

SIEMENS

Material Approval Request

Delimara	MT1001	MAR-014	05
Power Plant	Plant Code	UA	Contents Code
Block			Reg. No. / Revision

Company: Attard Bros. Co. Ltd

Product: Oil Separator

Manufacturers: **FM Environmental**

KKS: N/A

Element: 50UBH

Date of submittal: 03/09/2015, Rev05 13.10.15

Start execution: 04/09/2015

Rev.5: 19/11/15

	Yes	No	Remarks
Technical data sheet attached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	nil
Applicable standard attached	<input type="checkbox"/>	<input checked="" type="checkbox"/>	nil
Safety data sheet attached	<input type="checkbox"/>	<input checked="" type="checkbox"/>	nil
Sample available	<input type="checkbox"/>	<input checked="" type="checkbox"/>	nil

To be completed by Siemens:

Comments:

NIL

no comments;

	Yes	No	Remarks
Owner's approval required	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Approved	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



Contractor

Siemens

Owner/ AECOM

	Prepared by	Reviewed by	Accepted by	Accepted by
Company				
Name				
Date				
Signature				

Copies to:

Original to be filed by:

Item	Material/Equipment submitted	Specification ref.	BOQ ref.
	Oil/Water Separator		
a.	Oil/Water Separator Model: AquaBHDCE5006		
b.	Attachments 1. - Specifications: FM Enironmental Oil/Water separator 2. - Oil water separator drawings 3. - Oil Separator Alarm Device - Installation instructions and specifications		
Revision 5: 12/10/2015			



AquaBHDCE bypass separators and full retention separators, achieve two levels of final discharge into the drainage system. All our oil water separators conform to Environment Agency PPG3 requirements for wastewater treatment, and are designed as per EN858 standards for oil separators.

The bypass separator (Class 1 Discharge) is designed for larger hard standing areas susceptible to hydrocarbon spillages. It retains hydrocarbon contaminants that enter the separator in the first 10% of any storm and achieves a final discharge to surface water drain of less than 5mg/l oil to water.

The bypass separator (Class 2 Discharge) is as Class 1, except the final discharge is to surface or foul water drain and is 100mg/l oil to water.

The full retention separator is for more demanding applications such as fuel storage points, plant hire equipment yards and vehicle dismantling workshops where the risk of hydrocarbon spillages is greater. It is also available to achieve both Class 1 and Class 2 discharge options, as above.

Application

Designed for surface water applications, Interceptors remove pollutants from effluent and allow the cleaner water to be passed into a surface water drainage system.

Pollutants are retained for removal and disposal. Interceptors work by allowing the pollutants and water to naturally separate out from one another. Pollutants will float on the surface of the water and can then be drawn off. Silt will also settle within the unit and can also be drawn off. All units are manufactured to IS EN ISO; 9001:2008 and conform to European Standard PR EN 858 – 1 & 2.

2.1 Design Considerations

Decanter-separator bypass hydrocarbons, model AquaBHDCE Compact clarifier sludge and sands - Oil separator Class I, with by-pass integrated AquaBHDCE model for treatment of nominal flow rate and receiving a peak flow.

In summary, the proposed treatment line will consist of the following elements, key members for the proper treatment and water purification:

- By-pass flow or overflow.
- Decanter sludge and sand Chamber
- Hydrocarbon separator Chamber



2.1.4-Description of treatment and purification system

The system consists of the following elements

2.1.4.1.- Chamber decanter sludge and sands with integrated bypass

In this chamber there will be settling of solids in suspension contained in the flow. These materials, sediment at the bottom of this chamber, and will be removed when cleaning is performed.

2.1.4.2.-Oil separator Chamber

In this chamber water will be treated from the decanter, and will be separated from hydrocarbons and oil from water. In this we find packets tubular cells coalescing effect allowing droplets coalesce free hydrocarbons, according to recommendations of EN858, and equipped with automatic sealing device sealing invulnerable. Coalescing cells are composed of polypropylene block with a surface equivalent projected very high and favorable structure to the coalescence of the hydrocarbons .

