



Project Application : Telok Sengat Bio-Gas Capture Facility

Case History : POME Bio-Gas Project

Client : Verde Technical Resources Sdn. Bhd.

Owner : Boustead Estates Agency

Scope : DESIGN AND CONSTRUCT OF COVERED IN-GROUND ANAEROBIC REACTOR (C.I.G.A.R) FOR PALM OIL MILL EFFLUENT (POME) BIOGAS GENERATION AND EFFLUENT HDPE PIPING SYSTEMS AT TELOK SENGGAT, KOTA TINGGI, JOHOR DARUL TAKZIM.

CIGAR Pond Size : 75m x 50m

Completion : Year 2015



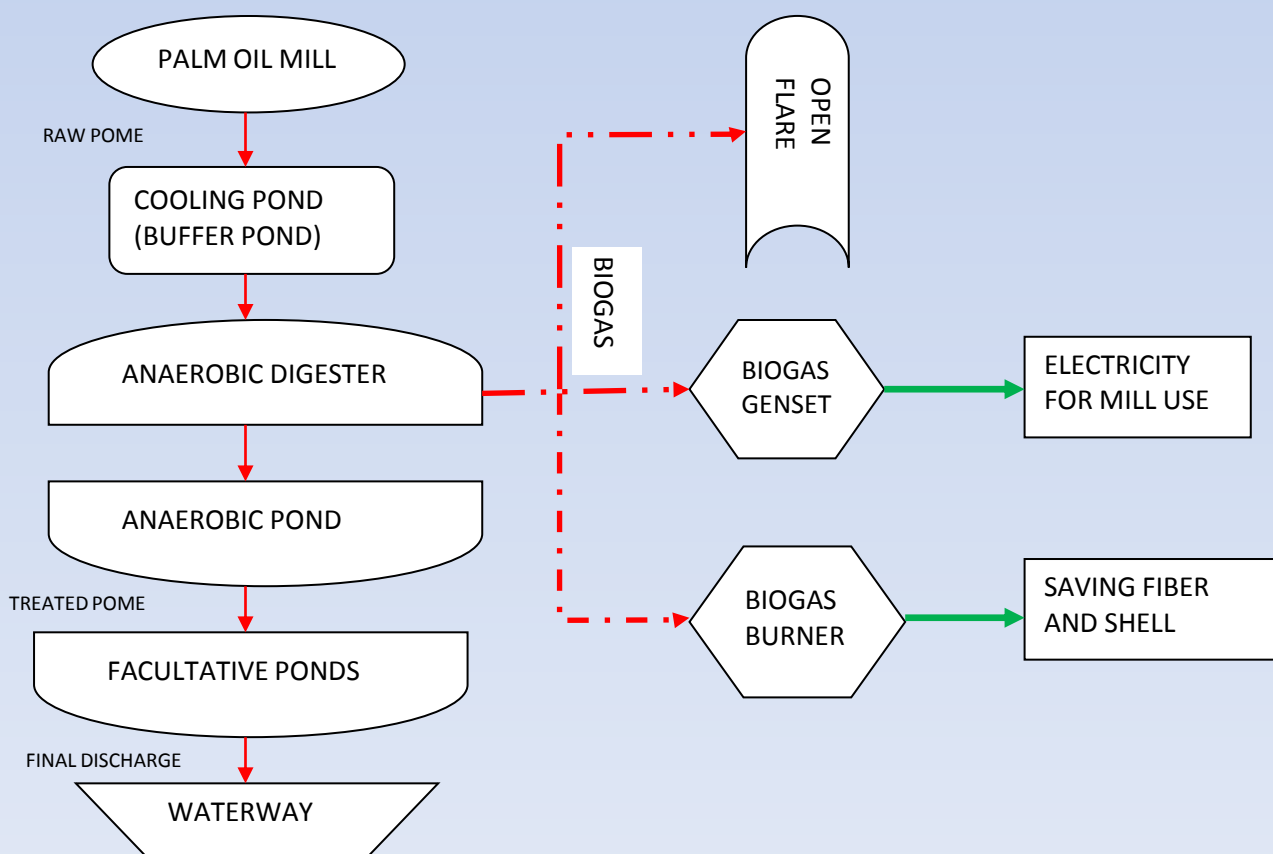
PROJECT DESCRIPTION:

The completed methane capture facility comprised of both the bottom HDPE liner and HDPE cover encompassing the POME in between these two liners thereby creating an anaerobic digester.

A customized system of HDPE piping was installed on the bottom liner inside the digester to remove the sludge from the anaerobic digester to the sludge collection pond and then, finally, released back into the existing treatment ponds system.

The biogas captured in the covered digester is transferred by negative pressure through the HDPE gas collection pipe from within the covered digester to be fed into a 600kWh gas engine for electrical generation and burner feedstock in the oven boiler. In the event when there is no electrical demand from the factory, the open flare unit will be activated to flare off the excess gas captured when the pressure on the CIGAR cover had surpassed a nominated safety setting point.

A schematic diagram of the facility taken from the project is shown below for reference:-





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Photographs of the Project.

Anaroebic Pond – 1.5mm thk HDPE Geomembrane Lining.



Site survey before construction.



Base and slopes lined with 1.5mm thk. HDPE Liner.



Gas Engine assembly inside gas engine room.



Completed cover with captured gas.



Open Flare system assembly beside AD pond.



Completed cover before captured gas.



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Completed sludge collection pond.



Completed sludge collection pond.



Gas pretreatment system.



Deployment of HDPE liner for Cover.



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