

SITE NAME: Beckton STW
 DATE: November 2023

ODOUR RISK ASSESSMENT

Process Stage	Process Unit	Applicable Legislation	Normal		Abnormal			Nearest Customer/ Receptor	Offensive-ness (0-5)	Likelihood of Impact (0-5)	Odour Risk (<5 Low, >15 High)	Odour Impact	Mitigation Measures	Residual Odour Impact (L/M/H)	Responsibility for Mitigation Measures	Customer Communication Needed?	Improvement plan - Complete Yr/Action required /Nemo required	Assessment Number	Notes
			Odour Description	Constant/ Intermittent/ Occasional/ Rare	Event Description	Likelihood of Event/ Frequent/ Rare/ Planned	Length of Time of Release												
ADD EXTRA ROWS BELOW THIS ROW IF REQUIRED										0	-	-	-	-	-	-			
Works Inlet	Incoming Sewers - 5 Nos sewers deliver sewage to reception chambers	UWWT	Sewage	C			Tesco	2	1	2	Low	covered and OCU	-	-	N	C	BW11	Covered and odour controlled.	
Works Inlet	Incoming Sewers - 5 Nos sewers deliver sewage to reception chambers	UWWT	Sewage		Sewer inspection	R	Weeks	Tesco	2	2	4	Low	Flush the sewer before inspection	L	Trunk sewer group	N	N	BW12	Happens approximately every 4 years.
Works Inlet	Incoming Sewers - 5 Nos sewers deliver sewage to reception chambers	UWWT	Sewage		Failure of single barrel due to blockage or collapse	R	Months	Tesco	2	2	4	Low	Drain down and clean out	L	Trunk sewer group	N	N	BW13	Event situation. Never happened to date. The event would last at least a couple of months.
Works Inlet	Incoming Sewers - 5 Nos sewers deliver sewage to reception chambers	UWWT	Septic sewage		Septic sewage from low flows or sewer clearing	R	Days	Tesco	2	2	4	Low	Ensure odour control unit is fully operational	L	Process Controller / Tech 1	N	N	BW14	Happens once per year.
Works Inlet	Incoming Sewers - 5 Nos sewers deliver sewage to reception chambers	UWWT	Sewage		Large spillage due to combination of power failure and loss of emergency generation	R	Days	Tesco	2	2	4	Low	Lift the screen or reinstale power	L	Process Controller / Tech 1	N	C	BW15	Event situation. Happens once every 10 years.
Works Inlet	Return water pipe from grit channel - returns water to inlet	UWWT	Sewage	C			Tesco	3	2	6	Medium	-	-	-	N	C	BW16	Happens daily. Channel covered and discharged low enclosed.	
Works Inlet	Store Road pumping station discharge	UWWT	Sewage and trade effluent	I			Tesco	4	2	8	Medium	-	-	-	N	N	BW17	Covered and odour controlled.	
Works Inlet	Gascogne Road pumping station	UWWT	Sewage	C			Tesco	2	2	4	Low				N	N	BW18	Covered and odour controlled.	
Site services - Interceptor sewer	Sewer - Interceptor Sewer	UWWT	Site drainage		Failure of liquor pumping station	R	Weeks	Gallions Reach and Gemini Business Park	4	2	8	Medium	Sewer covered	-	-	N	C	SS1	Covered and odour controlled.
Pumped flow from Lee Tunnel	Pumps - 1 duty/3 standby; 2 dry wells	UWWT	Storm sewage	O			Tesco and Gallions Reach	2	1	2	Low	Within a sealed shaft			N	N	LT0 Future	Covered and odour controlled.	
Pumped flow from Lee Tunnel	Pumps - 1 duty/3 standby; 2 dry wells	UWWT	Storm sewage		All Pump failure - power supply lost	R	Hours	Tesco and Gallions Reach	2	1	2	Low	Use shaft drainage pump	L	Process Controller / Tech 1	N	N	LT1 Future	Event situation.
Odour Control Unit - Pumped flow from Lee Tunnel	OCU - Duty/standby Activated carbon streams	UWWT	Storm sewage		OCU failed	R	Days	Tesco and Gallions Reach	2	2	4	Low	Abbey Mills odour extraction	L	Process Controller / Tech 1	N	N	LT2 Future	Event situation.
Odour Control Unit - Overflow and River outfall Shaft	OCU - Duty/standby Activated carbon streams	UWWT	Storm sewage		OCU failed	R	Days	Gallions Reach and Gemini Business Park	2	1	2	Low	Shaft Odour Control Unit available	L	Process Controller / Tech 1	N	N	LT3 Future	Event situation.
Lee Tunnel Transfer Pipelines	2 Nos Pipelines and distribution chambers		Storm sewage	O			Tesco and Gallions Reach	2	1	2	Low					N	LT11 Future	Pipelines self drained.	
Lee Tunnel Transfer Pipelines	2 Nos Pipelines and distribution chambers		Storm sewage		OCU failed	R	Days	Tesco and Gallions Reach	2	1	2	Low	Drain down pipelnetes and flush out	L	Process Controller / Tech 1	N	N	LT12 Future	
Screening 1	Coarse screens - 6 Nos 25mm pull screens that remove large solids	UWWT	Sewage	C			Tesco and Gallions Reach	2	1	2	Low	channels are covered	-	-	N	N	BS 1	Covered and odour controlled.	
Screening 1	Coarse screens - 6 Nos 25mm pull screens that remove large solids	UWWT	Sewage		One screen / pit out for maintenance	F	Weeks	Tesco and Gallions Reach	2	2	4	Low	Flush out	L	Process Controller / Tech 1	N	N	BS 2	
Screening 1	Coarse screens - 6 Nos 25mm pull screens that remove large solids	UWWT	Septic sewage		Septic sewage from low flows or sewer clearing	R	Days	Tesco and Gallions Reach	2	2	4	Low	Ensure odour control unit is fully operational	L	Process Controller / Tech 1	N	C	BS 3	Happens once per year.
Screening 1	Coarse screens - 6 Nos 25mm pull screens that remove large solids	UWWT	Sewage		Large spillage due to combination of power failure and loss of emergency generation	R	Days	Tesco and Gallions Reach	2	2	4	Low	Ensure odour control unit is fully operational	L	Process Controller / Tech 1	N	C	BS 4	Event situation.
