PROPOSED IN-GROUND STORMWATER TREATMENT UNIT
P&O PORT BOTANY SHIPPING TERMINAL
PROJECT DESCRIPTION PAPER

Background

P&O's Port Botany Shipping Terminal is located at 42 Friendship Road, Matraville and is identified as Lots 1-13 / DP 260692. P&O Ports lease the 39ha site from Sydney Ports Corporation for the operation of a shipping terminal for the import and export of shipping cargo. The site has been operated as a shipping terminal since its initial development in the 1970s.

Prominent structures and features on the shipping terminal site include an administration building, maintenance workshops and facilities, sheds, container stacks and operational equipment including quay cranes, gantry cranes and container forklifts. The attached site layout plan (JRC Drawing No. 034-L1-01) shows the general arrangement of the terminal.

The majority of the existing site is paved. The site's existing in-ground stormwater system conveys surface water runoff through a system of pits and pipes to the waters of Brotherson Dock. Stormwater is generally not treated prior to discharge into Brotherson Dock.

P&O have recently conducted a review of the terminal to identify any areas which pose significant potential risk in terms of contamination to surface water runoff. The review identified an area of potential risk in the southeast corner of the site, which incorporates the forecourt area of the maintenance garage and areas directly adjacent to the operational equipment washbay and refuelling areas. Although the washbay and refuelling areas are covered and bunded, the potential exists for minor amounts of contaminants to be tracked out of the bunded areas on the tyres of operational equipment. Due to activities in the identified area, it is also highly trafficked by trucks and operational equipment including forklifts, inter-terminal vehicles and the like, which contributes to the risk of contamination of surface water.

Proposed Development Details

P&O propose to install a pre-fabricated "SPEL Stormceptor" by-pass separator unit within the identified area to treat stormwater prior to discharge to Brotherson Dock. The Stormceptor unit is to be installed in-ground and will treat runoff water collected from an area of approximately 10,000m^2. The proposed location of the unit is shown in attached JRC Drawing No. 034-L1-02.

Construction works will involve excavation, placement of the treatment system, connection to existing pipes, backfilling with concrete and crushed rock and reinstatement of the pavement above. The estimated cost of the proposed works is $150,000.

