

**DGGE/QPCR ANALYSIS OF SEDIMENTS AS EVIDENCE OF
NATURAL ATTENUATION OF CRUDE OIL IN THE AMAZON RAINFOREST**

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An oil battery (Site) located in the Amazon rainforest experienced releases of crude oil that resulted in three oil filled lagoons. Aerial photographs from 1996 provided insight to the extent of the overall impact. More recent LandSat images from 2008 indicated a reduced impact and significant natural recovery of both indigenous and non-indigenous flora (cattails). A case was made to the national agency for limited aggressive remediation followed by natural attenuation and recovery. To make that case, five sediment samples were collected in the field from select locations along a transect in the main oil-impacted lagoon, a reference area (non-impacted) and one sample each from other crude oil-impacted areas. The samples were analyzed using quantitative Polymerase Chain Reaction (qPCR) and Denaturing Gradient Gel Electrophoresis (DGGE). The analyses were intended to indicate what effect (if any) the crude oil had on the indigenous microbial community and/or microbial activity at the Site. The analyses showed diverse microbial communities and enzyme activity in both the reference area and the most oil-impacted areas. This data suggests that the presence of the crude oil has not inhibited the growth or activity of these indigenous microbes and that active biodegradation is occurring in the impacted areas.

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