Screening 1	Storm overflow weir - Storm overflow to river	UWWT	Storm sewage		During storm flows	R	Hours	Creekmouth	2	0	0	None	Odour controlled	L	Process Controller / Tech 1	N	N	BS 5	
Screening 1	Coarse screen conveyor belt	UWWT	Sewage screenings	C			Tesco	2	1	2	Low	Conveyor runs for a mandatory 20mins every 60mins	-	-	N	N	BS 6		
Screening 1	Coarse screen conveyor belt	UWWT	Sewage screenings		Maintenance	P	Hours	Tesco	2	1	2	Low	Manually remove screenings	L	Process Controller / Tech 1	N	N	BS 7	
Screening 1	Skips - Skips for Coarse screens (underneath conveyor, but open to atmosphere)	UWWT	Sewage screenings	C			Tesco	3	2	6	Medium	-	-	-	N	N	BS 8		
Screening 1	Skips - Skips for Coarse screens (underneath conveyor, but open to atmosphere)	UWWT	Sewage screenings		Skips not changed over for a number of days	R	Days	Tesco	4	2	8	Medium	Manually transfer with telehandler to open skips in skip handling building. Area that has been inspected.	M	Process Controller / Tech 1	N	N	BS 9	

Imports	Cess imports (Fine and coarse screens) - Discharge of chemical waste and domestic waste (eg portaloos)	UWWT	Cess waste	I				Gallions Reach and Tesco	4	1	4		Low	Diverted to another site	-	-	N	C	C1	Covered and odour controlled channels.
Imports	Cess imports (Fine and coarse screens) - Discharge of chemical waste and domestic waste (eg portaloos)	UWWT	Cess waste		Spillage / pipe rupture on discharge	R	Hours	Gallions Reach and Tesco	4	2	8		Medium	Hose down area - Covered and odour controlled	L	Process Controller / Tech 1	N	C	C2	Customer communication needed if longer than half a day.
Imports	Cess imports (Fine and coarse screens) - Discharge of chemical waste and domestic waste (eg portaloos)	UWWT	Cess waste		OCU failure	R	Hours	Gallions Reach and Tesco	4	4	16		High	Find cause and resolve	L	SAP / Process Controller / Tech 1 / M&E / Site Manager	N	N	C3	
Imports	Maintenance on the swabe (discharge) system	UWWT	Cess waste		Maintenance	P	Hours	Gallions Reach and Tesco	4	1	4		Low	Divert to another site	L	Process Controller / Tech 1	Y	N	C4	Notify contractor of maintenance and diversion.
Imports	Sludges imported - From other sites and self generated	EPR	Sludge waste	O				Gallions Reach and Tesco	4	2	8		Medium		-	-	N	C	S1	Covered and odour controlled channels.
Imports	Sludges imported - From other sites and self generated	EPR	Sludge waste		Spillage / pipe rupture on discharge	R	Hours	Gallions Reach and Tesco	4	2	8		Medium	Hose down area - Covered and odour controlled	M	Process Controller / Tech 1	N	C	S2	Customer communication needed if longer than half a day.
Imports	Sludges imported - From other sites and self generated	EPR	Sludge waste		OCU failure	R	Hours	Gallions Reach and Tesco	4	4	16		High	Find cause and resolve	M	SAP / Process Controller / Tech 1 / M&E / Site Manager	N	N	S3	
Grit	Grit channels - 6 Nos constant velocity grit channels to remove grit	UWWT	Sewage	C				Gallions Reach and Tesco	2	1	2		Low	Covered	-	-	N	C	BG 1	Covered and odour controlled.
Grit	Grit channels - 6 Nos constant velocity grit channels to remove grit	UWWT	Sewage		Grit channel shutdown to remove compacted grit	R	Weeks	Gallions Reach and Tesco	2	1	2		Low	Flush and hose down lane	L	TM / Tech 1	N	C	BG 2	
Grit	Grit classifier and hard standing - Grit deposited under the classifiers before removal to allow for drying.	UWWT	Sewage	C				Gallions Reach and Tesco	2	1	2		Low	Sheeted curtain to cover	-	-	N	C	BG 3	Classifiers are covered and bounded area is enclosed.
Grit	Grit hard standing - Grit deposited before removal to allow for drying - Grit area	UWWT	Sewage	O				Tesco	3	3	9		Medium	Ensure grit is clean and free from other debris. Grit shall be loaded from the front lawns/skips to SAS	-	-	N	C	BG 4	Removed from site as soon as possible.
Screening 2	Drainage pumping stations and return SAS liquors - discharges to intercepting sewers just before fine screens	UWWT	Return liquors	I				Gallions Reach and Gemini Business Park	2	1	2		Low	Enclosed buried sewer	-	-	N	N	BS 10	
Screening 2	Fine screens - 8 Nos 6 inside screening building (naturally ventilated) 2 outside	UWWT	Sewage	C				Gallions Reach and Gemini Business Park	2	1	2		Low	6 inside screening building (naturally ventilated) 2 outside	-	-	N	N	BS 11	Feed channels covered and odour controlled / 6 No screens are enclosed in a building but not odour controlled; screens 7 and 8 are outside the building.
Screening 2	Fine screens - 8 Nos 6 inside screening building (naturally ventilated) 2 outside	UWWT	Sewage		Breakdown maintenance	F	Weeks	Gallions Reach and Gemini Business Park	2	1	2		Low	Flush out and drain down	L	Process Controller / Tech 1	N	N	BS 12	
Screening 2	Screw conveyor - Screw conveyor transfers screenings to screenings treatment plant	UWWT	Sewage screenings	C				Gallions Reach and Gemini Business Park	2	1	2		Low	Sealed unit	-	-	N	N	BS 13	
Screening 2	Screw conveyor - Screw conveyor transfers screenings to screenings treatment plant	UWWT	Sewage screenings		Maintenance	P	Hours	Gallions Reach and Gemini Business Park	2	1	2		Low	Use standby equipment	L	Process Controller / Tech 1	N	N	BS 14	
Screening 2	Fine screens - Skips for fine screens (inside skip handling plant)	UWWT	Sewage screenings	C				Gallions Reach and Gemini Business Park	3	1	3		Low	Enclosed building	-	-	N	C	BS 15	Enclosed in a building.
Screening 2	Fine screens - Skips for fine screens (outside skip handling plant)	UWWT	Sewage screenings		Skips not changed over for a number of days	R	Days	Gallions Reach and Gemini Business Park	3	3	9		Medium	Manually transfer with telehandler to open skips in skip handling building / Use standby plant	M	Process Controller / Tech 1	N	N	BS 17	
Primary Treatment	PST Feed channels - Return liquors	UWWT	Sewage	C				Gallions Reach and Gemini Business Park	2	1	2		Low		-	-	N	C	BPT 1	Covered and odour controlled.
