

Variant:	Scenario 3a	Scenario 3a_s1	Scenario 3a_s2	Scenario 3a_s3	Scenario 3a_s4	Scenario 3b	Scenario 15a
	Pipeline 300 MI/d	Pipeline 200 MI/d	Pipeline 600 MI/d	Pipeline 100 MI/d	Pipeline 300 MI/d - intermittent	Pipeline 300 MI/d	Pipeline 200 MI/d
Relative to:	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
Cricklade	Chl, SS PO4, TON, NH4	Chl, Cu, NH4, SS, Si PO4, TON		Chl, Cu, Zn, NH4, SS, Si Zn, TON, Si	Chl, SS PO4, TON, NH4		
Lechlade	Chl, SS PO4, TON, NH4	Chl, SS PO4, Zn, NH4		Chl, SS PO4, Zn, NH4	Chl, SS PO4, TON, NH4		
Farmoor	Chl TON	Chl		Chl	Chl TON		
Culham	Chl TON	Chl, NH4 Si	Chl, Cu, Zn, NH4 DO	Chl, NH4 TON	Chl TON	Chl TON	NH4 DO
Wallingford	Chl	Chl	Chl Si	Chl Si	Chl	Chl	Si
Caversham	Chl	Chl	Chl	Chl	Chl	Chl	
Staines	TON		Chl		TON		
Bray	TON		Chl		TON		
Chertsey			Chl				
Datchet			Chl				
Laleham			Chl				
Walton AW			Chl				
Walton TW							
Teddington							

Results Summary 1

Discharge to Cricklade (Upper Thames):

- Chlorophyll shows significant increases for all scenarios, but this should be considered in light of fact that the baseline model under-predicted chlorophyll.
- Phosphate is higher in scenarios at times in the upper Thames, but the information on phosphate in these upper reaches is not detailed.
- No significant impact on stations in lower Thames.

Discharge to Culham (Lower Thames)

- As in upper Thames, chlorophyll increased in lower Thames.
- Other parameters mostly only show difference close to Culham, by Wallingford differences from baseline (except chlorophyll) are reduced.

Intermittent scenario:

- Discharge on - no significant difference from continuous scenario (3A_S1)
- Discharge off - no significant difference from baseline.

Similar to baseline	Elevated compared to baseline	Lower than baseline	Discharge downstream of site
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BOD	Chl	Cu	DO	NH4	PO4	Si	SS	TON	Zn
Biochemical Oxygen Demand	Chlorophyll	Dissolved copper	Dissolved oxygen	Ammoniacal nitrogen	Phosphate	Silicate	Suspended sediment	Total oxidised nitrogen	Zinc

<i>Variant:</i>	Scenario 5		Scenario 5_s1	
	Via canal 240 MI/d		Via canal 100 MI/d	
<i>Relative to:</i>	Baseline		Baseline	
Lechlade	Chl, SS	TON, NH4	DO, SS	PO4, Zn, NH4
Farmoor	Chl	TON		
Culham	Chl	TON	Chl, NH4	
Wallingford	Chl		Chl	Si
Caversham	Chl		Chl	
Staines				
Bray				
Chertsey				
Datchet				
Laleham				
Walton AW				
Walton TW				
Teddington				

Results Summary 2

Discharge to Lechlade (Upper Thames)

- Chlorophyll shows significant increases for all scenarios, but this should be considered in light of fact that the baseline model under-predicted chlorophyll.
- No significant impact on stations in lower Thames.

Similar to baseline	Elevated compared to baseline	Lower than baseline	Discharge downstream of site
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BOD	Chl	Cu	DO	NH4	PO4	Si	SS	TON	Zn
Biochemical Oxygen Demand	Chlorophyll	Dissolved copper	Dissolved oxygen	Ammoniacal nitrogen	Phosphate	Silicate	Suspended sediment	Total oxidised nitrogen	Zinc

