

Presentation 6: Kimberly Faulk

A Better Tool and Process to Delineate Ferrous Materials for Cultural Resource Management Offshore

Current BOEM/BSEE guidelines require the use of a single magnetometer in water depths less than 200 meters during geophysical surveys, despite the growing awareness that geomagnetic storms induce false anomalies in magnetic data. In 2017, Geoscience Earth & Marine Services (GEMS) proposed using a marine gradiometer to assist an operator map previously noted unidentified magnetic anomalies in the Gulf of Mexico. During the winter of 2018, GEMS collected 80.3 line miles of gradiometer data over a 0.58 square mile area. Data review and analysis required creation of new interpretation methodologies and parameters. This paper addresses the current state of understanding around marine gradiometers for archaeology, recommendations for using gradiometers for cultural assessments, and a methodology by which the data can be assessed for cultural materials and packaged as a final deliverable.