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Air Injection in a Gulf Coast Light Oil Field

Ken A. Haley (haleyka@bp.com; 281-366-7360)
Gulf Coast Business Unit

Abstract

Why inject air in an oil reservoir? In Southwest Louisiana, air injection is proving to be a low cost way of generating 280 BOPD of incremental oil production. While air injection is historically associated with heavy oil or low permeability light oil reservoirs, the West Hackberry Air Injection Project is proving that air can do more. In three high permeability light oil reservoirs, air injection is repressuring the reservoir, repositioning the oil rim, and improving recovery through the Double Displacement Process. The Double Displacement Process is the gas displacement of a water invaded oil column for the purpose of recovering oil through gravity drainage. In high permeability light oil reservoirs, gravity drainage can recover 80% to 90% of the oil in place versus waterdrive recoveries of 50% to 60% of the oil in place.