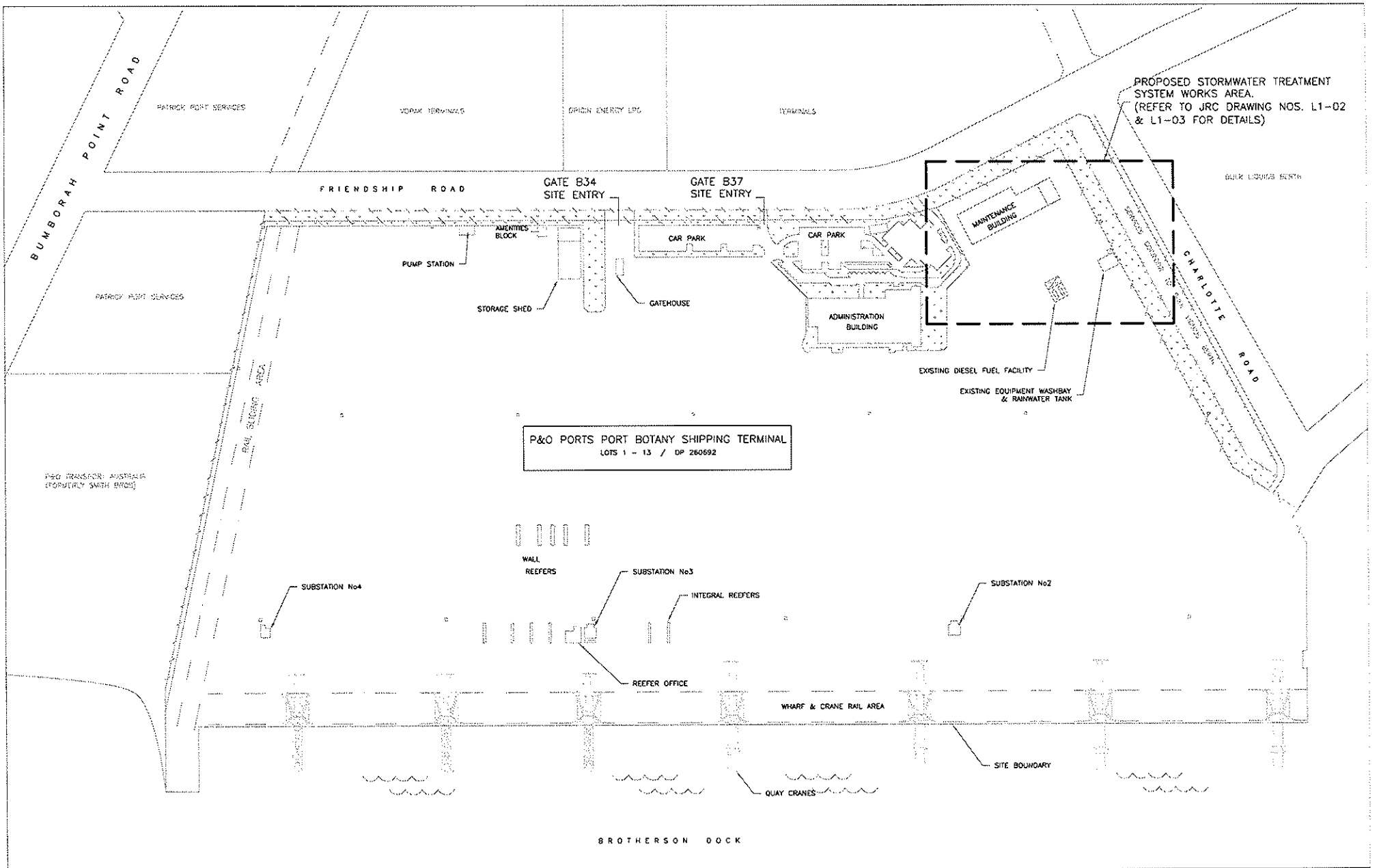
The Stormceptor unit incorporates a primary settling chamber for removal of silt/sediment and a main separation chamber (secondary chamber) containing a stainless steel coalescer unit which removes oils/hydrocarbons to 5mg/L or less. The tank shell is constructed from fibreglass in accordance with *AS2634:1983 Chemical plant equipment made from glass-fibre reinforced plastics (GRP) based on thermosetting resins.* The proposed unit is approximately 6.2m in length and 2.7m in diameter. Product information for the Stormceptor is attached.

Proposed Operation

The Stormceptor will operate continuously, whilst water is flowing through the stormwater system. In times of heavy rain and resultant high flows, the unit contains a by-pass chamber which allows stormwater to by-pass the secondary chamber and flow directly to the outlet. The stormwater released to by-pass is deemed to be sufficiently clean, as contaminants are generally captured in the first portion of runoff collected, effectively cleaning the pavement surface.

The Stormceptor will be maintained by regular pump-out of sludge and oil films by a licensed waste contractor. The Stormceptor will be fitted with an oil alert probe which will warn of high oil levels within the tank, alerting maintenance staff to the requirement for pump-out of the tank.

Installation of the tank will create a positive environmental affect by significantly improving the quality of stormwater runoff discharging into Brotherson Dock. The proposal will not create any ongoing detrimental visual, noise, air, water quality or other environmental impacts.



REV	DATE	REVISION DETAILS	BY	Ver.	App.
A	20/9/06	PRELIMINARY	CB	DJM	DJM

REVISIONS AND ISSUES

Prepared By CTB	Signed	Date 20/9/06	Scale NTS A3
Verified By DJM	Signed	Date 20/9/06	
Approved By DJM	Signed	Date 20/9/06	
Horizontal Datum			
Vertical Datum			