Primary Treatment	PST Feed channels - Return liquors	UWWT	Sewage		Dig out grit from feed channel	P	Months	Gallions Reach and Gemini Business Park	3	2	6		Medium	Maintain 50% odour controlled - Perform the task as quickly as possible	L	TM / Tech 1	N	N	BPT 2	
Primary Treatment	PST Feed channels - Flow to Treatment Meters	UWWT	Sewage	C				Gallions Reach and Gemini Business Park	2	1	2		Low	PST return liquors are covered	-	-	N	C	BPT 3	Covered and odour controlled.
Primary Treatment	PST Feed channels - Flow to Treatment Meters	UWWT	Sewage		Maintenance and cleaning of instruments	P	Hours	Gallions Reach and Gemini Business Park	2	1	2		Low	Do one side at a time and do as quickly as possible / leave covers closed when no works carried out	L	TM / Tech 1	N	N	BPT 4	
Primary Treatment	Crude sewage channel to PST inlet - PST inlet	UWWT	Sewage	C				Gallions Reach and Gemini Business Park	2	1	2		Low	Covered	-	-	N	C	BPT 5	Covered and odour controlled.
Primary Treatment	Primary settlement tanks - 16 Nos arranged in 2 sets of 8, to settle sewage	UWWT	Sewage / Sludge	C				Gallions Reach and Gemini Business Park	2	1	2		Low	Covered	-	-	N	C	BPT 6	Covered and odour controlled.
Primary Treatment	PSTs 1-8 and 9-16	UWWT	Sludge		Tanks drained down	P	Days	Gallions Reach and Gemini Business Park	3	1	3		Low	Covered and odour controlled to empty - Push out tank	L	Process Controller / Tech 1	N	N	BPT 7	Happens once per month.
Primary Treatment	PSTs 1-8 and 9-16	UWWT	Sewage / Sludge		Particularly soumy (failure of surface scraper)	F	Days	Gallions Reach and Gemini Business Park	2	1	2		Low	Covered and odour controlled	L	Process Controller / Tech 1	N	N	BPT 8	
Primary Treatment	PSTs 1-8 and 9-16	UWWT	Sewage / Sludge		Normal operation with particularly hot weather	R	Weeks	Gallions Reach and Gemini Business Park	3	1	3		Low	Covered and odour controlled	L	Process Controller / Tech 1	N	N	BPT 9	
Primary Treatment	PSTs 1-8 and 9-16	UWWT	Sewage / Sludge		High sludge level in tank	R	Weeks	Gallions Reach and Gemini Business Park	3	1	3		Low	Covered and odour controlled	L	Process Controller / Tech 1	Y	N	BPT 10	Refer to Appendix 8 for Customer Communications requirements.
Primary Treatment	PSTs 1-8 and 9-16	UWWT	Sewage / Sludge		Normal operation with failed bottom scraper	R	Weeks	Gallions Reach and Gemini Business Park	3	1	3		Low	Covered and odour controlled	L	Process Controller / Tech 1	Y	N	BPT 11	Refer to Appendix 8 for Customer Communications requirements.
Primary Treatment	PSTs 1-8 and 9-16	UWWT	Sewage / Sludge		Maintenance of surface scraper and beach	P	Days	Gallions Reach and Gemini Business Park	2	1	2		Low	Covered and odour controlled	L	TM / Tech 1	N	N	BPT 12	Happens daily. Close hatches as soon as possible.
Primary Treatment	PSTs 1-8 and 9-16	UWWT	None		Maintenance of bottom scrapers and hydraulic RAMs	P	Days	Gallions Reach and Gemini Business Park	0	0	0		None	Covered and odour controlled / Tank empty and cleaned before maintenance activity	-	TM / Tech 1	N	N	BPT 13	One task per month.
Primary Treatment	PSTs 1-8 and 9-16	UWWT	Sewage / Sludge		OCU failure	R	Hours	Gallions Reach and Gemini Business Park	2	4	8		Medium	Find cause and resolve	L	SAP / Process Controller / Tech 1 / M&E / Site Manager	N	N	BPT 14	
Primary Treatment	PSTs 1-8 9-16 - bypass valve desludging	UWWT	Sewage / Sludge	C				Gallions Reach and Gemini Business Park	4	1	4		Low		-	-	N	C	BPT 15	Covered and odour controlled.
Primary Treatment	PSTs 1-8 and 9-16 - bypass valve desludging	UWWT	Sewage / Sludge		Failure	R	Days	Gallions Reach and Gemini Business Park	4	1	4		Low	Covered and odour controlled	L	Process Controller / Tech 1	N	N	BPT 16	
Primary Treatment	PSTs 1-8 and 9-16 - bypass valve desludging	UWWT	Sewage / Sludge		Normal operation with one failed Zickert bottom scraper causing rising sludge	R	Days	Gallions Reach and Gemini Business Park	4	1	4		Low	Covered and odour controlled	L	Process Controller / Tech 1	N	N	BPT 17	
Aeration	Settled sewage channel - Transfer of settled sewage to aeration lanes	UWWT	Settled sewage	C				Gallions Reach, Thames view estate, Showcase cinema, Creekmoor, Gallions Reach and Gemini Business Park	2	1	2		Low		-	-	N	C	BA 1	Covered and odour controlled.

Aeration	Settled sewage channel - Transfer of settled sewage to aeration lanes	UWWT	Settled sewage		Floating crust/fat/vegetation	R	Weeks	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	1	2	Low	Covered and odour controlled - Automatic decussing systems	L	TM / Tech 1	N	Y	BA 2	
Aeration	Settled sewage channel - Transfer of settled sewage to aeration lanes	UWWT	Settled sewage		Leakage at the expansion joints onto road	F	Weeks	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	1	2	Low	Clean up	L	TM / Tech 1	N	Y	BA 3	Happens during high tide periods.
