

THOUGHTS ON GREY WATER

by David Wick

As a designer and provider of solar showers for festivals (www.spiralsun.co.uk) the question of disposal of waste water - technically 'grey water' - is often raised.

Why bother – what's it all about? Grey water, from catering, saunas and increasingly from showers is produced in large quantities by festivals. The most conservative way of disposing of this grey water is to temporarily store it in large plastic/metal containers and from there tanker it out to a local sewage works. This works well for local authority officials who

- (a) Don't like and/or trust festival organizers to implement other possible solutions
- (b) Don't want to be held responsible for organiser's own plans going wrong if they did permit other solutions
- (c) Know full well that the local geology/hydrology means that on site disposal would/might be unsafe. This is the only really valid reason for not permitting on site disposal and one that the Big Green Gathering suffers from.

It also works well for festival organisers/site managers who don't feel the environmental impact of the festival matters much. Or feel under such pressure/time constraints that what has worked in the past is best left as it is as there is a lot of other calls on their time. In all fairness to event organisers such changes may feed through in to the granting of event licence processes and require some or a lot of site re-organisation. However it does not work well from an environmental point of view as a good deal of diesel/petrol is used up moving all this not very harmful water about the place. Far better would be on (or a least near) site safe disposal systems. This would also cut down on site vehicle movements, which is to the good at any festival. Furthermore it would almost certainly be cheaper to devote resources to on site disposal compared to the costs of tankering waste water out. Clearly then this requires the active co-operation of festival organizers/site managers. Not unreasonably they will want to know what is involved and how it may be implemented - as they are busy people who cant be bothered with half baked proposals that may not work!

So what would it take? More experienced event organizers and site managers already know that at least on some sites soak-aways already exist and are used successfully for at least some of the events waste water. Why not do that everywhere? For a soak away to exist in the first place it has taken some combination of the following - determination on the part of organizers (often site managers); co-operation from landowners/local authority officials; pre-existing traditional (usually agricultural) usage; event organizers going along with site layouts that sensibly accommodate these facilities. So to do it everywhere would take a similar constellation of circumstances. As will, in all fairness, anything I suggest other than traditional usage.

Despite the above, soak-aways are not ideally suited (like reed beds) to the job in hand. Both are good at dealing with relatively small quantities of grey water produced over an extended period. Not bloody enormous quantities produced over a few days. Soak-aways depend on the filtration and slow movement of waste water through subsoil to render it safe. This means you need the right kind of subsoil in the right kind of geological position to work properly i.e. give the subsoil bacteria enough time to do their stuff and break down pathogens before the water gets anywhere near streams/underground aquifers etc. Likewise reed beds, but these also require a continuous supply of (grey) water if they are not to dry out and die. Again their essential function is to provide an environment where naturally occurring bacteria breakdown pathogens, although they are also good at absorbing and neutralizing synthetic chemical pollutants. As is soil up to a point.

The solution I'm proposing is a sort of soak-away, but a very shallow sort and spread over a much larger area than a traditional type. This approach has two major advantages.

Firstly the helpful bacteria that does the pathogen and synthetic chemical and breaking down bit are much more prevalent nearer the soil surface. So a shallow disposal system will neutralize grey water much more quickly than a deep traditional soak away. Secondly by spreading the system over a much larger area of ground its possible to soak up much larger quantities of (grey) water before the soil would become saturated and go smelly (anaerobic bacteria become prevalent like in a swamp).

Another way of looking at all this is that as hosepipe bans have become commonplace in Southern England it has become increasingly common for people and some organizations to use grey water for garden irrigation. These gardeners/organizations are not being (to my knowledge) jumped on by environmental health officers but rather appear on TV occasionally, held up as examples of good husbandry. These people generally disperse their grey water by hosepipe or watering can thus bringing themselves and others in close contact with any potential pathogens or pollutants. And still no environmental health officers seem to take an interest. The system I'm suggesting would use a network of shallow, covered over, trenches. Thus preventing any direct contact between grey water and people/ animals which should appeal to environmental health officers. In practice on a festival site it would also be wise to fence of these areas.

So, skating over quite a few important details, it should be possible to use such systems on festival sites. Also there is an increasing body of legislation requiring organizations etc. to mitigate the environmental effects of their activities as pointed out on this site – see Our Planet, Our Environment. It would be hoped that environmental health officers would be looking for ways in which this legislation may be put into effect. And I would suggest it is in the interests of event organizers to help them find these ways, for both financial and environmental reasons.

In conclusion I would like to state that I have no formal qualifications in waste water disposal but I met a man who does (at the Rainbow Gathering last summer -Parker Abercrombie). It is Parker who has assisted me in developing the above ideas. He was an employee and researcher for Oasis Design (<http://oasisdesign.net>) who produce, to the best of knowledge, the planets leading works on grey water irrigation/disposal systems. Sadly all the legalistic stuff pertains to the US but much of it, like all good science, should cross boundaries fairly easily. This would be useful for the persuasion/enlightenment of environmental health officials as well as persons responsible for constructing on site disposal systems.

I would appreciate the contributions of all/any interested parties (there has got to be out there somewhere an environmental health officer into festies ?) to this discussion. Please feel free to rubbish anything you think is rubbish, including me, and I'll do my best to defend or agree.

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