3. INSTALLATION RECOMMENDATIONS

For movement and lifting, the tanks have points anchor for this purpose.

The tank has three supporting saddles and a Stainless Steel Strap for anchoring. The supporting saddles have perforations, for bolting them to the flat slab plinth and securing the anchorage strip.

In the installation location the type of terrain and the existence of vehicular traffic, or any other condition that may transmit loads on the surfaces of the deposits.

- Perform proper excavation for the tank, between 20-30 cm greater than the size of it, and with a maximum depth of 50 cm (for depths greater should check the type of (reinforcement)).
- After running the excavation will build a reinforced concrete slab HA-25, 15 cm thick with of 15-15-6 mesh to avoid differential seats in the support base.
- Install the item so that it is perfectly level, and fill with clean water until the level of and connect the output.
- Fill the side walls of the same material under the tank and compact manually to avoid there are gaps between the ground and the wall, use machinery, compaction, and use process small tiers from 20 cm to reach the appropriate level.
- In case of a high water table or sea level, the civil engineer should provide proper backfilling to counterweigh and upward forces on the tank.
- Build the manhole inspection and cleaning of the mouth by applying a concrete mass for support and brick walls (remember not to exceed 50 cm) and install cap registration.
- In case you are in vehicle traffic area, a constructed slab reinforcement at the higher which is suitable for the kind of traffic as the manhole cover is recommended.



Specifications

Model	AquaBHDCE5006
EN-858	Class 1
Length (m)	6
Diameter (m)	2.1
Inlet (mm)	300
Outlet (mm)	300
Capacity of Tank	15,700
Oil Storage Volume (litres)	3125
Sludge Storage Volume (litres)	4320
Nominal Flow (l/sec)	35
Weight of Tank Empty (kg)	910 kg
GRP Wall Thickness	7 mm



1. OilSET-1000 Oil separator Alarm Device

The OilSET-1000 level alarm instrument is specially designed for oil separators and grease traps. It indicates when it is time to empty the oil separator and thus prevent harmful hydrocarbon emissions to the sewer system.

