

Appendix 4.5 Sewerage Infrastructure

Information and Evidence provided by Adrian Clark, Cranleigh Civic Society.

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Cranleigh Waters Pollution Problem

Cranleigh Sewage Works opened nearly 50 years ago to serve between 10,000 and 15,000 people in Cranleigh, Ewhurst, Hascombe and other local villages. Addition of the recently approved Amlets Lane and Crest Nicholson sites will take it over the 15,000 limit when they are built.

The stream Cranleigh Sewage Works discharges its effluent into what is called “Cranleigh Waters”, and the quality and quantity of effluent is controlled by the Environment Agency (EA) via a document called a “Permit Limit”. The last Permit Limit was issued in 2009, and it is now long overdue for renewal.

Recently, Cranleigh Waters has been re-classified by the EA as “ephemeral”, which means it flows well in winter but not in summer. This started around 4 years ago and it has got progressively worse. On 6th October 2015, it stopped flowing altogether for a period. This is due they say to abstraction and low aquifers upstream, increasing population density and onset global warming. The consequence of this has been to turn Cranleigh Waters into an “eutrophic” water body, which means that it is rich in nutrients and promotes plant growth, at the expense of providing a suitable habitat for fish, amphibians and invertebrates. Since 2009, The EA has classified Cranleigh Waters as “Eutrophic and Bad”, the worst category on their ratings scale.

Under the Environmental Permitting (England and Wales) Regulations 2010, the 2009 Permit Level should have been regularly reassessed by the EA and reissued, but that has not happened. Recent data issued by the EA on the 7th December 2015 shows that the Permit Level is now being exceeded in all three key water body pollution indicator categories, Solids, Biochemical Oxygen Demand and Ammoniacal Nitrogen.

Before considering whether any new homes should be built in Cranleigh, a new Permit Level should be issued by the EA and a study made to assess whether the Cranleigh Sewage Works can be extended to cope with increased demand, and to assess if Cranleigh Waters can take any more pollution. Cranleigh has recently been designated a “Protected Zone” by the EA to help defend a major drinking water abstraction point for Guildford, a short distance away downstream. Waverley Borough Council told us that they have not assessed the above, but they are now looking into it, having had the matter brought to their attention.

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Evidence gathered:

1. [NPPF, revision 05-Mar-14](#) states that a site must be deliverable within 5 years in terms of infrastructure, the implication being that if it isn't (if the Cranleigh Sewage Treatment Works can't be upgraded within 5 years) then outline planning permission should not be granted. To be considered "deliverable" (for the JPC to vote YES), a site must be available now with a realistic prospect of completion within 5 years. [NPPF footnote 11 \(Rev. 06-Mar-14\)](#)
2. LA's should set out strategic policies for the area in the Local Plan including the provision of infrastructure for waste water [NPPF para 156 and NPPG para 001](#) says adequate wastewater infrastructure is needed to support sustainable development.
3. STW (properly called "Elmbridge Water Pollution Control Works") opened in July 1967 [plate on outside of plant](#) to deal with sewage from 10,000 to 15,000 people [EA consent D42, revision Jan 2009](#). TW said in 2011 that at that time it served 14,200 people in Cranleigh, Hascombe, Rowly and Dunsfold. http://www.waterprojectsonline.com/case_studies/2011/Thames_Cranleigh_2011.pdf
4. Not included in the 14,200 people are Crest Nicholson 149 houses, Amlets Lane 125 houses, Swallowhurst 57 houses and other new developments approved by Waverley since 2011, x average 2.3 people per household taking the total served by STW to over its 15,000 design limit. http://www.waterprojectsonline.com/case_studies/2011/Thames_Cranleigh_2011.pdf
5. It could be extended to deal with more people but it would take 3 to 5 years to extend [Letter from TW to NP 04-Nov-14](#), plus 3 months feasibility study by Thames Water [Mark Dickinson 07747-640591 phone call 08-Oct-15](#) plus 12 to 18 months European Directive and Local Planning including an Odour Assessment [guess looking at project reports on other sites online](#). So it could take over 5 years (Ref. Item 1 above). Odour impact assessment needs to be done as houses within 800m. [Letter from TW to NP 14-Sep-15](#). Note that the works carried out in 2010 and 2011 at STW, including a new odour control plant, were in response to odour complaints from nearby residents. http://www.waterprojectsonline.com/case_studies/2011/Thames_Cranleigh_2011.pdf
6. [Thames Water told us verbally on 26-Oct-15 that the next Ofwat 5 year budget application round starts in 2019, so overall the extension works could take up to 10 years from the time Thames Water initiate the project.](#)
7. Thames Water wrote to the Cranleigh Neighbourhood Plan group and stated that their existing infrastructure has insufficient capacity to cope with sewage from the Amlets Lane and Horsham Road applications which Waverley recommended and the JPC has already voted through. [Letter from TW to NP 14-Sep-15](#).
8. [Thames Water wrote to Waverley on 18-Dec-14](#) and again on [13-Feb-15](#) and stated that their existing waste water infrastructure has insufficient capacity to cope with the KPI application, because it has to be viewed in conjunction with neighbouring sites and should not be considered in isolation.
9. [EA Permit Limit Jan 2009](#) is max 13,620 m³ in any one wet day or max 4540 m³ in any dry day (TW have to keep integrated flow readings), into Cranleigh Waters <https://uk.answers.yahoo.com/question/index?qid=20080108044123AAXhroa> which joins the River Wey at Shalford, with a maximum peak flow at any time of 120 litres per second, [EA email to TW 28-Sep-15](#). This stretch defined as Sensitive Area (Eutrophic) as identified under Part 1a of Schedule 1. (Eutrophic: rich in nutrients and so supporting a dense plant population, the decomposition of which kills animal life by depriving it of oxygen.) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/183354/sensarea2011_noticeschedule.pdf

