

Environmental Audit Committee

Hand Car Washes Inquiry

Written evidence by the Chartered Institution of Water and Environmental Management

Background to CIWEM

1. CIWEM is the leading independent Chartered professional body for water and environmental professionals, promoting excellence within the sector. The Institution provides independent commentary on a wide range of issues related to water and environmental management, environmental resilience and sustainable development.
2. CIWEM welcomes the opportunity to respond to Environmental Audit Committee on its inquiry on hand car washes. This response focuses on the environmental impacts component of the inquiry's terms of reference.

Summary

3. There is a lack of data on the extent of unlicensed car washes. Given their smaller, more mobile nature, hand car washes are likely to be far more prone to unlicensed activities. We would recommend a limited sample survey into the extent of this problem.
4. There is a range of potentially toxic substances within wash water, including acids, oils and substances which will increase the nutrient load of receiving waters without treatment. Where operations are properly managed and permitted, we do not consider that the environmental impact of hand car washes is particularly great as wash water should be properly discharged and can then be treated effectively. The main risk occurs where wash water is discharging into surface water drains, or into inappropriate sustainable drainage systems (SuDS).
5. Many surface water drains discharge to minor urban watercourses, with little dilution, particularly in dry weather. Car wash impact on water quality and ecosystems is more likely to have significant impact in such instances.
6. We consider that although pollution associated with hand car washes is relatively minor compared to some other types of pollution, it is still something that needs to be prevented due to its ability to have impacts at the local level.

Response to inquiry questions

How does the environmental impact of hand car washes compare to that of automatic car washes? What steps have been taken to reduce their environmental impact and use water more sustainably?

7. The environmental impacts of automatic car washes have the potential to be far lower than those of hand car washes because they are typically larger installations which, with up to date technology can recycle virtually all the water they use. Furthermore, due to their size they are unlikely to be unapproved installations, unlike some hand car washes, therefore will almost certainly be appropriately permitted and have approved drainage installations to the foul sewer.
8. Permitted hand car washes are commonly located at petrol stations and shopping area car parks. Petrol stations are almost certainly not a problem as they should already have suitable controlled drainage in place. Likewise, there is no great cause for concern regarding drainage to foul sewer (although it is important that water companies have been properly consulted if acids and alkalis are being put into their systems). As such, the greatest risk relates to businesses in car parks and similar sites which drain to surface waters.
9. The main drainage systems for hand car washes will involve the following:
 - Impervious deck connected to gully pot system and surface water discharge.
 - Impervious deck connected to combined sewer system.
 - Impervious deck connected to sump/soak away.
 - Impervious deck connected to interceptor with discharge to surface waters.
 - Permeable deck with Sustainable Drainage Systems (SuDS) infiltration to soak away or permeable strata.
10. The potential environmental impacts of these approaches are varied, as follows:
 - Gully pots are probably the most robust system. However, if the majority of car wash run-off is focused in one area, there is a probability that the surfactant will cause the trap in those gully pots to fail and discharge emulsified oil. Maintenance of pots at an increased frequency may offer a solution, but not during heavy rainfall (when dilution will be more effective).
 - Oil escaping into combined systems, whilst having high dilution, could impact tertiary treatment beds at a sewage treatment works.
 - Sumps and soakaway arrangements rely upon an effective surface area to enable infiltration to take place (unless it is a sealed sump). Oil and emulsions can cover these surfaces and render them less effective. Sealed sumps may require regular emptying, where the oil/water mix can be classified as hazardous waste.

- Because of the surfactants in car washes, interceptors can become less effective or even ineffective due to emulsification of the oil.
11. In the case of permeable pavements, it is likely that this would be classed as diffuse pollution (though to our knowledge there is no data to indicate how big an urban diffuse pollution problem this actually is). Surface water drains are a major source of urban diffuse pollution. In all cases, oil can be both a pollution and a health problem.
 12. There is little regulatory control over surface water drains and their contents in practice. Most are owned by local authorities as highways authorities. Regulatory control over surface water sewers is normally effected at planning and/or construction stage, normally via Building Control.
 13. There remains significant institutional ignorance of the exact position and condition of surface water drains. When the water industry was privatised, the government at the time proposed to require the water companies to produce accurate sewerage maps. Unfortunately, this was never undertaken as proposed.
 14. In many (possibly the majority) of cases a planned surface water discharge to controlled waters is discharged instead into the public foul sewer. Until recently, water companies were obliged to accept these discharges. The Highways Agency owns and manages the trunk road drainage systems to a good standard.

What chemicals are used in hand and automatic car washes and in what quantities? How should they be disposed of? What are the effects of working with these chemicals on human health and the natural environment?

