Visit to Seatown Water Recycling Centre, 11th January 2023

Present: Peter Stapleton & Paul Ramsden (WRAG), Andrew Carey (Char Valley), George & Anna Dunn (CPC)
Andrew Mears, Julian Okoye and Harry (Wessex Water)

Water Recycling Works (WRC) site visit

Effluent enters from the north and passes through a 6mm screen to filter out solids, it is then channelled towards processing, with excess liquid being taken offline to storage tanks where settlement occurs. This liquid can be recycled back into the start of the system for processing or, in times of high water, overspill to the sewage overflow to the river; this is monitored automatically and the information sent to Safer Seas and others.

The main processing flow after the 6mm filter is into settlement tanks where solid matter falls out of suspension (this water appeared relatively clear in a sample from today as solids have dropped to the bottom). Liquids then pass into an aerated bacterial tank, then into the ponds where it is sprayed on to stones on which bacteria live and which digest much of the effluent. A final stage for the liquid is UV light treatment which eliminates much of the E. coli prior to discharge into the river (e.g. from July last year E.Coli of 180000 cfu/100 ml was reduced to 10 by UV). Seatown is the only WRC in West Dorset to have UV treatment as other coastal discharges are offshore and considered safe by EA.

Solid matter is removed from the plant and transported by road to Berryhill sludge treatment centre where anaerobic digestion produces material for agricultural fertiliser and bio-methane for electricity generation. The presence of heavy metals is recorded but no action is taken.

Sewage overflow events from the WRC occurred on 62 days in 2021 over 700 hours, and on 6 days for 16.5 hours from Seatown sewage pumping station (SPS). WW need to reduce this to a maximum of 10 events per overflow per year, with up to 3 during a bathing season. There are just these 2 overflows on the Winniford.

Phosphorus discharge

Phosphorus discharge has been considered a bigger problem than sewage storm overflows (SSO) and more money has been spent on it: Ofwat was unlikely to support extra SSO expenditure. The phosphorus comes from agriculture and human sewage and can cause algal blooms. Nitrogen in coastal waters and estuaries is also a problem.

Future plans

WW have a 5 year planning system for works with the next period due to start in 2025. Seatown is quite high up the list with improvement scheduled for the WRC in the period

2025-2030 though what form this will take is unknown. WW are expecting to spend £500m across the network per 5 year period up to 2050.

Lagoon

The Environment Agency (EA) had not considered the river to be a problem as they focused attention on the coast. Seatown waters are considered excellent although there are few samples taken and these are to the west (up current) of the river outfall.

Sampling of the lagoon waters by Dorset Council one day after a spill event on 16th August 2022 showed E. Coli readings of 70000 and 80000 cfu/100ml at either end of the lagoon. The swimming beach limit is 88 and non-bathing beach limit is 406; The lagoon was therefore about 900 times the swimming beach limit following the spill.

What can be done to improve the lagoon waters?

There are 3 main actions WW can take:
(a) Reduce the volume of clean water entering the system – some sealing of sewers in the village to reduce groundwater entering the system is planned for this year.
(b) Treat sewage using UV or with wetlands/reed beds – already have UV, is there enough space for wetlands?
(c) Increase storage – current storage can cope with x8 dry flow (this capacity is set by EA)

What actions can the community take:
(a) Reduce agricultural run-off
(b) Reduce Storm overflow use – this could be helped by getting households to redirect rain water away from the sewers (water butts, soakaways, fed directly in to the river (maybe?)): however much of this water is run-off from fields and outside our control.

Water sampling

WW suggested sampling above and below WRC and Seatown SPS. Sampling ideally to be both chemical (oxygen, ammonia plus others) and invertebrates (riverfly) as is being done in the Char. The latter re likely to be more informative as they would show the general health of the river without the need to sample when a spill is in progress.

WW will consider whether they can help WRAG to get started with this analysis.