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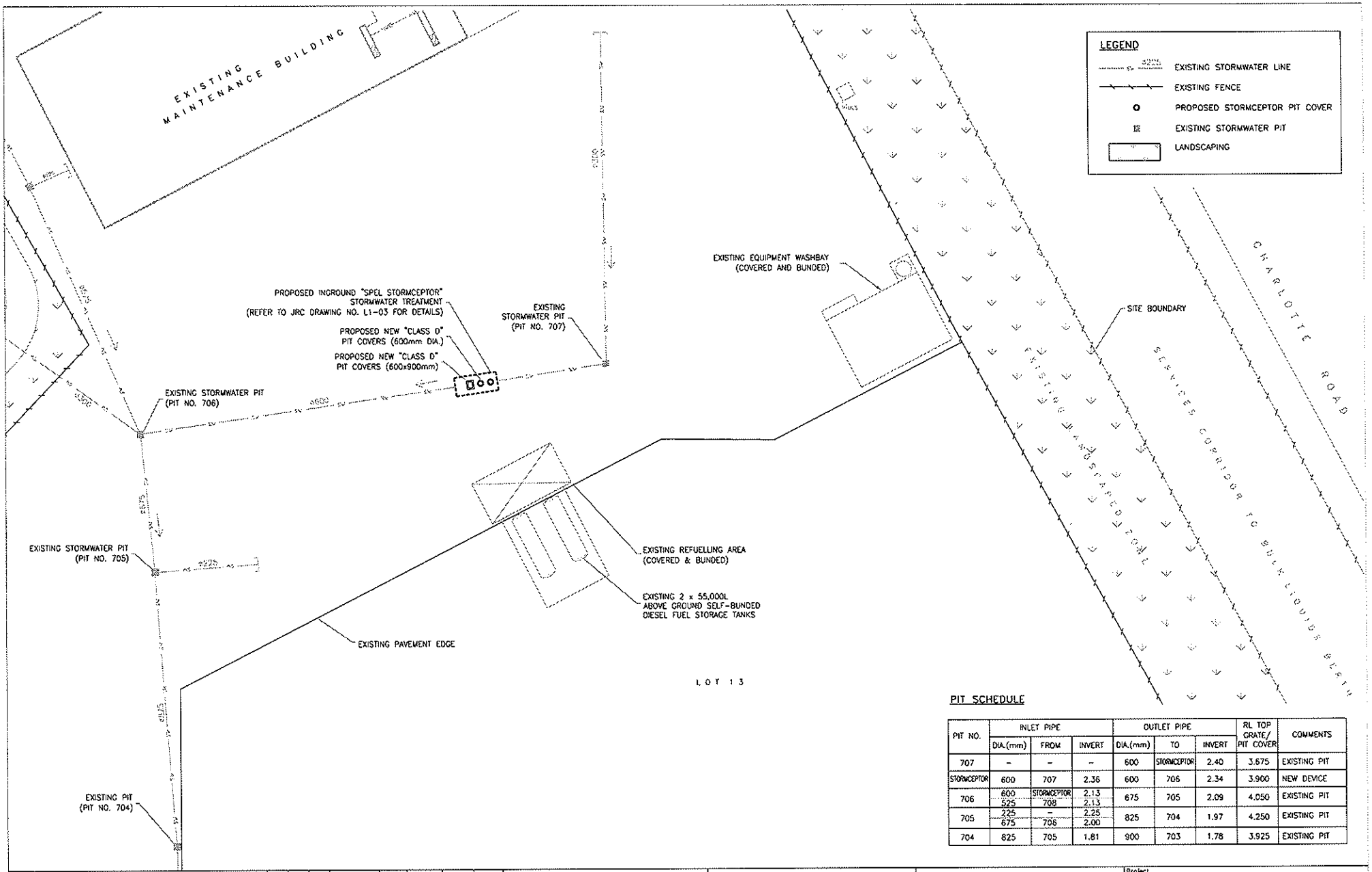
Project
P&O PORT BOTANY TERMINAL
STORMWATER TREATMENT SYSTEM

Drawing Title
SITE LOCATION & LAYOUT

Status	Project No.	Drawing No.	Rev.
Preliminary	034	L1-01	A



PIT SCHEDULE

PIT NO.	INLET PIPE			OUTLET PIPE			RL TOP GRATE/ PIT COVER	COMMENTS
	DIA.(mm)	FROM	INVERT	DIA.(mm)	TO	INVERT		
707	–	–	–	600	STORMCEPTOR	2.40	3.675	EXISTING PIT
STORMCEPTOR	600	707	2.36	600	706	2.34	3.900	NEW DEVICE
706	600 525	STORMCEPTOR 708	2.13 2.13	675	705	2.09	4.050	EXISTING PIT
705	225 675	– 706	2.25 2.00	825	704	1.97	4.250	EXISTING PIT
704	825	705	1.81	900	703	1.78	3.925	EXISTING PIT

REV	DATE	REVISION DETAILS	BY	Ver.	App.
A	18/10/06	PRELIMINARY	CB	DJM	DJM

REVISIONS AND ISSUES

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Project
PORT BOTANY TERMINAL
STORMWATER TREATMENT SYSTEM

