

GUIDELINES FOR LIQUID WASTE DISCHARGE AND MECHANICAL WASHDOWN BAYS

BACKGROUND

The City's Health Services assesses applications for the installation of a vehicle/engine parts wash down bay that proposes to discharge low volume liquid wastes to on-site soak wells or leach drains.

This is in accordance with the City of Cockburn's Health Local Law No 34 which states:

“Disposal of Effluent from small scale Mechanical Equipment Wash Down Bays

Liquid waste from small scale mechanical wash down bays shall be:

- (a) discharged to the sewer subject to approval of the sewerage service provider; or*
- (b) where sewer is not available*
 - (i) disposed of on-site as approved by the Principal Environmental Health Officer; or*
 - (ii) disposed of offsite, in accordance with the requirements of the Department of Environmental Protection – Division of Waste Management.”*

Where sewer is available, application for an installation of this type must be made to the Industrial Trade Waste division of the Water Corporation.

The Department of Environment and Conservation (DEC) Pollution and Licensing division do not have authority in the case of small scale effluent discharge where the premises is not a licensed premises.

ON-SITE DISCHARGE OF LIQUID WASTES

Approvals by the City for on-site discharge are based primarily on whether the proposed treatment system will produce an effluent that meets the **discharge water quality criteria** required by the DEC and the Department of Water.

A summary of these criteria is provided below. In addition, a list of publications which may also be informative for the design of your treatment system is provided at the end of this document.

1. A mechanical wash down bay proposal must also effectively address the following general wastewater management principles for industrial premises discharging oils and petrochemical liquid waste.
2. No waste water flows should be allowed to enter stormwater drainage and discharge directly into the environment.
3. All paved areas where liquid wastes are likely to accumulate should be adequately covered to protect them from stormwater run-off.
4. A solvent-based cleaning system for mechanical parts should recycle the cleaning solvent. Parts should not be doused in kerosene or similar and hosed down on driveways etc.

5. The run-off from steam cleaning automotive parts should be directed to a petrol/oil separator system and the oil regularly removed for recycling.

Only quick break degreasing compounds should be used for biodegradability and also for compatibility with plate separator systems. Wastewater containing emulsifiers (degreasers) and oil/grease suspensions should not be passed through triple interceptors or other devices as the resulting oily water will pass through straight to the soak wells. Such emulsified waste water may need further treatment on site in a suitable chemical treatment system in order to break the degreaser/oil bond and allow the oil droplets to agglomerate.

Liquid waste disposal protocols

The following protocols have been established when considering an application for an oily-water discharge to soak wells via a petrol/oil separator system.

1) Sewer connection

Connection to sewer where available is the most desirable situation and is subject to the approval conditions of the Water Corporation Industrial Trade Waste division.

2) Soak Well Discharge *within* the Resource zone

Discussions with the Department of Water have established that any soak well or leach drain in the **Jandakot Resource zone** which is intended to be used for oily water discharge **will not be approved**.

Anyone who has applied to install a petrol/oil plate separator system in this area will be expected to install a holding tank to be pumped out as necessary.

3) Soak well Discharge *outside* the Resource zone

For industrial properties outside the Resource zone, the Department of Water will support approval for discharge to soak wells provided it complies with the “*Water Quality Protection Note – Mechanical Equipment Wash-down*” requirements which are as follows:

- a. A minimum vertical separation buffer of 1.5m to the *maximum (wet season) groundwater table*. (c.f. *City of Cockburn Health Local Law 35 which is more stringent and requires a minimum of 1.2m above highest known water table*)
- b. Water collected from the wash down pad should initially discharge into a sediment trap for settling and removal of soils and heavy contaminants. The trap should provide a 1 hour minimum water detention capacity under peak flow conditions.
- c. If quick break cleaning agents are used, then any oily waste emulsion should pass into a de-emulsification basin, to allow for natural emulsion breakdown. The water should then be transferred to a gravity oil separator (inclined plate or similar).
- d. Steam cleaning or use of quick break detergent is recommended for cleaning mechanical equipment – however, where organic solvents have been used, artificial methods may be needed before oil separation occurs (such as acidification and flocculant addition method as described above).

Waste Water Quality

1) Discharge Criteria

The following waste water quality criteria are drawn from the “Indicative Wastewater Discharge Criteria”, Table 1, **Mechanical Equipment Washdown - WQPN68** Department of Water. In all cases, applicants will be required to satisfy the City that these criteria can be achieved before approval to discharge on-site will be issued.

- **PH** – in the range of 5.5 to 8.5
- **Salinity** measured as Electrical Conductivity less than 1800 uS/cm
- **Surfactants** should not exceed 5mg/L
- **Total Petroleum Hydrocarbons** should not exceed 15 mg/L.
- **Benzene, toluene, ethyl benzene & xylene** should not exceed 10 micrograms µg/L (cumulative maximum).
- **All other toxic soluble contaminants** should not exceed ten times the guideline criteria or investigation trigger for local water values as published in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000*

2) Testing

- General Maintenance and inspections on the system should be performed weekly.
- The waste water system mechanical operating performance should be tested quarterly.
 - All inspection results, start up analytical data etc should be recorded in a log book, and data kept for 2 years.
 - Where required by regulatory authorities, the site operator should take representative samples at least 6 monthly and have analysed by a NATA approved laboratory. The analysis shall be compared to the discharge water quality guidelines stated above (Indicative Wastewater Discharge Criteria, Table 1, Mechanical Equipment Washdown – WQPN68 Department of Water).

This document shall be considered to be the City of Cockburn’s conditions of approval for “Installation of Mechanical Equipment Washdown Bays “

References

1. Department of Water, **Mechanical Equipment Washdown - WQPN68**, Water Quality Protection Note.
Available via www.water.wa.gov.au
2. Water Corporation 2007, **Detailed Acceptance Criteria – IW PUB06**, Industrial Waste Information Brochure.
Available via <http://www.watercorporation.com.au/industrialwaste>
3. Water Corporation 2005, **Industrial Waste Typical Drawings – IW PUB07**, Industrial Waste Information Brochure.
Available via <http://www.watercorporation.com.au/industrialwaste>