Scenario:	Scenario3a_s5		Scenario3a_s8	
	Poor Severn WQ, 300 MI/d		Poor WQ in Severn plus low flow Thames, 300 MI/d	
Relative to:	Baseline		Baseline_s1 (low flow Thames)	
Cricklade	BOD, PO4, Cu, Zn, SS, Si	Chl, TON	BOD, PO4, Cu, Zn, SS, Si	PO4, TON, DO, NH4
Lechlade	BOD, PO4, Cu, Zn, SS, Si	Chl, TON	BOD, PO4, Cu, Zn, SS, Si	TON, DO, NH4
Farmoor	BOD, PO4, Cu, Zn, SS, Si	Chl, TON	BOD, PO4, Cu, Zn, SS, Si	TON
Culham	BOD, PO4, Cu, Zn, SS, Si	Chl, TON	PO4, SS	TON, NH4
Wallingford	PO4, Cu, Zn, SS, TON, Si	Chl, TON, Si	PO4, Zn, SS	Chl, PO4, TON, Si
Caversham	PO4, Cu, Zn, TON, SS, Si	TON, Si	PO4, Cu, Zn	Chl, TON, NH4
Staines	PO4, Zn		PO4, Zn	Chl, NH4
Bray	PO4, Zn		PO4, Zn, TON	Chl, TON
Chertsey	PO4, Zn		PO4, Zn	Chl, NH4
Datchet	PO4, Zn		PO4, Zn	Chl, NH4
Laleham	PO4, Zn		PO4, Zn	Chl, NH4
Walton AW	PO4, Zn		PO4, Zn	Chl, NH4
Walton TW	PO4, Zn		PO4, Zn, TON	Chl, PO4, NH4
Teddington	PO4, Zn		Chl, PO4, Zn, TON	Chl, PO4, NH4

Results Summary 3

(Poor WQ Severn)

3a_s5: Transferring poor WQ from the Severn results in PO4, Cu and Zn being elevated at times throughout the Thames. BOD is elevated to Culham and TON is reduced to Caversham.

3a_s8: When combined with low flows in the Thames, PO4 and Zn are elevated at all locations, BOD is elevated to Farmoor and Cu is elevated to Caversham.

Similar to baseline	Elevated compared to baseline	Lower than baseline	Discharge downstream of site
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BOD	Chl	Cu	DO	NH4	PO4	Si	SS	TON	Zn
Biochemical Oxygen Demand	Chlorophyll	Dissolved copper	Dissolved oxygen	Ammoniacal nitrogen	Phosphate	Silicate	Suspended sediment	Total oxidised nitrogen	Zinc

Scenario:	Baseline_s1		Scenario3a_s6		Scenario3a_s8		Scenario3a_s9	
	Low flow Thames		Low flow Thames, 300 MI/d		Poor WQ in Severn plus low flow Thames, 300 MI/d		Low flow Thames 600 MI/d	
Reference:	Baseline		Baseline_s1		Baseline_s1		Baseline_s1	
Cricklade	Chl, PO4, TON, NH4		Chl, Si	PO4, TON, NH4	BOD, PO4, Cu, Zn, SS, Si	PO4, TON, DO, NH4	Chl, Si	PO4, TON, NH4
Lechlade	PO4, NH4		Chl, Cu, SS, Si	PO4, Zn, TON, DO, NH4, Si	BOD, PO4, Cu, Zn, SS, Si	TON, DO, NH4	Chl, Cu, SS, Si	PO4, Zn, TON, DO, NH4, Si
Farmoor	NH4		Chl, Cu	PO4, TON	BOD, PO4, Cu, Zn, SS, Si	TON	Chl, Cu	PO4, TON
Culham	PO4, NH4	DO	Chl, DO, NH4	TON	PO4, SS	TON, NH4	Chl, DO, NH4	TON
Wallingford	PO4, NH4	DO	Chl		PO4, Zn, SS	Chl, PO4, TON, Si	Chl	
Caversham	Chl, PO4, TON, NH4		Chl	PO4	PO4, Cu, Zn	Chl, TON, NH4	Chl	PO4
Staines	Chl, TON, NH4				PO4, Zn	Chl, NH4		
Bray	Chl, TON, NH4				PO4, Zn, TON	Chl, TON		
Chertsey	Chl, NH4				PO4, Zn	Chl, NH4		
Datchet	Chl, NH4				PO4, Zn	Chl, NH4		
Laleham	Chl, NH4				PO4, Zn	Chl, NH4		
Walton AW	Chl, NH4				PO4, Zn	Chl, NH4		
Walton TW	Chl, PO4, NH4				PO4, Zn, TON	Chl, PO4, NH4		
Teddington	Chl, PO4, NH4		PO4		Chl, PO4, Zn, TON	Chl, PO4, NH4	PO4	

Results Summary 4

(Low flow Thames)

Base_s1: Under low flow, the baseline conditions are only changed with regard to increased Chl, NH4 and PO4.

3a_s6: Chl, SS and Si are also elevated in the upper Thames; this is not markedly different with a higher transfer flow rate (**3a_s9**).

3a_s8: When combined with low flows in the Thames, PO4 and Zn are elevated at all locations, BOD is elevated to Farmoor and Cu is elevated to Caversham.

