Appendix RA03

Addendum to original appendix A33 – cost adjustment claim

1 April 2019

Contents

Introduction

Ofwat have used the cost adjustment claim mechanism at PR19 to assess unique or atypical material costs that companies consider are not reflected in cost baselines and that drive higher efficient costs for a company relative to its peers.

A deep dive assessment has been used to appraise our cost adjustment claim totex of £63m (£74m gross) related to an additional treatment stage at both of our treatment works and associated trunk mains cleaning.

We welcome Ofwat's feedback on our claim, and we are pleased to have received a score of an A within the initial assessment of plan test areas relating to cost adjustment claims. The expenditure outlined in our claim is important to our customers, regulators and ourselves and considerable time and effort was spent to try and ensure our claim outlined and evidenced our needs effectively.

We do however recognise that Ofwat have requested some additional information, and this is outlined in the table below.

Within this deep dive, the claim has been assessed as being 11% material relative to the company view of totex in the control for AMP7, and has scored against the eight assessment gateways as shown below. These gateways will be used as the focus of this addendum to our claim.

Cost Adjustment Gateways	IAP grade	Ofwat IAP Comments
1. Need for investment	Pass	
2. Need for adjustment	Partial	No data provided showing raw water deterioration or showing treated water quality failures/near misses
3. Management control	Partial	No comment in IAP as to why this is a partial pass
4. Best option for customers	Pass	
5. Robustness and efficiency of costs	Partial	Would like to see evidence of Atkins report on potential options as well as independent assurance on third party reports
6. Customer protection	Pass	
7. Affordability	Pass	
8. Board assurance	Pass	
Overall IAP result	Partial accept	
Overall IAP test grade	A	Ofwat have recognised that the claim is of a reasonable quality, with high quality evidence of the need for investment.

We recognise that there is a clear need to ensure this investment is the best option for customers and one that demonstrates robust and efficient costs. Building on **Ofwat's**

recognition of the high quality evidence of the need for our claim, we have scrutinised the deep dive assessment and suggest that there are three gateways providing the main focus of Ofwat's challenge, which we use to provide additional evidence for below:

1. Need for adjustment (gateway 2)
2. Management Control (gateway 3)
3. Robustness and efficiency of costs (gateway 5)

1. Need for adjustment (gateway 2)

This is split into three areas, each providing additional evidence to demonstrate;

- The implicit allowance calculation of base maintenance does not take into account historical and forecast base maintenance investment on a number of treatment processes at the treatment works
- The proposed cleaning is actually part of the commissioning of works and ensures that benefits of the additional stage of treatment reaches our customers – and not a normal business as usual activity.
- Data evidencing water quality based challenges that supplement the need for cost adjustment

We also outline the factors defining why the costs in our claim lie outside management control

1.1 Implicit allowance

The allowances in Ofwat's IAP deep dive assessment have been broken down in the below table. This section looks to provide additional evidence to challenge the total of £8.86m implicit allowance stated by Ofwat as being part of our base maintenance costs in the deep dive assessment.

