David Wills and Associates
Consulting Engineers

NAVAL BASE CONCRETE

10,000 LITRE PASSIVE GREASE ARRESTOR UNIT INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

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DOCUMENT CONTROL FORM

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PREPARATION, REVIEW AND AUTHORISATION

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1.0 BACKGROUND

Discharge directed into the Water Corporation's wastewater collection system is required to meet water quality standards to protect the wastewater system from incompatible materials that can cause odorous and toxic gases, corrosion, blockages and wastewater overflows. This has potential negative impact on the Water Corporation's ability to provide customers effective wastewater services.

The purpose of the use of a grease arrestor unit is to remove grease, fats, oils and settleable solids from discharge into the Water Corporations wastewater collection system.

The grease arrestor units reduce the amount of greasy waste flowing into the wastewater system, by allowing fats, oil and grease to rise to the top and solids to sink to the bottom. They need to be pumped out according to the frequency shown on the trade waste permit by a licensed liquid waste contractor.

2.0 INSTALLATION GUIDELINES

The 10,000 litre passive grease arrestor unit shall be installed in accordance with David Wills and Associates drawings 18150.01-S-100 and 18150.02-S-100 attached in Appendix A. The grease arrestor unit has four 95-foot anchor lifters which shall be utilized to transport the unit.

2.1 Backfill and Foundation Requirements

Grease arrestor units shall be installed on a stable sand base.

The foundation below the grease arrestor unit base shall be compacted to achieve a minimum compaction of 92% Maximum Modified Dry Density (MMDD). This foundation shall be free of rocks, vegetation and other deleterious matter.

Installation of the 10,000 litre passive grease arrestor unit shall not exceed the installation depths specified on David Wills and Associates drawing 18150.02-S-100 in Appendix A.

Backfill surrounding the grease arrestor unit shall be sands only.

Backfill around the grease arrestor unit shall be compacted to achieve a minimum 5 to maximum 12 blows per 300mm depth to a total depth of excavation when tested with a standard Perth Sands Penetrometer (PSP). This backfill shall extend a minimum of 600mm horizontally, or suitable distance to allow use of a compactor, from the outside perimeter of the unit for the full height of the unit.

Backfill shall be placed and compacted in layers of 300mm around the grease arrestor unit. Adequate compaction shall be achieved universally around the unit, and if required, water shall be added during compaction to assist the process.

2.2 Maximum Allowable Loads

Grease arrestor units are provided with a reinforced concrete cover and three 600x900 cast iron access lids having a load rating of Class D, and can be installed in carriageways of roads and areas open to commercial vehicles (heavy duty). The maximum nominal wheel load shall not exceed 8,000kg.

All access lids to conform with latest version of AS3996 Access covers and grates.

3.0 HANDLING AND LIFTING PROCEDURES

Transport of the passive grease arrestor units shall be undertaken using safe practice. Four lifting points are cast into the units, two points on each long side wall, which are rated to 5 tonne each. Lifting chains or straps shall be connected to all four lifting points when moving the units.

Appropriate lifting equipment shall be utilised to lift these units, having adequate tensile capacity ratings. Each grease arrestor unit weighs approximately 12 tonnes, see David Wills and Associates drawing 18150.02-S-100 for individual component weights.

4.0 OPERATION GUIDELINES

A grease arrestor is a holding tank with a number of baffles required to be installed as a trade wastewater pre-treatment device in food preparation processes. A grease arrestor is also known as a grease interceptor, grease trap or food and oil interceptor.

Grease arrestors slow the flow of warm or hot greasy wastewater from food preparation areas and commercial kitchens and allows the wastewater to cool. As the water cools, the suspended fats, oil and grease (FOG) separate and float to the top of the unit. The solid waste settles on the bottom of the grease arrestor. The cleaner and cooler water is then discharged to the public sewer main without a risk of the system being blocked.

5.0 MAINTENANCE MANAGEMENT

The passive grease arrestor unit should be pumped out at intervals as:

- determined during Water Corporation assessment of the trade waste application; or
- when the floating and settled solids exceed 30% of effective capacity of the tank; or
- when wastewater quality exceeds Water Corporation acceptable criteria on two consecutive samples taken 24 hours apart; or
- there are gross solids or oil and grease visible in trade waste sample collected downstream of the grease arrestor.

It may be necessary to re-assess the pump out intervals during the initial use of the unit to determine how regular pump outs are required. The re-assessment is to be undertaken by Water Corporation upon a customer's formal request. Water Corporation re-assessment service fee will be applied.

Pump-out of grease arrestors and disposal of the captured sludge is not provided as part of the Water Corporation service. Separate arrangements for grease arrestor pump-out through a licensed waste cartage contractor will be required.

The pumped out solution shall be disposed only at an appropriate waste treatment and disposal facility.

The liquid waste carrier, after obtaining the consent of the customer, must notify the Water Corporation of the cleaning of a grease arrestor within 7 days of the clearance date.

6.0 TANK MANUFACTURER CONTACT INFORMATION

Tanks are manufactured and supplied by Naval Base Concrete:

Address: 23 Beach Street Kwinana, Western Australia, 6167
Phone: (08) 9439 3933
Website: http://www.navalbaseconcrete.com.au/