SET-1000 Control Unit

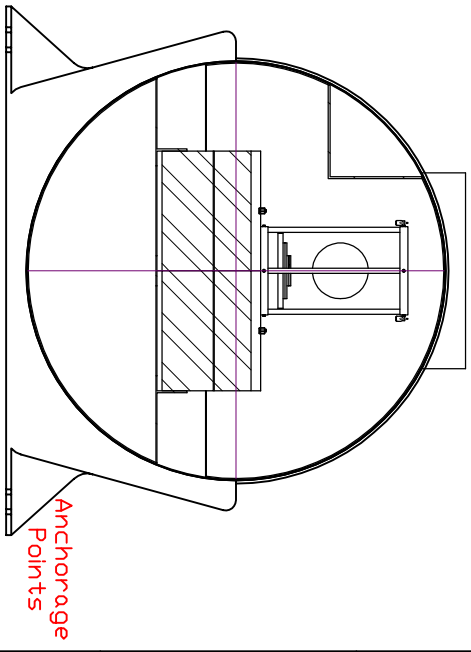
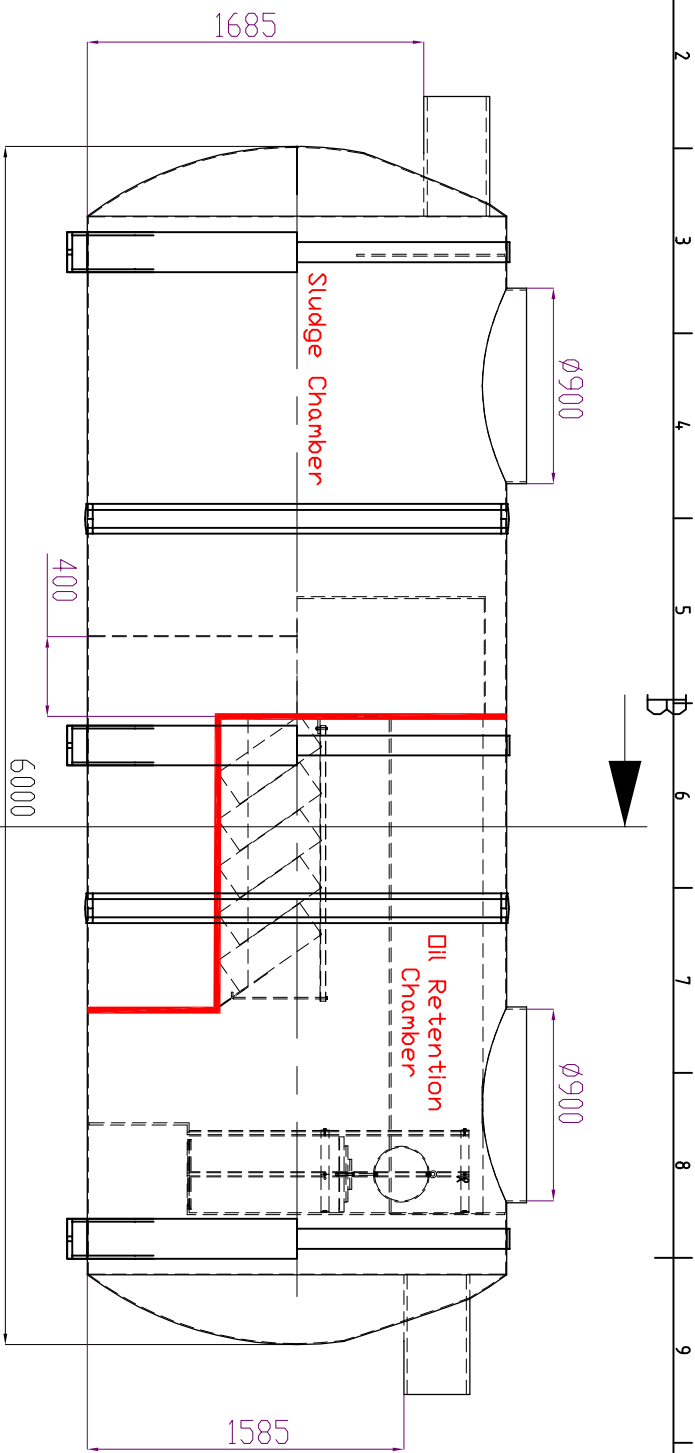
- Visible and audible alarm
- Test function
- Reset button
- Cable break and short circuit indication
- Two relay outputs
- Housing IP65
- Ex classification [EEx ia] II C
- ATEX approval Ex II (1) G