Drawing Title
PROPOSED LAYOUT - OPTION ONE

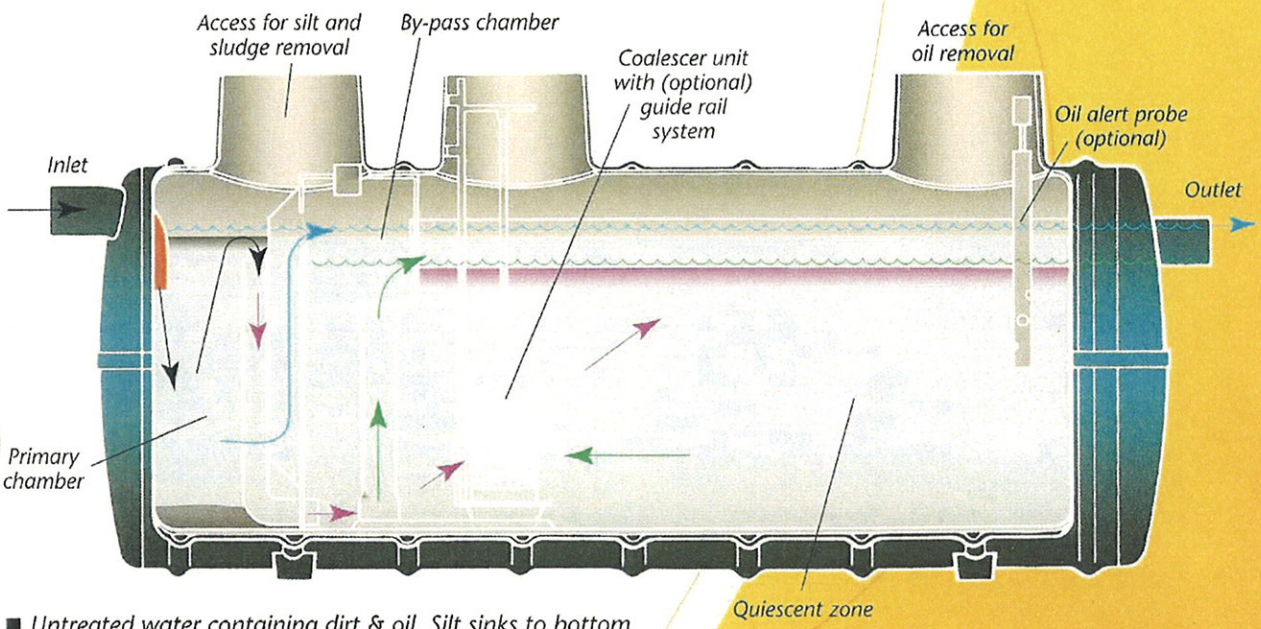
Status	Project No.	Drawing No.	Rev.
Preliminary	034	L1-02	A

KWIKFLO ENVIRONMENTAL

SPEL Stormceptor Class 1
By-Pass Separator

Class 1 Stormceptors are designed to achieve a concentration of less than 5mg/litre of oil under standard test conditions. A typical application would be the treatment of oil droplets contained in run-off which is reasonably predictable, ie medium risk. Applications would include industrial development sites and airport runways. These units incorporate the same by-pass system as the Class 2 unit but have the added advantage of stainless steel coalescer units with high volume reticulated foam inserts to achieve a lower oil concentration. The coalescers are incorporated into the main separation chamber and are easily removed for cleaning.

Class 1 Stormceptor used to treat stormwater run-off from a central business district before entering the river.



- Untreated water containing dirt & oil. Silt sinks to bottom
- Low Flow levels & direction
- Water containing oil. Oil floats to surface
- By-pass (high flow) levels & direction

Features

- Good access to all parts for desludging
- Large, fully accessible primary chamber for silt capacity and removal
- Dip pipe inlet for minimum turbulence and to prevent inflammable vapours passing upstream in drainage system
- Coalescer unit/s incorporated in the main separation chamber which reduces hydrocarbon to 5mg/litre or less
- Lifting cables for coalescer insert available as an optional extra
- Performs according to European Standard BS EN858-1
- High performance, low maintenance unit over a long life span
- Tank shell designed to conform to AS2634-1983
- Tank exterior has "flow coat" water penetration barrier