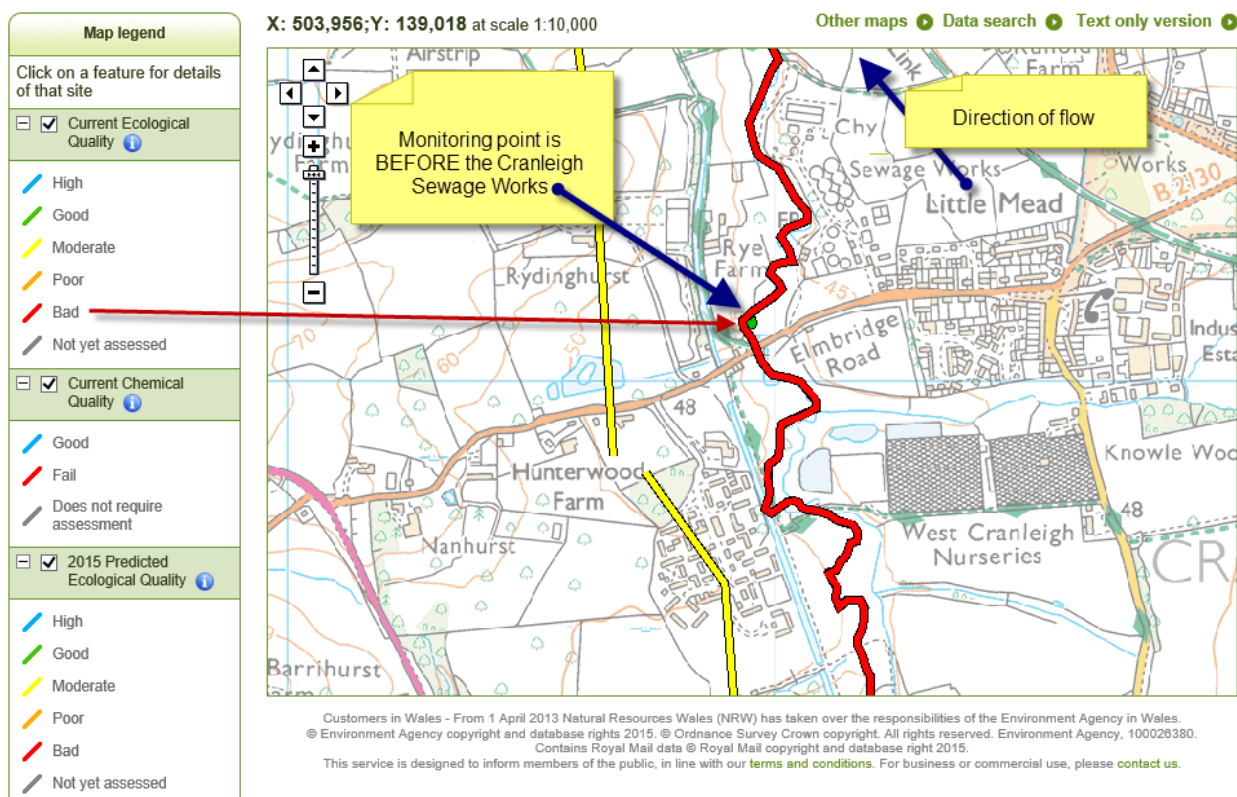
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10. Maximum designed STW output is 120 l/s, according to the contractor who worked recently on the plant installing sludge dewatering equipment, Bollf.
http://cms.esi.info/Media/documents/Bollf_618CranleighSTW_ML.pdf
11. STW currently operates at 65% of the 4540 m3 dry day limit. [TW email 28-Sep-15 to Cranleigh Society](#). Average 2014 discharge was 5143 m3 per day and the maximum was 9666 m3 on one day in February 2014. [TW email 01-Oct-15 to me](#).
12. Allowable discharge <25 mg/l solids, <8mg/l biochemical oxygen demand, <3mg/l ammoniacal nitrogen. [EA Permit Limit Jan 2009](#). This has not been updated since 2009.
13. Alfold sewage from 450 homes (1035 people) max 20.8 l/s to be sent to STW [copied off WA/2015/1381 planning portal 06-Oct-15](#). Discharge (from on-site treated sewage) is due to be sent to STW from the new Dunsfold 1800 houses development submitted for planning week commencing 07-Dec-15 ([verbal only, not confirmed](#))
14. TW much prefer brown field sites to green field sites as the sewerage infrastructure is already in place (other than the works itself) and historical flows v. site not preciously drained. [Letter from TW to NP 14-Sep-15](#).
15. 1200 new dwellings, ditto item 13 + BH 425, Amlets 125, KPI 265, Horsham Road 19 apartments+ 149 houses + Hewitts (probably going to appeal), 125 houses.
16. Sludge dewatering plant planning application and works 2010
<http://mycouncil.surreycc.gov.uk/Data/Planning%20and%20Regulatory%20Committee/20101020/Agenda/Delegated%20Cranleigh%20Sewage%20Treatment%20Works%20WA210%201310.pdf>
17. The River Wey is currently graded “B” which means “Good”. If TW go over the Permit Limit of streams feeding into the River Wey, the first thing EA should do is to downgrade the River Wey quality to “Bad”. [Dawn Cooper at EA on 25-Sep-15 by phone](#). Rivers are rated A to F (A is “Very good”). Data received 11-Dec-15 shows that the Permit Level limits are already being breached. [email dated 07-Dec-15 from Environment Agency to Cranleigh Society](#).
18. [Telephone call with Mark Dickinson 07747-640591 08-Oct-15 mark.j.dickinson@thameswater.co.uk](#) 1. Yes, at capacity both in piping and sewage works. 2. Normally don’t need planning permission because “permitted development” applies, but when Cranleigh Society prompted him he remembered all the odour complaints in the nineties and said an “Odour impact assessment” would need to be done which kicks off a need for full planning approval. 3. Had the list of new sites but Little Meadow, Alfold and Swallowhurst were not on his list. Agrees 2.3 people per dwelling.
19. http://maps.environment-agency.gov.uk/wiyby/wiybyController?value=gu6+7nu&lang=e&ep=map&topic=wfd_rivers&layerGroups=default&scale=9&textonly=off&submit.x=18&submit.y=11#x=506528&y=138698&lg=1,8,9,5,6,&scale=6 shows “bad” quality of Cranleigh Waters.
20. Cranleigh Waters is the only river, stream or brook flowing into the River Wey rated **“BAD”** on the [2014 Waverley Strategic Flood Risk Assessment, page 80](#):

