scars, mounding, or depressions associated with the wreck. In addition, take additional footage of any industry-related items in the immediate vicinity (e.g., lost anchors, boreholes, pipelines, and discarded pipe).

This methodology will provide the most information on the site under investigation.

If recorded anomalies on or near the pipeline centerline, anchor radius, and other potential impact zone can not be located using the above search methodology, additional ROV transect lines may be required to determine the precise location and limits of the anomaly or anomaly cluster.

A determination of the anomaly/site's historical significance must be made using the criteria specified in **36 CFR Part 60.4**, "Determination of Eligibility for Inclusion in the National Register of Historic Places," and National Register Bulletin No. 20, *Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places*.

## **REQUIRED COORDINATION WITH MMS**

A "Report of Findings" prepared in accordance with the report writing standards specified in MMS NTL 2005-GO7, Enclosure No. 2, must be submitted to MMS for approval within ten (10) work days of the completion of fieldwork. In addition, please submit copies of the video footage to the MMS. DVD format is preferred. MMS archaeologists must concur with the findings of the field archaeologist prior to the start of construction.

For pipelines, if the archaeologist determines that the anomalies are caused by modern marine debris, or that the proposed construction will have no effect on potentially significant archaeological properties, notice to proceed can be given by the MMS Field Operations Pipeline Section upon receipt of a telefaxed notification of these results signed by the archaeologist. The proposed construction may proceed pending the mandatory 48-hour notification to the Pipeline Section and fulfillment of any other permit requirements. A "Report of Findings" still must be submitted as indicated above.

If ROV investigations discover a potentially significant archaeological property, the Office of Field Operations must be notified immediately. NTL 2005-G08 provides guidance on how to contact the MMS during off-duty hours. Further operational measures will be developed in accordance with MMS 2005-G07, Enclosure No. 3, in consultation with the lessee or right-of-way holder, the field archaeologist, and the MMS.

## **CONFIDENTIALITY**

The MMS has responsibility under Federal law to prevent harm to historic sites from actions it permits. Information relating to the location or nature of historic sites encountered by your operations must be kept strictly confidential. Copies of video shot around historic shipwrecks should not be made or kept for personal use and the location of these sites should not be disclosed to any third party. It is the responsibility of both you and your subcontractors to report any suspected shipwreck to the MMS immediately.

### **Contact information for ROV shipwreck surveys.**

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Dr. Jack Irion	Supervisor, Social Sciences Unit	(504) 735-1742	<a href="mailto:jack.irion@mms.gov">jack.irion@mms.gov</a>
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