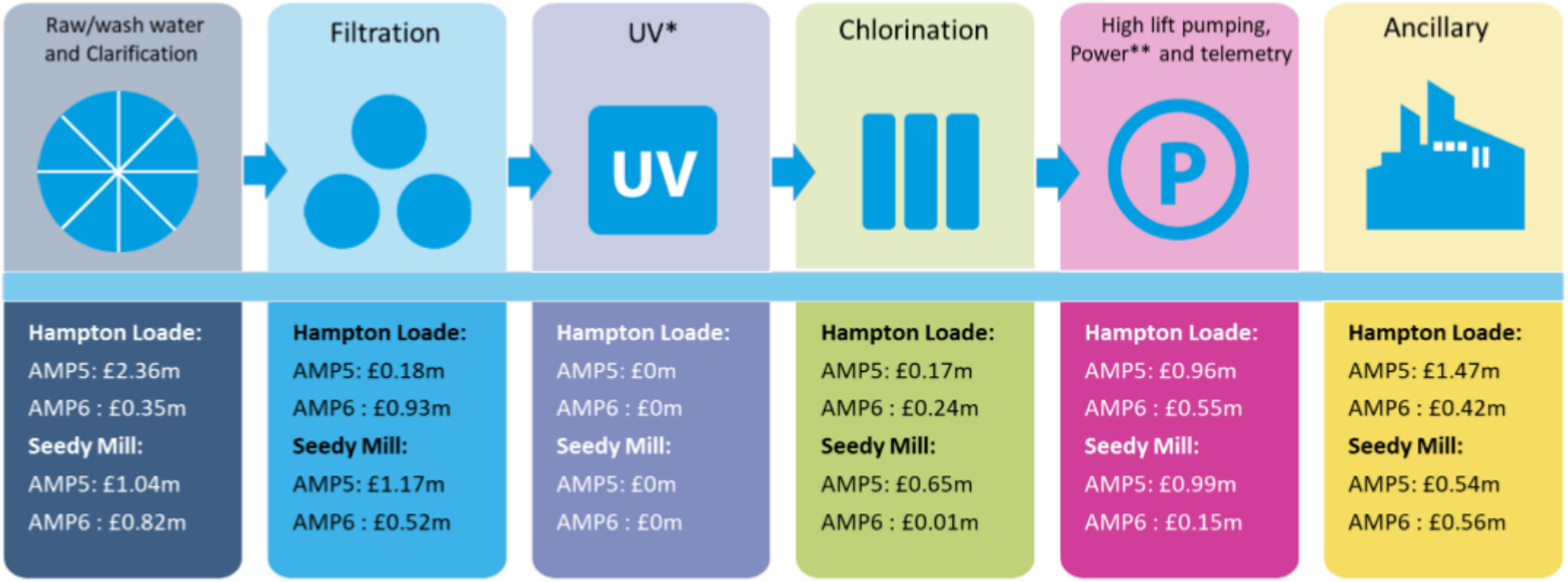
Cost Adjustment Claim IAP assessment	Totex (£m)
Gross value of claim	74.35
Implicit allowance - moved into base	**-8.86**
Trunk mains cleaning - moved into base	-4.00
Client risk reduction	-2.70
Severn Trent contribution	-10.50
Net subtotal	48.29
7% efficiency reduction	-3.35
Net total IAP allowance	**44.94**

Ofwat have stated that £8.86m of the claim should reside in our baseline modelled costs. This value has been produced by using a proportion of historical and forecast AMP7 water

treatment base maintenance costs previously submitted by us. Ofwat have then used our calculation of both WTW's accounting for 60% of the total treatment works output for SST and 81% of the total DI for SSC, together with the annual average of water treatment base costs to generate their implicit allowance value of £8.86m over AMP7.

This calculation appears to assume that all base maintenance capex costs ongoing at both WTW's are reflected in this value i.e. across all treatment processes on each site. We now provide additional information in the below infographic that splits out historical and forecast base maintenance capex across a number of processes to show why we consider the current modelling assumption does not provide sufficient allowance.

AMP 5 and 6 gross base maintenance capital expenditure at Seedy Mill and Hampton Loade WTW



*UV installed at both Seedy Mill (£4.5m) and Hampton Loade (£7.1m) in AMP6 – forecast uplift in base capital maintenance in future AMPs per asset lifecycle costs
**Gas generator installed at Hampton Loade (£5.6m) in AMP6 – forecast uplift in base capital maintenance in future AMPs per asset lifecycle costs

Gross Base Maintenance (£m) at WTW	AMP5 Total	AMP6 Total	AMP7 Forecast (17/18 CPIH)
Raw/wash water and clarification	3.4	1.17	1.36
Filtration	1.35	1.45	0.56
UV	0	0	0
Chlorination	0.82	0.25	1.06
Pumps/Power/Telemetry	1.95	0.7	2.53
Ancillary	2.01	0.98	0.89
Total	**9.53**	**4.55**	**6.41**
Average		**6.83**	

Using both historical and forecast capex, we state an average of £6.83m over the 3 AMP periods in question. This level of maintenance spend is included within our baseline costs and so no costs for maintenance on the existing works were included within our cost adjustment claim. We estimate that there will be 80% of the existing treatment works not impacted in any way with the proposed investment.

