

# Analisa korosi pipa trunk line minyak di Lapangan Pendopo = Corrosion analysis of oil trunk line pipe at Pendopo field

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## Abstrak

### <b>ABSTRAK</b><br>

Penelitian ini difokuskan pada analisa korosi pipa trunk line yang menyebabkan pipa diganti dalam waktu 8 tahun dari 15 tahun rencana desain. Material baja API 5L Grade B dalam kondisi belum terpakai dan yang terkorosi dianalisis secara fisik dan mekanik menggunakan uji metalografi, uji tarik, uji komposisi kimia, Scanning electron microscopy-Energy Dispersive Spectroscopy (SEM-EDS), Difraksi Sinar-X (XRD), kemudian uji korosi dengan metode polarisasi. Pada sampel belum terpakai diperoleh nilai laju korosi 0,0531 mm/py dan sampel terkorosi diperoleh nilai 0,1377 mm/py. Juga terbentuk fasa Fe<sub>3</sub>O<sub>4</sub> (magnetite), FeS (besi sulfida) dan SiO<sub>2</sub> (silika). Hasil data di lapangan berupa kondisi sekitar jalur pipa trunk line dan laju korosi yang dihasilkan akibat penurunan ketebalan menghasilkan data sisa umur pakai aktual yang dibandingkan dengan sisa umur pakai sampel hasil pengujian.

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### <b>ABSTRACT</b><br>

This research focused on the trunk line corrosion analysis that has caused pipe replacement within 8 years instead of 15 years design lifetime. Samples of API 5L Grade B material were analyzed with physical and mechanical tests using metallographic, tensile testing, chemical composition test, scanning electron microscopy-energy dispersive spectroscopy (SEM-EDS), X-Ray diffraction (XRD), then polarization corrosion test. On the new unused sample obtained corrosion Ade of 0.0531 mm/py and corroded sample obtained 0.1377 mm/py. Also formed phase Fe<sub>3</sub>O<sub>4</sub> ( magnetite ), FeS ( iron sulfide ) and SiO<sub>2</sub> ( silica ). The results of field data in the form of conditions around the trunk line area and the pipeline corrosion rate generated due to decreased thickness obtained the actual remaining life data compared with the remaining lifetime of the sample test