Wey	Good	Rivers: (1) Chertsey Bourne (Sunningdale to Virginia Water); (2) Chertsey Bourne (Virginia Water to Chertsey); (3) Ock Lakes: (1) The Tarn; (2) Manor, Fleet, Abbey and St Ann's Lakes at Thorpe Park; (3) Boldermere
	Moderate	Rivers: (1) Addlestone Bourne (West End to Hale/Mill Bourne confluence at Mimbridge); (2) Addlestone Bourne (Mill/Hale to Chertsey Bourne); (3) Chertsey Bourne (Ascot to Virginia Water); (4) Chertsey Bourne (Chertsey to River Thames confluence); (5) Clasford Brook and Wood Street Brook; (6) East Clandon Stream; (7) Guilehill Brook; (8) Hale/ Mill Bourne (Bagshot to Addlestone Bourne confluence near Chobham); (9) Hoe Stream (Normandy to Pirbright); (10) North Wey (Alton to Tilford); (11) Royal Brook; (12) Slea (Kingsley to Sleaford); (13) Stratford Brook; (14) The Moat at Egham; (15) Tillingbourne; (16) Truxford Brook; (17) Wey Navigation (Pyrford Reach); (18) Wey (Shalford to River Thames confluence at Weybridge) Lakes: (1) Frensham Little Pond; (2) Virginia Water; (3) Whitmoor Common Pond
	Poor	Rivers: (1) Wey (Tilford to Shalford); (2) Hoe Stream (Pirbright to River Wey confluence at Woking); (3) South Wey (Haslemere to Bordon); (4) South Wey (R. Slea confluence to Tilford) Lakes: (1) Frensham Great Pond
	Bad	Rivers: (1) Cranleigh Waters