and

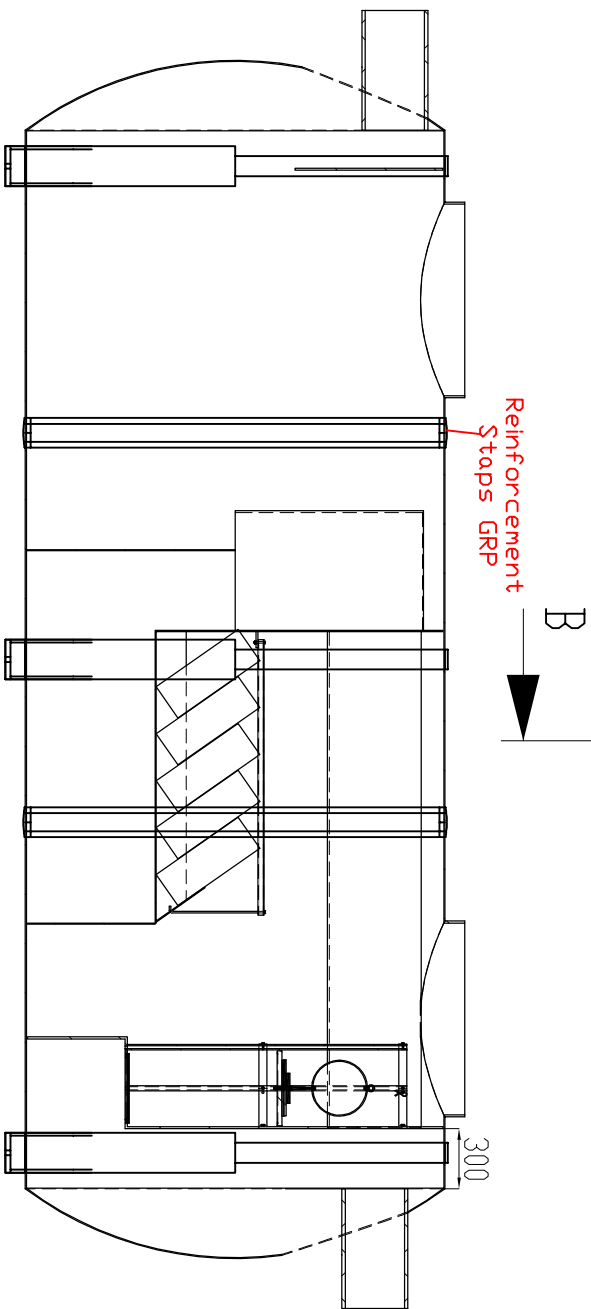
SET/DM3 probe

- Conductive probe
- No moving parts
- Standard cable length 5m
- Ex classification EEx ia II A T4
- ATEX approval Ex II 1 G

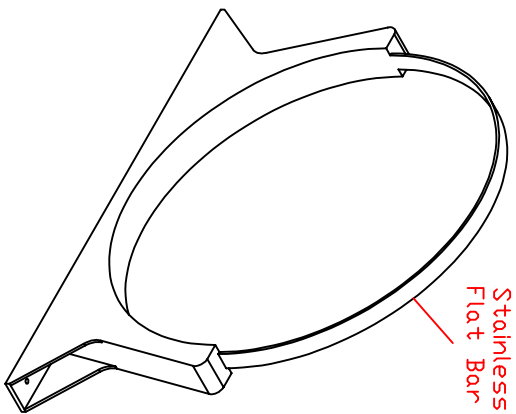
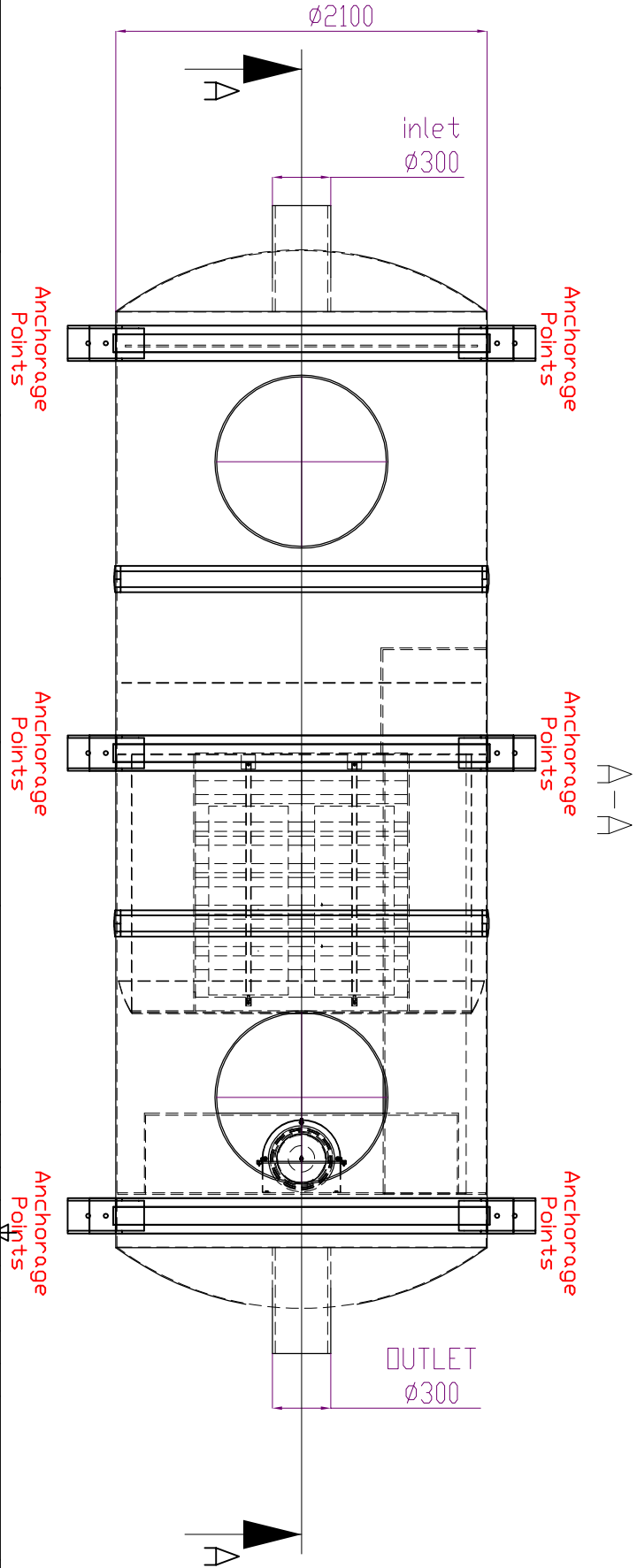