As we explain in our claim, the solution we are proposing is an extension to our existing processes, so both works will continue to be in full operation during construction. **Given this, we want to be clear that we will continue to undertake the level of maintenance activity outlined in the above infographic both during construction and once the additional stage of filtration has been commissioned.** We therefore consider that this should be factored into any assessment of an implicit allowance challenge around our claim.

We reiterate that the construction of the additional stage of filtration at both treatment works will be carried out offline and as such will not impact on normal operation and maintenance of the works nor the quality and volume of water we supply to our customers. In addition, no maintenance costs for the existing processes have been included in the claim. We are also mindful in our planning of the need for the assets to be constructed in such a way that the existing assets can be taken out of commission without impacting the normal output of the works.

1.2 Trunk mains cleaning totex

In the deep dive assessment of our cost adjustment claim Ofwat also considered that the £4m trunk mains cleaning, and associated expenditure to deliver, are covered within the base modelling allowances.

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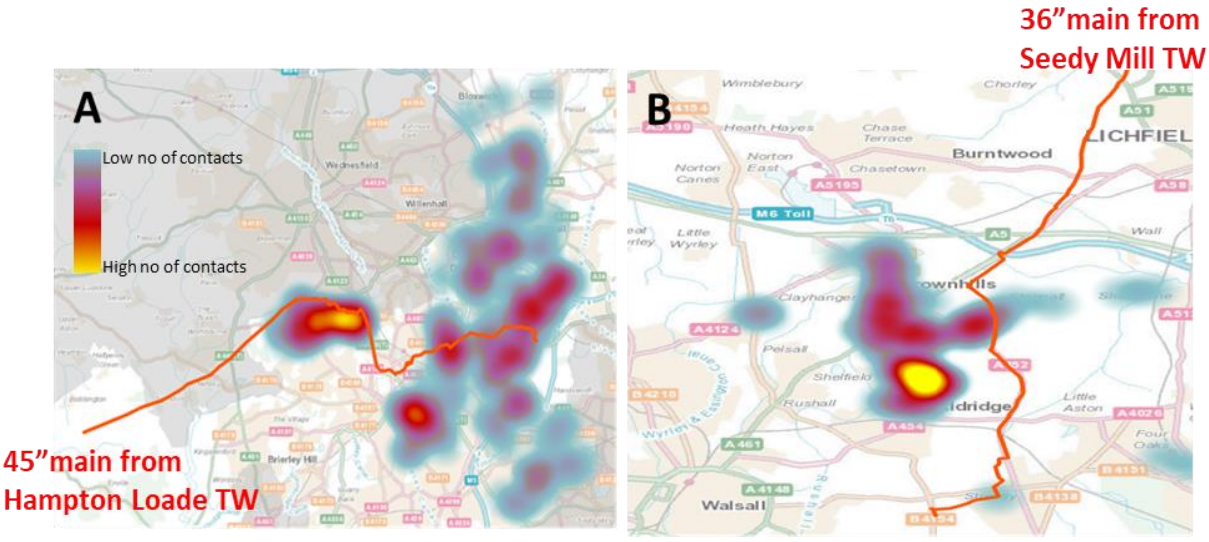
Client risk reduction	-2.70
Severn Trent contribution	-10.50
Net subtotal	48.29
7% efficiency reduction	-3.35
Net total IAP allowance	**44.94**

We use this section to state additional evidence as to why the proposed cleaning is actually part of the commissioning of works and ensures that the benefits of the additional stage of treatment reaches our customers – and not a normal business as usual activity.