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- Over the last few years, and long since the last EA Permit Limit was evaluated and set (in 2009, based on data taken 9km upstream in 2007), Cranleigh Waters has been much reduced in flow through abstraction, low aquifers, growing population and climate change. On the 6th October 2015, it stopped flowing altogether for a period [site visit on 06-Oct-15](#). October rainfall figures over the last 15 years have steadily decreased locally. Five-year figures: 2000, 155.4mm, 2005 73.4mm, 2010, 74.8mm and 2015 50.8mm <http://www.metoffice.gov.uk/pub/data/weather/uk/climate/stationdata/heathrowdata.txt>
- Under the Water Framework Directive, EA are meant to be monitoring the quality of Cranleigh Waters each year for ecological and physio-chemical elements, including invertebrates, fish, dissolved oxygen, ammonia, pH and phosphate, [email form EA on 21-Oct-15](#). EA used to regularly assess and reissue the Permit Limits, but for some reason this has not been done since 2009. But in the meantime, on the [EA website](#) Cranleigh Waters is also rated “BAD”, measure even before the flow of the stream reaches the STW:



- Recently the Environment Agency has agreed a 5-year permit to Cranleigh Brickworks to release zinc, cadmium and dieldrin pollutants into Cranleigh Waters recent village meeting at Cranleigh Brickworks.
- In the “dry months” May to September in 2015, data supplied by Thames Water to the Environment Agency shows that the biochemical oxygen demand and ammoniacal nitrogen levels in the final effluent data is already breaching the Environment Agency Permit limits set in 2009 for Cranleigh STW. [email dated 7th December 2015 from the Environment Agency to Cranleigh Society](#).

UPDATED:

- [14-Jan-16](#) Mark Mathews of Thames Water stated that it could take under 3 years to upgrade Cranleigh Sewage Works as they may be able to get the works done within the current Ofwat 5-year cycle, and there is a drinking water abstraction point for people living in Guildford downstream of the Cranleigh Sewage Works, but TW treatment at Shalford will be able to deal with polluted water from Cranleigh STW.

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26. [July 2016](#) Cranleigh Civic Society carry out AN Odour Survey for all 330 homes within an 800m radius, with a 32% survey return rate, and find that 67% of households had experienced odour problems from the STW, and 96% wanted TW to carry out a full Odour Impact Assessment before proceeding with the works on site.
27. [08-Aug-16](#) EA + Surrey Wildlife Trust team visits Cranleigh Waters to try to determine reasons for the stream not flowing properly in recent summers.
28. [19-Aug-16](#) WBC issues its “Draft Local Plan” for comment. WBC has not done a Water Cycle Study.
29. [19-Aug-16](#) Capita issues a “desktop” Water Cycle Study Scoping Report, **AFTER** the draft Local Plan has gone out for consultation, so it could not have been used as part of the evidence base. Main points arising are TW has increased discharge rate from 120 l/s to 158 l/s, wrong PE number of users rate quoted (the one quoted as 2016 is actually 2011), no account taken of the low flows in Cranleigh Waters.
30. [01-Sep-16](#) EA email to Cranleigh Civic Society with interim conclusions from the 08-Aug-16 visit: “Firstly Waverley BC will be undertaking a full water cycle study to take account of the new developments in order to make sure that all the infrastructure, permit tightening and subsequent upgrades are planned for and in place prior to the developments being occupied. Secondly we have broadly identified the reasons for the low flows, which are largely down to the over widening of the watercourse (as well as other potential causes).”

Abbreviations:

STW – Sewage Treatment Works
NPPF – National Planning Policy Framework
NPPG – National Planning Practice Guidance 2014
WBC – Waverley Borough Council
EA – Environment Agency
TW - Thames Water
SCC – Surrey County Council

Evidence Update ongoing

Additional comments from Thames Water provided in Appendix 4.6 Utilities