Aeration	Settled sewage channel - Transfer of settled sewage to aeration lanes	UWWT	Settled sewage		OCU failure	R	Hours	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	4	8	Medium	Find cause and resolve	L	SAP / Process Controller / Tech 1 / MME / Site Manager	N	N	BA 4	
Aeration	Aeration lanes - 20 Nos lanes, divided into ASP2 (6 Nos lanes), ASP3 (8 Nos lanes) and ASP 4 (6 Nos lanes)	UWWT	Mixed liquor	C				Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	1	1	1	Low		-	-	N	N	BA 5	
Aeration	Aeration lanes - 20 Nos lanes, divided into ASP2 (6 Nos lanes), ASP3 (8 Nos lanes) and ASP 4 (6 Nos lanes)	UWWT	Mixed liquor		Normal with foam/mouse surface layer	R	Weeks	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	1	2	Low	Review process settings	L	Process Controller / Tech 1	N	N	BA 6	
Aeration	Aeration lanes - 20 Nos lanes, divided into ASP2 (6 Nos lanes), ASP3 (8 Nos lanes) and ASP 4 (6 Nos lanes)	UWWT	Mixed liquor / Ammonia		High ammonia in lanes	R	Days	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	2	4	Low	Increase aeration blowers	L	Process Controller / Tech 1	N	N	BA 7	
Aeration	Aeration lanes - 20 Nos lanes, divided into ASP2 (6 Nos lanes), ASP3 (8 Nos lanes) and ASP 4 (6 Nos lanes)	UWWT	Mixed liquor		High turbulence caused by broken air man	R	Weeks	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	1	1	1	Low	Turn air down to that zone until drain down	L	Process Controller / Tech 1	N	N	BA 8	
Aeration	Aeration lanes - 20 Nos lanes, divided into ASP2 (6 Nos lanes), ASP3 (8 Nos lanes) and ASP 4 (6 Nos lanes)	UWWT	Mixed liquor		Maintenance of air valves	R	Weeks	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	1	1	1	Low	Remove tank out of service	L	Process Controller / Tech 1	N	N	BA 9	
Aeration	Aeration lanes - 20 Nos lanes, divided into ASP2 (6 Nos lanes), ASP3 (8 Nos lanes) and ASP 4 (6 Nos lanes)	UWWT	Mixed liquor		Repairs to air domes	P	Months	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	2	4	Low	Flush out tank	L	Process Controller / Tech 1	N	N	BA 10	
Aeration	Aeration lanes - 20 Nos lanes, divided into ASP2 (6 Nos lanes), ASP3 (8 Nos lanes) and ASP 4 (6 Nos lanes)	UWWT	Mixed liquor		Normal operation with particularly hot weather	R	Weeks	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	3	1	3	Low	Increase aeration blowers	L	Process Controller / Tech 1	N	N	BA 11	
Final settlement	Final settlement tanks - 88 Nos divided into ASP1 (8 Nos tanks), ASP2 (16 Nos tanks), ASP3 (48 Nos tanks) and ASP 4 (16 Nos tanks)	UWWT	Activated sludge	C				Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	1	1	1	Low		-	-	N	N	BFS 1	
Final Settlement	Final settlement tanks - into ASP1 (8 Nos tanks)	UWWT	Activated sludge		Inlet penstock failed	R	Days	Showcase and Thamesview estate	1	1	1	Low	Reduce flow to ASP2 and stop mix liquor flow pumping to ASP1	L	Process Controller / Tech 1	N	N	BFS 2	
Final Settlement	Final settlement tanks - into ASP2 (16 Nos tanks)	UWWT	Activated sludge		Inlet penstock failed	R	Days	Showcase and Thamesview estate	1	1	1	Low	Isolate using air bag on inlet pipework	L	Process Controller / Tech 1	N	N	BFS 3	
Final Settlement	Final settlement tanks - into ASP3 (48 Nos tanks)	UWWT	Activated sludge		Inlet penstock failed	R	Days	Showcase and Thamesview estate	1	1	1	Low	Bank of 6 FSTs drained down for works being carried out	L	Process Controller / Tech 1	N	N	BFS 4	
Final Settlement	Final settlement tanks - into ASP4 (16 Nos tanks)	UWWT	Activated sludge		Inlet penstock failed	R	Days	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	1	1	1	Low	Fit isolation stop legs	L	Process Controller / Tech 1	N	N	BFS 5	
Final Settlement	Final settlement tanks - 88 Nos divided into ASP1 (8 Nos tanks), ASP2 (16 Nos tanks), ASP3 (48 Nos tanks) and ASP 4 (16 Nos tanks)	UWWT	Activated sludge / Ammonia		High Ammonia in tanks	R	Days	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	1	2	Low	Increase aeration blowers	L	Process Controller / Tech 1	N	N	BFS 6	
Final Settlement	Final settlement tanks - 88 Nos divided into ASP1 (8 Nos tanks), ASP2 (16 Nos tanks), ASP3 (48 Nos tanks) and ASP 4 (16 Nos tanks)	UWWT	Activated sludge		Scraper fails (sewage goes septic)	R	Days	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	3	2	6	Medium	Drain down, flush out and repair as quickly as possible	L	Process Controller / Tech 1	N	N	BFS 7	
Final Settlement	Final settlement tanks - 88 Nos divided into ASP1 (8 Nos tanks), ASP2 (16 Nos tanks), ASP3 (48 Nos tanks) and ASP 4 (16 Nos tanks)	UWWT	Activated sludge		Sludge air lift fails	R	Days	Showcase and Thamesview estate	2	1	2	Low	Take off stream and repair	L	Process Controller / Tech 1	N	N	BFS 8	
Final Settlement	Final settlement tanks - 88 Nos divided into ASP1 (8 Nos tanks), ASP2 (16 Nos tanks), ASP3 (48 Nos tanks) and ASP 4 (16 Nos tanks)	UWWT	Activated sludge		Tank drained down for maintenance	P	Days	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	2	4	Low	Flush out tank	L	Process Controller / Tech 1	N	N	BFS 9	
Final Settlement	Final settlement tanks - 88 Nos divided into ASP1 (8 Nos tanks), ASP2 (16 Nos tanks), ASP3 (48 Nos tanks) and ASP 4 (16 Nos tanks)	UWWT	Activated sludge		Normal but with scum/mouse on surface	R	Days	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	2	4	Low	Check operational maldard pump and drain down if required	L	Process Controller / Tech 1	N	N	BFS 10	
Effluent discharge to river	Effluent airlifts - Running during high tides and high flows	UWWT	Final effluent	O				Showcase and Thamesview estate	0	0	0	None		-	-	N	N	BED 1	
Effluent discharge to river	Final outfall - Two open channels (from ASPs), which join and flow to main outfall to Thames. Auxiliary outfall to Barking creek.	UWWT	Final effluent	C				Showcase, Thamesview estate and Creekmouth	0	0	0	None		-	-	N	N	BED 2	
Effluent discharge to river	ASP4 discharge into ASP3 channel	UWWT	Final effluent	C				Showcase and Thamesview estate	0	0	0	None		-	-	N	N	BED 3	

Raw sludge handling	Raw sludge pumps - 4 Nos pumps located in raw sludge pumping station	UWWT	Raw sludge	C					Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	4	1	4	Low	In a deep enclosed dry well	-	-	N	C	BRSH 1	Covered and odour controlled.