Due to the level of effectiveness of our existing treatment processes at both treatment works we know that there is a level of sediment built up across our strategic mains network. We provide two examples below, of DWI reportable events, as evidence to support the fact that during atypical network operations this sediment can be dislodged and passed on to our customers.



Example A illustrates a discoloured water event in Sedgely, West Midlands in July 2015. As part of our Summer Action Plan, the normal output of our Hampton Loade TW was increased to a peak of an additional 35Ml/d. This resulted in 297 discolouration contacts over the period of the event.

Example B illustrates another discoloured water event in our Barr Beacon supply zone, West Midlands in October 2016. The velocity along a 36" strategic trunk main was increased as a result of a planned test to commission the new UV works, increasing the output from Seedy Mill TW to Barr Beacon up to a peak of 60Ml/d. This resulted in 103 contacts over the period of the event.

This type of event isn't acceptable to us, our customers or our regulators. We already carry out a level of strategic mains cleaning, mostly through non-invasive pipe conditioning. Whilst this manages a level of risk, it will not deliver the step change risk reduction we need to ensure the benefits of the additional treatment stage at both works reaches our customers.

This is why we propose a one-off intensive cleaning programme, utilising a range of techniques, including more aggressive methods, to ensure we can deliver the step change in water quality our customers receive. The programme of works is outlined in detail within our claim in section 5.5. Whilst we acknowledge that there is no formal precedent existing, we highlight historical examples of where mains cleaning activities that are delivering a step change in service in terms of the quality they receive have been classed as enhancement.

We believe that this expenditure should be considered as part of our cost adjustment claim as it is additional to our normal operational mains cleaning activities and is a one off activity required as part of the commissioning of the new treatment stage. Without this we would be carrying a level of risk in our strategic network that could still result in our customers receiving water that is not aesthetically acceptable.

The £4m required to deliver this commissioning phase of work was included in the costs and the associated bill impact that we shared with customers during both the testing of solutions and also the overall business plan acceptability testing and therefore has the same level of customer support as the rest of the claim. We also included a specific element within our bespoke performance commitment around the delivery of the trunk mains cleaning so we consider that customers are protected.

We have reflected on our allocation of the expenditure required to carry out the trunk mains cleaning activity. In our September submission we assigned this activity to enhancement opex – however now we have provided further evidence on the relationship of this activity being part of the commissioning, we consider that it should be included in the overall project costs and therefore capex. We update the summary table from our original claim submission to reflect this change below, superseding the table in section 5.3 of our original claim Appendix A33.

(£m 17/18 RPI price base)	2020/21	2021/22	2022/23	2023/24	2024/25	Net Total (gross)
Seedy Mill Treatment Works						
SMTW – 2nd Stage Filtration capex	10	10	10			30
SMTW Additional opex due to increase pumping head			0.33	0.33	0.33	1
Hampton Loade Treatment Works						
HLTW – 2nd Stage Filtration capex	8.5 (12)	8.5 (12)	8.5 (12)			25.5 (36)
SMTW Additional opex due to increase pumping head			0.66	0.66	0.66	2
Trunk Mains cleaning						
Trunk Mains cleaning capex (inc. enabling works)	0.4	0.4	1.4	1	1	4.2
Contributions						
Total Contribution	3.5	3.5	3.5			10.5
Net Totals						
Total Capex	18.9	18.9	19.9	1	1	59.7
Total Opex			1	1	1	3

