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DEPARTMENT

OIL OPERATIONS · OIL PRODUCTION / SUBSIDENCE

August 1, 2006

HONORABLE MAYOR AND CITY COUNCIL
City of Long Beach
California

RECOMMENDATION:

Receive and file the attached report, "Elevation Changes in the City of Long Beach, November 2005 to May 2006." (Citywide)

DISCUSSION

The City of Long Beach (City), through the Long Beach Gas and Oil Department (LBGO), supervises oil production and subsidence control operations in the Wilmington Oil Field. LBGO conducts elevation surveys every six months to monitor elevation changes in the oil fields and adjacent City areas. This report focuses on elevation changes that have occurred from November 2005 to May 2006. The LBGO survey includes the following areas: Civic Center, Central City, Alamitos Bay, Naples, Harbor District, and an offshore area encompassing the four offshore oil islands.

The results of the six-month survey show elevations were stable in the Civic Center, Central City, Alamitos Bay, Naples, and offshore areas. Harbor District elevations were stable except for two areas. An elevation loss of 0.076 feet (0.91 inches) was centered along Henry Ford Avenue and the Cerritos Channel. This area is located over an oil reservoir that had been previously steamflooded. The steamflood was shut down in 1999 after high steam temperatures were found to cause compaction in the reservoir resulting in elevation loss. A program of cold-water injection was initiated and is cooling the reservoir to mitigate the elevation loss. An elevation gain of up to 0.075 feet (0.90 inches) was observed throughout the eastern Harbor District, overlying Fault Blocks IV and V. Water injection requirements for this area are being adjusted. There is no immediate reason for concern in either of these two areas in which minor elevation changes were noted.

The LBGO survey uses a series of benchmarks to determine elevation changes. Studies by the Department's engineers and geologists show that the benchmarks may rise and fall in such a manner as to make a survey either optimistic (slightly up in elevation) or pessimistic (slightly down in elevation). These changes in elevations may

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be associated with tidal cycles, temperature changes, and/or deep earth tectonic changes. Repressuring operations will result in the rebound of the affected areas. Surface elevations in a rebounded area can be expected to fluctuate under changing water flood conditions.

Deputy City Attorney Charles Parkin reviewed this item on July 10, 2006.

TIMING CONSIDERATIONS

City Council action on this matter is not time critical.

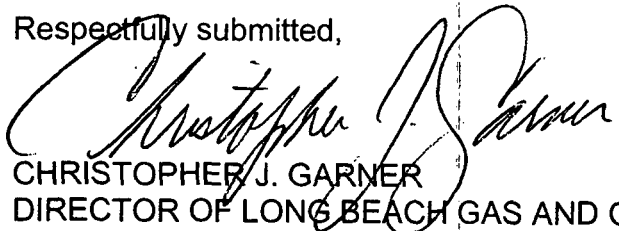
FISCAL IMPACT

There is no fiscal impact associated with this action.

SUGGESTED ACTION:

Approve recommendation.

Respectfully submitted,



CHRISTOPHER J. GARNER
DIRECTOR OF LONG BEACH GAS AND OIL

CJG:jdj

Attachment

APPROVED:



GERALD R. MILLER
CITY MANAGER