Raw sludge handling	Raw sludge pumps - 4 Nos pumps located in raw sludge pumping station	UWWT	Raw sludge		Pump failed	R	Hours		Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	4	1	4	Low	Use stand by plant and wash down facility	L	M&E	N	C	BRSH 2	Enclosed in a ventilated building.
Raw sludge handling	Raw sludge pumps - 4 Nos pumps located in raw sludge pumping station	UWWT	Raw sludge		Pump out for maintenance	P	Hours		Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	4	1	4	Low	Use stand by plant and wash down facility	L	M&E	N	C	BRSH 3	Enclosed in a ventilated building.
Raw sludge handling	Raw sludge pumps - 4 Nos pumps located in raw sludge pumping station	UWWT	Raw sludge		Sludge leak from pump	R	Hours		Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	4	1	4	Low	Use stand by plant, wash down facility and sump pumps	L	Process Controller / Tech 1	N	C	BRSH 4	Enclosed in a ventilated building.
Raw sludge handling	Raw sludge wet well	UWWT	Raw sludge	C					Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	4	1	4	Low	Covered	-	-	N	C	BRSH 5	Enclosed and odour controlled.
Raw sludge handling	Raw sludge wet well	UWWT	Raw sludge		Wet well drained down for maintenance requiring to use other uncovered wet well (PSTs 1-8 drainage pumping station)	P	Days		Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	4	2	8	Medium	Flush wet well and drain it down / Minimise outage time	M	Team Manager	N	N	BRSH 6	Maintenance would be carried out on wet well once every couple of years.
Raw sludge handling and Drainage	PSTs 1-8 drainage pumping station	UWWT	Settled sewage / Raw sludge	I					Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	3	1	3	Low	Enclosed building, dry well	-	-	N	C	BRSD 1	Previously used as a raw sludge pumping station. Now available as a raw sludge back up pumping station.
Raw sludge handling and Drainage	PSTs 1-8 drainage pumping station	UWWTD	Raw sludge		Used as a raw sludge back up pumping station	R	Weeks		Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	4	2	8	Medium	Minimise operational time / Flush pump after use	L	Team Manager / Process Controller	N	N	BRSD 2	Event situation. Never happened to date.
Raw sludge handling and Drainage	PSTs 1-8 drainage pumping station	UWWTD	Settled sewage / Raw sludge		Draining PSTs 1-8	P	Days		Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	3	2	6	Medium	Flush tank after draining	L	Team Manager / Process Controller / Tech 1	N	N	BRSD 3	
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge	C					Gallions Reach and Gemini Business Park	4	1	4	Low	Covered	-	-	N	C	BRST 1	Covered and odour controlled.
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge / Supernatant liquor		Weir cleaning / Maintenance	P	Hours		Gallions Reach and Gemini Business Park	4	2	8	Medium	Minimise operational time and covers opened at any one time	L	Team Manager / Process Controller / Tech 1	N	C	BRST 2	Ensure covers are closed after task complete.
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge / Supernatant liquor		Blocked launders	R	Days		Gallions Reach and Gemini Business Park	4	2	8	Medium	Minimise operational time and covers opened at any one time	L	Team Manager / Process Controller / Tech 1	N	C	BRST 3	Ensure covers are closed after task complete.
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge		Failed scraper	R	Weeks		Gallions Reach and Gemini Business Park	4	2	8	Medium	Drain down and clean tank using tanker	L	Team Manager / Process Controller / Tech 1	N	C	BRST 4	
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge		Pump failed	R	Hours		Gallions Reach and Gemini Business Park	4	2	8	Medium	Use stand by plant and wash down facility	L	Team Manager / Process Controller / Tech 1 / M&E	N	C	BRST 5	
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge		Pump out for maintenance	P	Hours		Gallions Reach and Gemini Business Park	4	2	8	Medium	Use stand by plant and wash down facility	L	Team Manager / Process Controller / Tech 1 / M&E	N	C	BRST 6	
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge		Higher than normal solids concentration from PSTs	R	Days		Gallions Reach and Gemini Business Park	4	2	8	Medium	Ensure all odour control unit stages are fully operational and use drum thickeners	L	Team Manager / Process Controller / Tech 1	Y	C	BRST 7	Refer to Appendix 8 for Customer Communications requirements. Consider LA notification if prolonged event.
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge / Supernatant liquor		Maintenance which requires stopping flow, but not draining tank	R	Hours		Gallions Reach and Gemini Business Park	4	2	8	Medium	Open one cover at a time and perform task as quickly as possible	L	Process Controller / M&E	N	C	BRST 8	
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge		Normal operation but with particularly hot weather	R	Weeks		Gallions Reach and Gemini Business Park	4	2	8	Medium	Ensure all odour control unit stages are fully operational and use drum thickeners to maximum capacity	L	Team Manager / Process Controller / Tech 1	N	C	BRST 9	
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge		Multiple tanks failure	R	Weeks		Gallions Reach and Gemini Business Park	4	2	8	Medium	Ensure all odour control unit stages are fully operational and use drum thickeners to maximum capacity	L	Site Manager / Team Manager / Process Controller / M&E / Tech 1	Y	C	BRST 10	Refer to Appendix 8 for Customer Communications requirements. Consider LA notification if prolonged event.
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge / Supernatant liquor		Sludge spillage	R	Hours		Gallions Reach and Gemini Business Park	4	2	8	Medium	Hose down area	L	Tech 1	N	C	BRST 11	
Raw sludge thickening	PFTs - 4 Nos PFT tanks	EPR	Raw sludge / Supernatant liquor		Failure of odour control unit to PFTs	R	Hours		Gallions Reach and Gemini Business Park	4	4	16	High	Use drum thickeners to maximum capacity and reduce raw sludge content	L	Site Manager / Process Controller / Tech 1	Y	C	BRST 12	Refer to Appendix 8 for Customer Communications requirements. Consider LA notification if prolonged event.