Updated totex cost summary table for our proposed investment

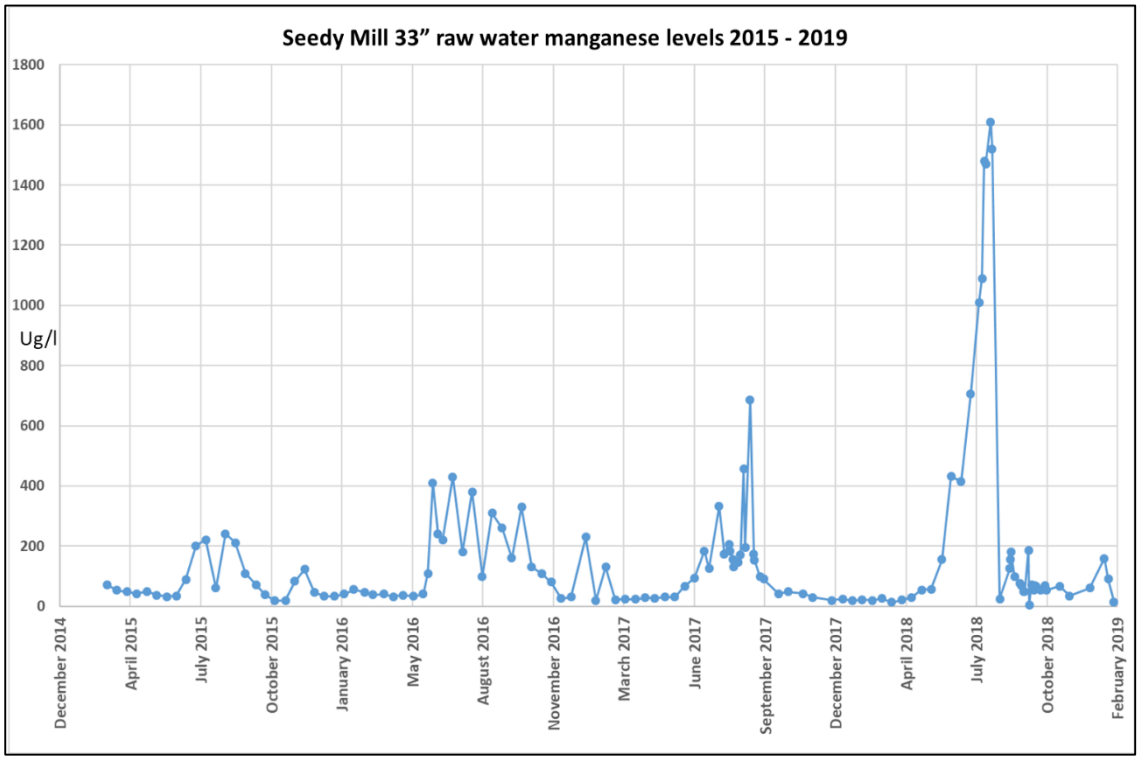
1.3 Water quality data

Within their deep dive assessment of our claim, Ofwat have stated we have provided 'no data showing raw water deterioration or showing treated water quality failures/near misses.'

