TITLE: **DEMONSTRATION OF A SUBSIDENCE PREDICTION TECHNIQUE FOR THE ILLINOIS COAL BASIN**

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ABSTRACT:

This paper presents Bureau of Mines research on modifying the influence function method to predict subsidence, as well as techniques to predict the resultant damages. According to theory, the influence function technique must incorporate an intensity function to represent the relative significance of the causes of subsidence. This paper shows that the inclusion of a reasonable intensity function increases the accuracy of the technique, then presents the required functions for case studies of longwall coal mining subsidence in Illinois, and subsidence produced by ground water withdrawal in California. Then the paper discusses a method to predict the resultant strain from a simply measured site constant and calculated ground curvatures. Finally, the paper presents a technique to predict the damages caused by subsidence, particularly structural damage to residential foundations. This technique relates the values of bending and twist in the footing to the formation of cracks. The use of a Mohr's circle of curvature to predict damage then is introduced. Finally, the use of the influence function subsidence prediction technique to calculate the curvature values for the Mohr's circle is demonstrated, and hazard maps above typical longwall panels are created.

TITLE: **THE FISH AND WILDLIFE SERVICE'S SPILL RESPONSE CONTINGENCY PLAN - A COMPREHENSIVE APPROACH**

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ABSTRACT:

It is the responsibility of the Fish and Wildlife Service (Service) to conserve, protect, and restore fish and wildlife and their habitats. The Oil Pollution Act of 1990 (OPA) calls for the protection, rescue, restoration, and rehabilitation of fish and wildlife threatened or impacted by a discharge of oil. The Service's broad and diverse range of responsibilities for protecting the natural resources of U.S. extends from nearshore marine and estuarine communities, to inland terrestrial and freshwater environments. In order to meet the mandates outlined in the OPA and enhance its capabilities in responding to discharges, the Service has developed a Spill Response Contingency Plan (SRCP). The SRCP is comprehensive, offering an A to Z compendium of guidance for responsibilities and procedures for spill events. These responsibilities include a wide variety of duties, from the Service's National Spill Coordinator to refuge and hatchery staff. Procedures include the implementation of the Incident Command System (ICS) a new "3 tiered" guidance for fish and wildlife protection during a discharge. The tiers represent specific goals in the protection of fish and wildlife, offering progressively more aggressive intervention in order to obtain the necessary levels of protection.

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