Raw sludge thickening	Sludge pumping from PFTs - 6 Nos pumps, 2 Nos pumping stations	EPR	Raw sludge	C					Gallions Reach and Gemini Business Park	4	1	4	Low	Enclosed building			N	N	BRST 13	
Raw sludge thickening	Sludge pumping from PFTs - 6 Nos pumps, 2 Nos pumping stations	EPR	Raw sludge		Pump failed	R	Hours		Gallions Reach and Gemini Business Park	4	2	8	Medium	Use stand by pumps and wash down facility	L	Process Controller / Tech 1 / M&E	N	N	BRST 14	
Raw sludge thickening	Sludge pumping from PFTs - 6 Nos pumps, 2 Nos pumping stations	EPR	Raw sludge		Pump out for maintenance	P	Hours		Gallions Reach and Gemini Business Park	4	2	8	Medium	Use stand by pumps and wash down facility	L	Process Controller / Tech 1 / M&E	N	N	BRST 15	
Raw sludge thickening	Drum Thickeners	EPR	Raw sludge	C					Gallions Reach and Gemini Business Park	4	1	4	Low	Covered inside a building and odour controlled.			N		BRST 16	Enclosed building and drum thickeners contained and odour controlled.
Raw sludge thickening	Drum Thickeners	EPR	Raw sludge		Spillage / Leakage	R	Hours		Gallions Reach and Gemini Business Park	4	2	8	Medium	Clear spillage, wash down and repair	L	Process Controller / Tech 1 / M&E	N	N	BRST 17	
Raw sludge thickening	Drum Thickeners	EPR	Raw sludge		OCU failure	R	Hours		Gallions Reach and Gemini Business Park	4	4	16	High	Find cause and resolve	L	SAP / Process Controller / Tech 1 / M&E / Site Manager	N	N	BRST 18	

RAS transfer	RAS return - ASP4: covered pipeworks, ASP 3 & 8 No open channels, ASP 2: 1 No open channel ASP 1: 8 Nos open sumps.	UWWT	Activated sludge	C						Gallions Reach, Thames view estate, Showcase cinema, Creekmouth and Beckton Triangle Retail Park & Gateway Retail Park	2	1	2	Low				N	N	BRT 1	
RAS transfer	RAS return - ASP4: covered pipeworks, ASP 3 & 8 No open channels, ASP 2: 1 No open channel ASP 1: 8 Nos open sumps.	UWWT	Activated sludge		Normal operation but with particularly hot / dry weather	R	Weeks			Gallions Reach, Thames view estate, Showcase cinema, Creekmouth and Beckton Triangle Retail Park & Gateway Retail Park	3	1	3	Low	Increase aeration blowers	L	Process Controller	N	N	BRT 2	
RAS transfer	RAS return - ASP4: covered pipeworks, ASP 3 & 8 No open channels, ASP 2: 1 No open channel ASP 1: 8 Nos open sumps.	UWWT	Activated sludge		Normal operation but with storm flows following hot / dry weather	R	Hours			Gallions Reach, Thames view estate, Showcase cinema, Creekmouth and Beckton Triangle Retail Park & Gateway Retail Park	3	1	3	Low	Increase aeration blowers	L	Process Controller	N	N	BRT 3	
RAS transfer	RAS sumps and pumps on ASP 1	UWWT	Activated sludge	C						Creekmouth	2	1	2	Low				N	N	BRT 4	Open vented chamber
SAS transfer	SAS pumping - Pipes underground	UWWT	Activated sludge	C						Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	0	0	Low				N	N	BST 1	
SAS transfer	SAS buffer tank - 1 No tank	UWWT	Activated sludge	C						Gemini Business Park and Creekmouth	2	2	4	Low				N	N	BST 2	Open tank.
SAS transfer	SAS buffer tank - 1 No tank	UWWT	Activated sludge		Launder blocked / level inhibit failure leading to spillage	R	Hours			Gemini Business Park and Creekmouth	2	3	6	Medium	Control level below launder and clean up spillage	L	Process Controller / Tech 1 / JCA	N	N	BST 3	Never happened to date.
SAS transfer	SAS buffer tank - 1 No tank	UWWT	Activated sludge		Tank failure	R	Weeks			Gallions Reach, Gemini Business Park, Thames view estate, Showcase cinema, Creekmouth and Beckton Triangle Retail Park & Gateway Retail Park	2	5	10	Medium	Clear up spillage and stop surplusing	L	Site Manager / Process Controller / Tech 1 / M&E	Y	N	BST 4	Event situation. Consider external communication.
SAS thickening	Aquabelts - 9 Nos belts	EPR	Activated sludge	C						Gemini Business Park and Creekmouth	3	1	3	Low	Enclosed building			N	N	BST 5	Enclosed in the SAS building with forced air ventilation.
SAS thickening	Aquabelts - 9 Nos belts	EPR	Activated sludge		Spillage / Pipe rupture / Blockage	R	Hours			Gemini Business Park and Creekmouth	3	1	3	Low	Clear up spillage and repair fault	L	Tech 1 / M&E	N	N	BST 6	
Sludge blending	15 Nos Sludge Blending / Buffer Tanks (6 Nos Sludge Buffer / Storage Tanks), 3 Nos Riverside Blending Tanks, 4 Nos Raw Sludge Buffer Tanks, 1 No Thickened SAS Buffer Tank and 1 No Blending Tank - covered and odour controlled via the 3 Nos stages OCU 1	EPR	Raw sludge / Blended sludge / Activated sludge	C						Gallions Reach, Gemini Business Park, Thames view estate, Showcase cinema, Creekmouth and Beckton Triangle Retail Park & Gateway Retail Park	4	1	4	Low	Covered with odour control			N	C	BSB 1	Covered and odour controlled.