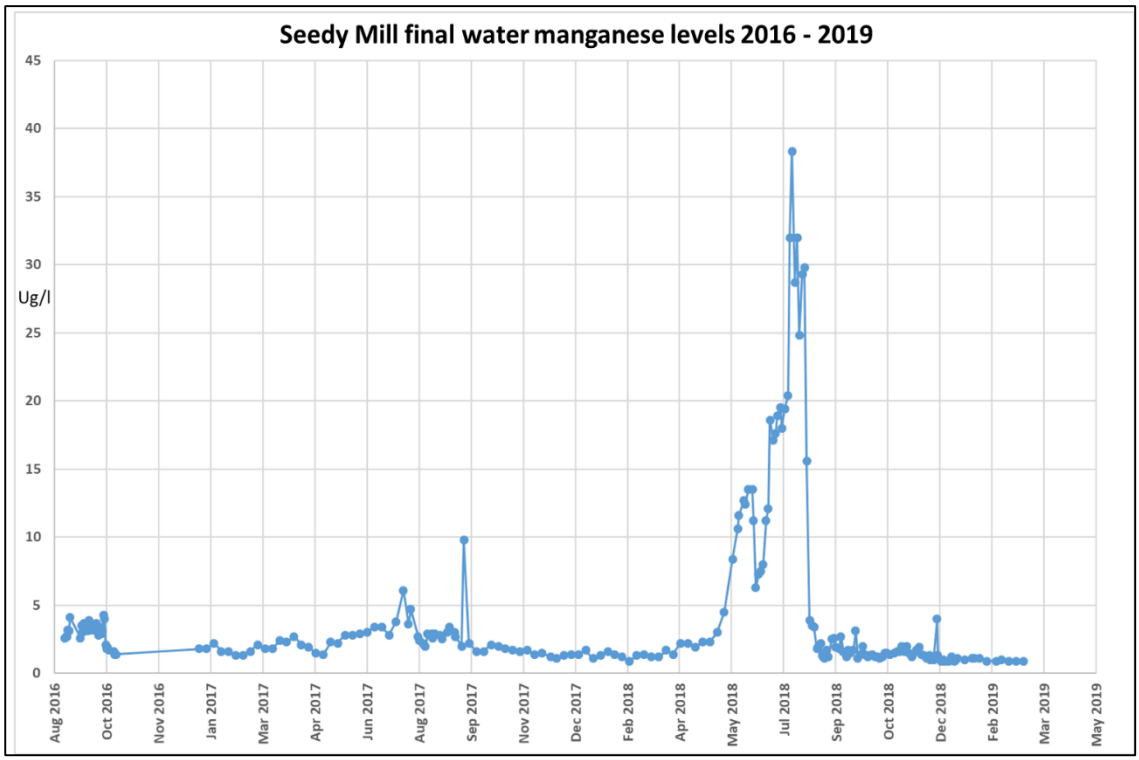
We use this section to highlight recent raw water quality based challenges at Seedy Mill treatment works in the summer of 2018 that we believe would be significantly reduced by the introduction of second stage filtration.

Our case for investment continues to primarily be founded upon making a step change in performance to meet customer and regulatory expectations – we did not make representations in our original claim in May 2018 that it should be based upon raw water quality deterioration as our data did not support this.

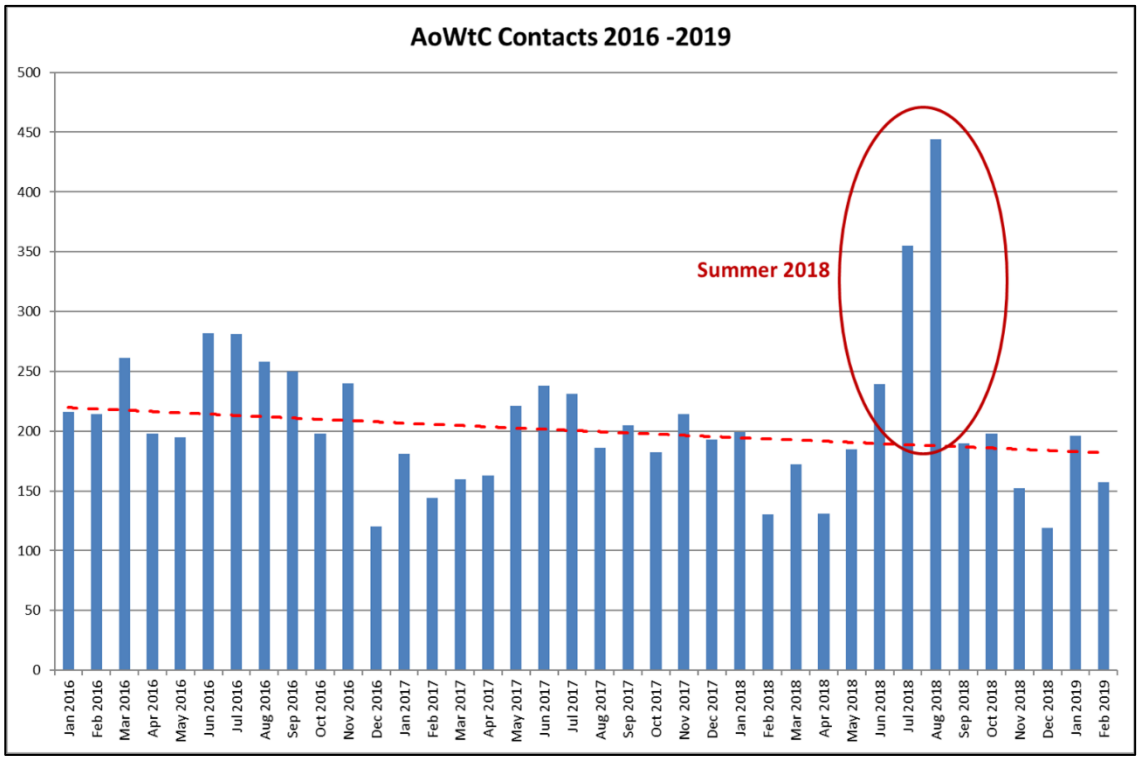
However, the exceptionally hot summer in 2018 resulted in a significant deterioration in raw water quality at Seedy Mill treatment works, the scale of which we have not seen before. The graph below, spanning the last five years, shows the impact of Blithfield reservoir rapidly stratifying due to the atypically warm weather over this period and the associated increase in manganese levels.