B-B



A-A



Stainless Steel Flat Bar strap

Item no	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
Designed by C Alford	Checked by HDS	Approved by - date 28/8/2015	Scale 1:1
FM Environmental (Malta) Ltd			HDS 50 L/S
			Edition 0
			Sheet 1/1



FM Environmental Ltd.
Glass Reinforced Plastic (GRP)
OIL INTERCEPTOR TANKS
OFFLOADING, INSTALLATION AND BACKFILLING INSTRUCTIONS
(PLEASE READ ON RECEIPT OF THE TANKS)

The following notes are intended for the guidance of Civil Engineering/Building Contractors installing the GRP tanks.

It is the responsibility of the client (or his representative) to verify that these guidelines or others are appropriate for the specific ground conditions and operational loads for each installation.

TECHNICAL DETAILS

Tank Model	Length(m)	Diameter(m)	Weight Empty (kg)	Weight Full (kg)
BHDCE50	6	2.1	1900	17,500

OFFLOADING

1. **Two lifting slings should be used for lifting the tank (see picture). The use of chains or other material that can easily damage the tank have to be avoided.**



2. Only off-load the tanks on even surface that are free from rubble/stones

INSTALLATION AND BACKFILLING METHOD

1. Excavate the hole and construct a level concrete base as per the drawing layout supplied. The concrete plinth should be able to take the loads when the tank are full with water
2. To avoid damage to the base of the tank ensure that the concrete base on which the tank is positioned is free from rubble and sharp stones and is as even as possible
3. The tank is equipped with saddles and in built stainless steel flat bar straps for anchorage to the flat bed, in case of any external bouyancy factors, like high level water table. The saddles have perforations
4. The tank must be gradually filled with water while backfilling. It is essential to ballast the tanks on the inside with water during backfilling in order to equalise internal/external pressures. Ensure that the water level inside the tanks is **between 200mm to 300mm above the concrete level** at all times.
5. When backfilling, a vibrating poker should not be used as this may damage the tank
6. Backfilling should be performed equally around all tank sides for up to 200mm approximate thickness. This should be done in small steps (up to 300mm lifts) to avoid possible tank

movements. Remember to **keep the water level in the tanks marginally above the concrete level at all times**. Backfill up to the top of the tank.

7. If tanks are installed in a vehicular traffic area, a constructed slab re-inforcement, suitable for the kind of traffic would be required above the tank.

SPECIAL NOTES

Under **NO** circumstances should the tanks be:

- Filled completely with water without backfilling
 - Installed without having a full concrete backfill around them
 - Installed fully or partially above ground (unless agreed with FM)
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Preparation of Plinth and surrounding wall if necessary