Sludge blending	15 Nos Sludge Blending / Buffer Tanks (6 Nos Sludge Buffer / Storage Tanks), 3 Nos Riverside Blending Tanks, 4 Nos Raw Sludge Buffer Tanks, 1 No Thickened SAS Buffer Tank and 1 No Blending Tank - covered and odour controlled via the 3 Nos stages OCU 1	EPR	Raw sludge / Blended sludge / Activated sludge		Sludge spillage / Overflow	R	Hours			Gallions Reach, Gemini Business Park, Thames view estate, Showcase cinema, Creekmouth and Beckton Triangle Retail Park & Gateway Retail Park	4	3	12	Medium	Stop pumping to tank overflowing and clear up spillage	L	Process Controller / Tech 1	N	C	BSB 2	
Sludge blending	15 Nos Sludge Blending / Buffer Tanks (6 Nos Sludge Buffer / Storage Tanks), 3 Nos Riverside Blending Tanks, 4 Nos Raw Sludge Buffer Tanks, 1 No Thickened SAS Buffer Tank and 1 No Blending - covered and odour controlled via the 3 Nos stages OCU 1	EPR	Raw sludge / Blended sludge / Activated sludge		Inspection hatch left open	R	Hours			Gallions Reach, Gemini Business Park, Thames view estate, Showcase cinema, Creekmouth and Beckton Triangle Retail Park & Gateway Retail Park	4	2	8	Medium	Close hatch	L	Tech 1	N	C	BSB 3	
Sludge blending	15 Nos Sludge Blending / Buffer Tanks (6 Nos Sludge Buffer / Storage Tanks), 3 Nos Riverside Blending Tanks, 4 Nos Raw Sludge Buffer Tanks, 1 No Thickened SAS Buffer Tank and 1 No Blending - covered and odour controlled via the 3 Nos stages OCU 1	EPR	Raw sludge / Blended sludge / Activated sludge		Failure of odour control unit	R	Hours			Gallions Reach, Gemini Business Park, Thames view estate, Showcase cinema, Creekmouth and Beckton Triangle Retail Park & Gateway Retail Park	4	3	12	Medium	Odour control plant designed to run using two out of three processes / Existing duty and stand by bins / Maintenance team to repair fault	L	Process Controller / M&E / JCA	N	C	BSB 4	Refer to Appendix 8 for Customer Communications requirements. Consider LA notification if prolonged event.
Sludge blending	15 Nos Sludge Blending / Buffer Tanks (6 Nos Sludge Buffer / Storage Tanks), 3 Nos Riverside Blending Tanks, 4 Nos Raw Sludge Buffer Tanks, 1 No Thickened SAS Buffer Tank and 1 No Blending - covered and odour controlled via the 3 Nos stages OCU 1	EPR	Blended sludge / Activated sludge		Over pumping (to atmosphere) to temporary centrifuges	R	Weeks			Gemini Business Park and Creekmouth	4	2	8	Medium	Enclosed centrifuges and pipelines and covered traliers	L	Team Manager	Y	C	BSB 5	Event situation. Consider external communication.
Sludge blending	15 Nos Sludge Blending / Buffer Tanks (6 Nos Sludge Buffer / Storage Tanks), 3 Nos Riverside Blending Tanks, 4 Nos Raw Sludge Buffer Tanks, 1 No Thickened SAS Buffer Tank and 1 No Blending - covered and odour controlled via the 3 Nos stages OCU 1	EPR	Raw sludge / Blended sludge / Activated sludge		Failure of mixing pumps	R	Hours			Gemini Business Park and Creekmouth	4	2	8	Medium	Use stand by plant, wash down and repair pump	L	Process Controller / Tech 1 / M&E	N	N	BSB 6	
Sludge blending	15 Nos Sludge Blending / Buffer Tanks (6 Nos Sludge Buffer / Storage Tanks), 3 Nos Riverside Blending Tanks, 4 Nos Raw Sludge Buffer Tanks, 1 No Thickened SAS Buffer Tank and 1 No Blending - covered and odour controlled via the 3 Nos stages OCU 1	EPR	Raw sludge / Blended sludge / Activated sludge		Leakage	R	Hours			Gemini Business Park and Creekmouth	4	2	8	Medium	Isolate leak, wash down and repair leak	L	Process Controller / Tech 1 / M&E	N	N	BSB 7	
Sludge blending	15 Nos Sludge Blending / Buffer Tanks (6 Nos Sludge Buffer / Storage Tanks), 3 Nos Riverside Blending Tanks, 4 Nos Raw Sludge Buffer Tanks, 1 No Thickened SAS Buffer Tank and 1 No Blending - covered and odour controlled via the 3 Nos stages OCU 1	EPR	Raw sludge / Blended sludge / Activated sludge		Empty for maintenance	P	Hours			Gemini Business Park and Creekmouth	4	2	8	Medium	Use stand by plant and wash down as soon as possible	L	Team Manager / Process Controller / Tech 1 / M&E	N	N	BSB 8	
Sludge blending	15 Nos Sludge Blending / Buffer Tanks (6 Nos Sludge Buffer / Storage Tanks), 3 Nos Riverside Blending Tanks, 4 Nos Raw Sludge Buffer Tanks, 1 No Thickened SAS Buffer Tank and 1 No Blending - covered and odour controlled via the 3 Nos stages OCU 1	EPR	Raw sludge / Blended sludge / Activated sludge		OCU failure	R	Hours			Gemini Business Park and Creekmouth	4	4	16	High	Find cause and resolve	L	SAP / Process Controller / Tech 1 / M&E / Site Manager	N	N	BSB 9	
Sludge Processing	Sludge Powered Generator - 8 Nos presses and 3 Nos fluidised beds to burn STW sludge	EPR	Blended sludge / Pressed cake / Filtrate / Ash	C						Gemini Business Park and Creekmouth	3	1	3	Low	Inside SPG building and ventilated			N	N	BSPG 1	In enclosed building with forced draft ventilation.
Sludge Processing	Sludge Powered Generator - 8 Nos presses and 3 Nos fluidised beds to burn STW sludge	EPR	Pressed cake / Filtrate / Blended sludge		Dewatering area shutter doors left open	R	Hours			Gemini Business Park and Creekmouth	3	2	6	Medium	Close doors	L	Specialist Process Controller / Tech 1	N	N	BSPG 2	
Sludge Processing	Sludge Powered Generator - 8 Nos presses and 3 Nos fluidised beds to burn STW sludge	EPR	Pressed cake / Filtrate		Emptying and tankering of a press hopper	P	Days			Gemini Business Park and Creekmouth	3	2	6	Medium	Minimise time, spillages and carry out daily wash downs	L	Specialist Process Controller / Tech 1	N	N	BSPG 3	

Sludge Processing	Sludge Powered Generator - 8 Nos presses and 3 Nos fluidised beds to burn STW sludge	EPR	Pressed cake / Filtrate / Blended sludge		Long term stream outage	P	Months	Gemini Business Park and Creekmouth	3	2	6	Medium	Use alternative treatment (THP and temporary centrifuges)	L	Site Manager	N	C	BSPG 4	2 Nos SPG streams, Riverside and Beckon THPs provide excess treatment capacity.
