SITE:	Harding Rock	LATITUDE:	37-46.0
HAZARD:	Vessel Navigation	LONGITUDE:	122-22.9
VOLUME:	300,000 bbl		
DURATION:	3 days		

TRAJECTORY ANALYSIS

A spill trajectory envelope was calculated for vessel navigation hazards near Harding Rock in San Francisco Bay, just east of the Golden Gate. The trajectory analysis considered oil transport by the wind and tidal currents, and spreading of the oil spill by physical processes such as gravity, surface tension, and tidal dispersion. Spill transport on an ebbing tide would carry the oil westward through the Golden Gate. At that point, ebb tides would likely spread the oil northward and southward. A spill during the flood tide would transport the oil northward and southward farther into San Francisco Bay. A spill transported over the entire flood tide would reach the Richmond/San Rafael Bridge to the north and Hunters Point to the south. Physical spreading of the spill over the initial 6-hour time period would move the oil an additional 2 miles.

Wind-induced surface currents could cause additional transport of oil depending on the direction, strength, and persistence of local winds. Northerly winds, combined with physical spreading, could transport the oil into south San Francisco Bay past the San Mateo Bridge. Within 3 days, westerly and southwesterly winds could carry oil across San Pablo Bay to approximately the Carquinez Bridge.

Any oil exiting San Francisco Bay would be expected to be transported either southward or northward along the coast depending on the direction of the wind. For oil that is transported outside the Bay, northerly winds could transport the oil as far as Point Montara after 3 days. Southerly winds outside the Bay could transport the oil northward as far as Point Reyes after 3 days.

These spill trajectory envelopes represent the outer perimeter of shoreside areas that could receive oil in the event of any spill. The envelopes are based on regional extremes of climate, tide, current, and wind and assume pessimistic dispersion and other adverse weather conditions. These trajectory envelopes do not represent the trajectory of any one spill. A full discussion of the details used for preparing these spill envelopes is provided in Section 202.2.