Similar to baseline	Elevated compared to baseline	Lower than baseline	Discharge downstream of site
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BOD	Chl	Cu	DO	NH4	PO4	Si	SS	TON	Zn
Biochemical Oxygen Demand	Chlorophyll	Dissolved copper	Dissolved oxygen	Ammoniacal nitrogen	Phosphate	Silicate	Suspended sediment	Total oxidised nitrogen	Zinc

Scenarios:	Baseline_s2		Scenario3a_s7	
	Different WQ in Thames		Different WQ in Severn and Thames 300 MI/d	
Relative to:	Baseline		Baseline_s2	
Cricklade	Chl	BOD, PO4	BOD, PO4, Cu, Zn, NH4, SS, Si	TON, DO
Lechlade	Chl	PO4, TON	BOD, PO4, Cu, Zn, NH4, SS, Si	TON, DO
Farmoor	Chl	PO4	BOD, PO4, Cu, Zn, SS, Si	
Culham	Chl, Cu, Zn, Si	PO4, Si	PO4, Zn, SS	
Wallingford	Chl, Cu, Zn	PO4	PO4	
Caversham	Chl, Cu, Zn	PO4	PO4	
Staines	Chl, Cu, Zn	Si	PO4	
Bray	Chl, Cu, Zn	PO4, Si	PO4	
Chertsey	Chl, Cu, Zn	PO4, Si	PO4	
Datchet	Chl, Cu, Zn	PO4, Si	PO4	
Laleham	Chl, Cu, Zn	PO4, Si	PO4	
Walton AW	Chl, Cu, Zn	PO4, Si	PO4	
Walton TW	Cu, Zn	PO4, Si	PO4	
Teddington	Cu, Zn	Si	PO4	

Results Summary 5

(Different WQ)

Base_s2: Different WQ in the Thames results in elevated baseline Chl throughout the river and elevated baseline Cu and Zn downstream from Culham.

3a_s7: With the transfer and different WQ from the Severn, PO4 is elevated throughout the Thames and BOD, Cu, Zn, NH4, SS and Si are elevated to Farmoor.

Similar to baseline	Elevated compared to baseline	Lower than baseline	Discharge downstream of site
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BOD	Chl	Cu	DO	NH4	PO4	Si	SS	TON	Zn
Biochemical Oxygen Demand	Chlorophyll	Dissolved copper	Dissolved oxygen	Ammoniacal nitrogen	Phosphate	Silicate	Suspended sediment	Total oxidised nitrogen	Zinc

Scenarios:	Scenario 5		Scenario 5_s1		Scenario5_s2		Scenario5_s3	
	Via canal 240 MI/d		Via canal 100 MI/d		G&S canal WQ 100 MI/d		G&S canal WQ 240 MI/d	
Relative to:	Baseline		Baseline		Baseline		Baseline	
Cricklade								
Lechlade	Chl, SS	TON, NH4	DO, SS	PO4, Zn, NH4	Chl, Cu, Zn, TON, NH4	PO4, DO	Chl, Cu, Zn, TON, NH4	PO4,DO
Farmoor	Chl	TON			Chl, Cu, TON, NH4		Chl, PO4,Cu, Zn, TON, NH4	DO
Culham	Chl	TON	Chl, NH4		Chl, Cu, Zn, TON, NH4		Chl, Cu, Zn, TON, NH4	
Wallingford	Chl		Chl	Si	Chl, TON		Chl, Cu, Zn, TON, NH4	
Caversham	Chl		Chl		Chl, TON		Chl, Cu, TON, NH4	
Staines							Chl, TON	
Bray							Chl, TON	
Chertsey							Chl, TON	
Datchet							Chl, TON	
Laleham							Chl, TON	
Walton AW							Chl, NH4	
Walton TW								
Teddington								

Results Summary 6
(Different WQ, G&S Canal)
5_s2, 5_s3: Shows sensitivity to the magnitude of discharge. Chl and TON are elevated to Caversham at 100 MI/d and to Walton under 240 MI/d case. DO is reduced in the upper Thames with the effect seen as far as Farmoor under the higher flow case. Cu and Zn are elevated to Culham.

Similar to baseline	Elevated compared to baseline	Lower than baseline	Discharge downstream of site
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BOD	Chl	Cu	DO	NH4	PO4	Si	SS	TON	Zn
Biochemical Oxygen Demand	Chlorophyll	Dissolved copper	Dissolved oxygen	Ammoniacal nitrogen	Phosphate	Silicate	Suspended sediment	Total oxidised nitrogen	Zinc