The existing treatment process at the works struggled to cope with this challenge, resulting in increased final water level of manganese leaving the works for a four week period in July 2018, illustrated in the graph below.



Whilst it is important to note that the water supplied from the works over this period was compliant with the regulatory standards, and did not hit our event notification criteria, the additional manganese loading in the water did have a significant impact upon our Acceptability of Water to Customers performance. This can be seen in the graph below.



The above graph shows a number of years of improvement against this measure between 2016 and 2018, resulting in an average reduction of 50 contacts per month over the period leading up to summer 2018. The following worst performing period of summer 2018 is then clearly evidenced in the graph as a result of the reduced water quality from the works.

An additional stage of filtration (as included in the claim) would provide an additional barrier to any manganese increase in the final water at the works. We believe this would have significantly reduced the impact of the raw water deterioration, and not resulted in the increased customer contact observed.

It should be noted that the same trend in elevated raw water manganese levels was not evident at our Hampton Loade treatment works, with final water sampling showing normal levels throughout the summer period.

2. Management control (gateway 3)

In terms of evidencing why the costs we have specified in our claim are outside of management control, we outline two main arguments:

- This high reliance on a small number of large treatment works gives us a different expenditure profile than the majority of other companies. Having two water treatment works supplying nearly 60% of customers between them puts us third in the sector in terms of reliance on large works. This gives us a different business expenditure profile compared with other companies and circumstances that are beyond management control. It means that we would expect to see lumpy expenditure timing when significant upgrades are needed, with longer maintenance only periods between these upgrade cycles. Companies that have comparatively more, smaller, treatment works would be more likely see a less lumpy expenditure cycle as across their portfolio as upgrades would be a more regular occurrence.

- As outlined in section 1.3, uncertainty around future climate change scenarios driving unpredictable events that result in raw water deterioration impacts the reliability of any planned investment strategies and associated costs to try and manage changes in raw water deterioration.

3. Robustness and efficiency of costs (gateway 5)

This is split into three areas:

- A challenge around the application of the company specific efficiency based on our revised base efficiency position
- A request to provide clarity around the gross and net costs within the assessment of our claim

3.1 Company specific efficiency

Ofwat have also applied a company specific efficiency challenge within their deep dive assessment, calculated as a function of our base inefficiency output from the Initial Assessment Period (IAP).

