CASE STUDY

PROJECT	SEWAGE TREATMENT FOR ONSHORE GAS PLANT
PRODUCT	Membrane Bioreactor
INDUSTRY	Oil & Gas
LOCATION	Karratha, Western Australia

mak water
water | wastewater | sewage

BACKGROUND

A Gas Plant in Karratha - home to one of the most advanced, integrated gas production systems in the world, where LNG, domestic gas, condensate and LPG is produced, approached MAK Water to assist with a new sewage treatment plant. The sewage treatment plant was a part of a US$5 billion life extension program, to extend the life of the asset by 20 years.

MAK Water has been a long term and trusted supplier to the client; working cooperatively with their contractor during the budgeting phase, MAK Water was awarded the contract to design, manufacture, supply and commission the new sewage treatment plant.

SOLUTION

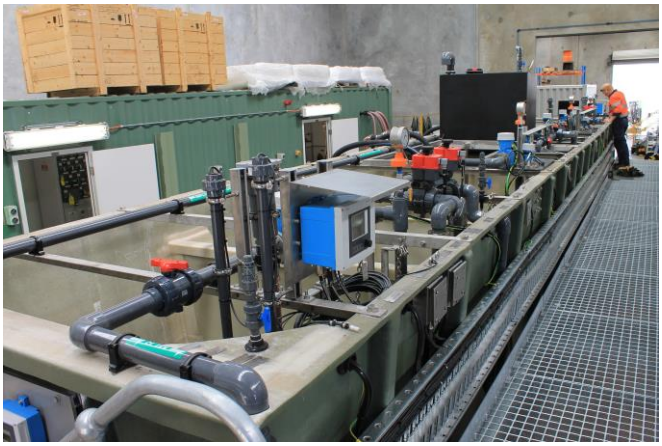
Sewage treatment plant:
Membrane bioreactor with 2 x 50 m^3/day trains.

ENGINEERING AND DESIGN REQUIREMENTS

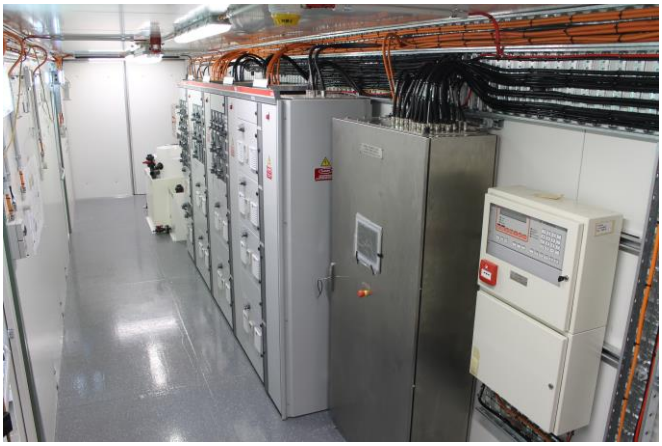
- HAZOP, safety in design, operability and constructability studies
- Detailed 3D modelling for human factors engineering
- Client specific drawing & data package, including material certificates/traceability
- Client preferred Form 4A/3B MCCs and PLCs

SEWAGE TREATMENT PLANT

- Inlet works/screening, with flow balancing, mixing and odour control
- Corrosion resistant FRP bioreactor, with aerobic, anoxic and MBR zones
- Containerised ancillary equipment and control system



Membrane Bioreactor (MBR) in MAK Water fabrication facility



Containerised ancillary equipment and control system

RESULTS AND BENEFITS

- Informed Buyer Model. A fit-for-purpose solution that complies with client specifications in a commercially sensible manner.
- Pre-tested, modular design. Plants were fully assembled and factory tested, and supplied with prefabricated interconnecting piping and cabling for easy site installation.
- Lowest operating cost. Plants were designed to minimise operator intervention, and fitted with remote monitoring and control capabilities.