15. Car wash effluent generally contains phosphates, detergents, oils, silts/sediments, traffic film remover, rubber, copper and other metals.
16. These pollutants can have a range of direct and indirect impacts, depending on the volume and frequency of discharge and whether this is a discharge straight to a watercourse or via SuDS. Discharges via SuDS might not reach the watercourse initially and many pollutants may get filtered out. However, over time this could potentially lead to contaminated sediments accumulating in the SuDS. This could either lead to contaminated land which would need treatment, increased risks to groundwater if there is a hydrological connection, or greater risk of pollution to watercourses as a result of a pulse of polluted sediment getting flushed downstream during a storm event, creating a toxic environment to aquatic life.
17. The level of pollution risk is likely to be linked strongly to site specific issues and local watercourses, with the biggest risk being to pH, though discharge of acids or alkalis to watercourses will have different impacts depending on the location and characteristics of the receiving water. For instance, discharges of acids into chalk streams will have a far greater impact than if the same discharge was made into an upland stream coming off a coniferous forest which is already acidic. Anything that could alter the pH balance of a river or lake could have significant implications on fish as different species are sensitive to different water pH (e.g. significant changes in a

salmonid river could have a greater impact than, say, in the lower reaches near tidal waters).

18. The exact impact is difficult to quantify as to our knowledge none of those chemicals which are involved with car washing have Environmental Quality Standards (EQS) and are not included as Priority Substances under the Water Framework Directive (WFD).
19. We would suggest that in addition to the direct toxicity of certain components of wash water to ecology, a further potential issue could be nutrient enrichment of receiving watercourses. Detergents and phosphoric acid could lead to an increase in nutrients in the watercourses leading to localised eutrophication, which could in turn either 'seed' issues further downstream or create conditions not appropriate for good water body status under the WFD. A further additional source of nutrients may be the use of potable (tap) water which will be elevated in phosphates due to water companies dosing with phosphate to address plumbosolvency (lead pollution from pipes). Theoretically, the combined impact of a lot of small discharges could start to have impacts on local ecology.
20. Overall the WFD states that: *"Member States should adopt measures to eliminate pollution of surface water by the priority substances and progressively to reduce pollution by other substances which would otherwise prevent Member States from achieving the objectives for the bodies of surface water."*
21. Based on this, although many small discharges might not have measurable impacts (at least beyond the individual site level and so might not be seen at the water body level) a proliferation of unregulated discharges would go against the spirit of the WFD at the very least.
22. Many surface water drains discharge to minor urban watercourses, with little dilution, particularly in dry weather. Car wash impact on water quality and ecosystems is more likely to be visible / detectable in dry weather. Therefore, all car wash business should be required to demonstrate that their effluent is either directed to foul sewer, or to an approved infiltration SuDS.

What regulations are hand car wash operators subject to regarding their impact on the environment and the use of chemicals? Who enforces these? How effectively?

23. The Environment Agency is the primary body in England with the duty to tackle pollution. It is able to prosecute operators for causing pollution, serve S161 Anti-Pollution Works Notices under the 1991 Water Resources Act, Environmental Permitting Regulations Notices to protect surface water and groundwater, and will also offer advice and guidance to operators to help to prevent pollution. However, obtaining the evidence to regulate and potentially prosecute against small unpermitted operations can require a not insignificant resource.
24. Local authorities and local planning authorities have responsibilities for activities that require planning permission and have powers under the Building Control Act to improve or approve drainage. As with the Environment Agency's challenges in enforcing against diffuse pollution incidents, local authorities may not be sufficiently

resourced to monitor the emergence and operations of small, non-permitted washes. Water and sewerage companies issue trade effluent consents to discharge to their sewers.

25. Under the Environmental Permitting Regulations, discharges from hard standing areas such as car parks are exempt from needing a permit so long as their discharges only consist of 'unpolluted' surface water (i.e. rainwater). In most cases this is likely to require suitable drainage or primary treatment e.g. class 1 interceptor for oils and suspended solids, or SuDS. The addition of effluent from hand washes would mean that it is no longer unpolluted and should be classified as a trade effluent and therefore need a permit.
26. We understand that there is not a very significant body of evidence concerning the extent of unlicensed hand car washes and would suggest that a limited sampling study would be the best way to identify the scale of the problem.

What role should the owners of premises on which hand car washes are operated have in ensuring their environmental impact is minimised? What legal duties are they under?

27. Private developers e.g. trading estates or supermarkets may (but may not) own the surface water drainage systems for their development.
28. Environmental regulators have powers to require a water discharge permit for surface water discharges deemed to pose a risk to the environment. Persons causing a pollution of controlled waters via a surface water sewer are liable to prosecution if the environmental regulator can collect sufficient robust evidence. In practice, this usually involves a lot of manhole lifting.
29. We recommend that all car washes should be licenced by the local authority or environmental regulator. Licence requirements must include accurate information on the wash water disposal route. Infiltration SUDS may be sufficient amelioration, depending on the content and volume of the wash water.