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7% efficiency reduction	**-3.35**
Net total IAP allowance	**44.94**

In our wholesale base cost allowance representations **(detailed in appendix 'RA01 Wholesale water base cost allowance'** and summarised in our new challenges and representations chapter) we consider that our proposed adjustments would put us ahead of the upper quartile catch up efficiency level. We therefore ask that this adjustment is reconsidered together with our base cost representation.

3.2 Gross cost modelling and presentation

Our cost adjustment claim was presented as a gross number in our business plan, which includes a £10.5m contribution from Severn Trent as correctly identified by Ofwat in the deep dive. Ofwat has then deducted this, making the cost adjustment claim allowance a 'net' value. However, this is at odds with how the other cost allowance numbers are displayed, all being gross, and therefore this overstates the presented efficiency gap and understates our cost allowance 'gross' of grants and contributions. The £10.5m contribution

is included in the grants and contribution line of table WS1 along with all of our other grants and contributions. Therefore, we believe that at this stage, where costs are being presented and compared on a gross basis, the cost adjustment claim value should also be displayed as a gross number, which will then correctly pass through as a net number later on in the process.

4. Procurement process update

As identified in our original submission, we have commenced the procurement process to appoint delivery partners. This section provides the latest information from the supply chain which supports our original costing analysis undertaken by Costain.

We also use this section to reinforce the robustness of our original client risk allowance based upon the breakdown of the individual risk components and bidder returns to date.

An EU compliant procurement process to appoint delivery partners commenced in April 2018, we now have a shortlist of five providers who have all demonstrated their ability to deliver projects of this complexity within the water industry.

- Costain
- Doosan / Barhale
- Galliford Try / Mott McDonald
- Nomenca
- Stantec

In order to evaluate submissions, we provided bidders a very tight scope (not the whole project) relating to the construction of filters and invited alternative solutions that could deliver the same or enhanced outcomes. The prices received have been compared to the equivalent scope and costs included within our original submission that were generated by Costain.

The evaluation was not just cost based - a range of criteria including technical solution, programme management, environmental management, H&S management and quality of proposed delivery team was assessed. Based upon this evaluation, we have reached a stage where we can short list three suppliers from which an award decision will be made.

Our process is still ongoing and in order to maintain confidentiality, the names of short listed providers has been anonymised. It is encouraging that the prices, when normalised for inclusions / exclusions and compared against an identical scope from those originally submitted, are on average within 6%. The process has also provided a number of alternative and innovative solutions relating to the location at the site and technical alternatives. These options may provide more attractive proposals once fully evaluated - this will be done during 2019 when a full optioneering and detailed design process will be completed in conjunction with the appointed provider. The table below summarises the variance from the original submission:

Bidder	Variance from original submission (%)
A	-2.8
B	-2.2
C	+13.7

4.1 Client risk

Having made very good progress with the procurement process there is still a significant amount of risk associated with these projects, this has been reinforced by all bidders and relates primarily to the following:

- Completion of detailed design of selected option and location at site
- Completion of environmental impact assessment
- Specific requirements associated with planning permission being granted
- Specific requirements associated with the completion of HAZOP studies
- Location of existing services and structures at the sites
- Location and capacity of High Voltage infrastructure
- Capacity and upgrade of sludge works
- Interface and configuration of SCADA controls with existing plant
- Weather related impacts during the construction phase
- Delays due to operational requirements during the construction phase

Whilst we acknowledge that we are further into the procurement process, we maintain that, when taking into consideration the above list, the level of risk within the original submission remains valid. Further, this level of risk has been reflected in the bidder returns received to date.

In order to meet the expectations set out and agreed with the DWI, we believe construction on both sites needs to commence in the early part of 2020 - this will be achieved within our plans to appoint delivery partners by June 2019, allowing optioneering and detailed designs to be substantially completed within a 12-month period.