Sludge Processing	Sludge Powered Generator - 8 Nos presses and 3 Nos fluidised beds to burn STW sludge	EPR	Raw sludge / Blended sludge / Activated sludge		Medium to long term outage of whole facility	R	Months	Gallions Reach, Gemini Business Park, Thames View estate, Showate cinema, Creekmouth and Beckon Triangle Retail Park & Gateway Retail Park	3	3	9	Medium	Use alternative treatment (THP and temporary centrifuges)	L	Operations Manager	Y	C	BSPG 5	Riverside, Beckon THPs, and temporary centrifuges provide sufficient treatment capacity.
Sludge Processing	Sludge Power Generator Stack - Removal of scrubber combustion gases	EPR	Combusted gases	C				Gemini Business Park and Creekmouth	1	0	0	None				N	N	BSPG 6	
Sludge Processing	Ash removal - Tankered disposal of ash	EPR	Ash	I				Gemini Business Park and Creekmouth	0	0	0	None				N	N	BSPG 7	
Sludge Processing	Filtrate removal to STW	EPR	Filtrate	C				Gemini Business Park and Creekmouth	3	1	3	Low				N	C	BSPG 8	
Sludge Processing	Drainage removal to STW	EPR	Sulphides	I				Gemini Business Park and Creekmouth	3	1	3	Low				N	N	BSPG 9	Contained in a building.
Sludge Processing	Drainage removal to STW	EPR	Sulphides		Drainage back up	R	Hours	Gemini Business Park and Creekmouth	3	2	6	Medium	Clear / Flush drains and check pumps	M	Specialist Process Controller / Process Controller / Tech 1	N	N	BSPG 10	
Sludge Processing	Thermal Hydrolysis Plant	EPR	Sludge	C					3	1	3	Low							
Sludge Processing	Thermal Hydrolysis Plant OCU	EPR	Sludge		OCU failure	R	Hours		4	4	16	High	Planned maintenance and monitoring. Find cause and resolve	L	SAP / Process Controller / Tech 1 / M&E / Site Manager	N	N		Mitigation measures are deemed sufficient.
Sludge Treatment	Primary Digestion	EPR	Sludge	C					3	1	3	Low							
Sludge Movements	Cake Barn	EPR	Sludge	C					3	1	3	Low	air extraction , keep doors closed. Cake in storage forms a crust after a day or two reducing risk of odour. No additional turning or handling during cake storage.						
Decommissioned digesters	Digesters - 8 Nos tanks have been cleaned and demolished, 6 Nos tanks have been refurbished and 10 Nos tanks are partially full	EPR	None	C				Gemini Business Park and Creekmouth	0	0	0	None				N	N	BDD 1	Normal operation considered: not in operation and drained.
Decommissioned digesters	Digesters - 8 Nos tanks have been cleaned and demolished, 6 Nos tanks have been refurbished and 10 Nos tanks are partially full	EPR	Blended sludge / Activated sludge / Raw sludge		Use for event buffer storage	R	Year	Gemini Business Park and Creekmouth	3	2	6	Medium	10 Nos tanks to be drained down and cleaned	L	Operations Manager	N	Y	BDD 2	Current situation.
Odour Control Units	OCU 1 (4 Nos Bioreactors, 1 No chemical scrubber, 4 Nos activated carbon filters) - PFTs, sludge Blending tanks, sludge Buffer Tanks, sludge mixing chamber, raw sludge thickening plant, Riverside PS	EPR	None	C				Gemini Business Park and Creekmouth	0	0	0	None				N	N	OC 1	
Odour Control Units	OCU 1 (4 Nos Bioreactors, 1 No chemical scrubber, 4 Nos activated carbon filters) - PFTs, sludge Blending tanks, sludge Buffer Tanks, sludge mixing chamber, raw sludge thickening plant, Riverside PS	EPR	Sludge		Loss of washwater	R	Hours	Gemini Business Park and Creekmouth	3	1	3	Low	Check operation of other stages and use stand by washwater supply	L	Process Controller / Tech 1	N	N	OC 2	
Odour Control Units	OCU 1 (4 Nos Bioreactors, 1 No chemical scrubber, 4 Nos activated carbon filters) - PFTs, sludge Blending tanks, sludge Buffer Tanks, sludge mixing chamber, raw sludge thickening plant, Riverside PS	EPR	Sludge		Failure of recirculation pumps	R	Hours	Gemini Business Park and Creekmouth	3	1	3	Low	Stand by pump available	L	Process Controller / Tech 1	N	N	OC 3	
Odour Control Units	OCU 1 (4 Nos Bioreactors, 1 No chemical scrubber, 4 Nos activated carbon filters) - PFTs, sludge Blending tanks, sludge Buffer Tanks, sludge mixing chamber, raw sludge thickening plant, Riverside PS	EPR	Sludge		Carbon failure	R	Days	Gemini Business Park and Creekmouth	3	1	3	Low	Ensure 2 other stages are fully operational	L	Process Controller / Tech 1 / Site Manager	N	N	OC 4	OCU designed to treat incoming air flow with 2 out of 3 stages operational.
Odour Control Units	OCU 1 (4 Nos Bioreactors, 1 No chemical scrubber, 4 Nos activated carbon filters) - PFTs, sludge Blending tanks, sludge Buffer Tanks, sludge mixing chamber, raw sludge thickening plant, Riverside PS	EPR	Sludge		Power failure	R	Hours	Gemini Business Park and Creekmouth	3	1	3	Low	Switch to alternative power feed	L	SAP / Process Controller	N	N	OC 5	Fed via two separate odour control sub systems.
Odour Control Units	OCU 1 (4 Nos Bioreactors, 1 No chemical scrubber, 4 Nos activated carbon filters) - PFTs, sludge Blending tanks, sludge Buffer Tanks, sludge mixing chamber, raw sludge thickening plant, Riverside PS	EPR	Sludge		Instrument failure	R	Hours	Gemini Business Park and Creekmouth	3	1	3	Low	Ensure 2 other stages are fully operational / ICA Tech to repair instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N	OC 6	OCU designed to treat incoming air flow with 2 out of 3 stages operational.
Odour Control Units	OCU 2 (1 No Bioreactor, 1 No activated carbon filter) - Storm area chamber	EPR	None	C				Gallions Reach	0	0	0	None				N	N	OC 7	
Odour Control Units	OCU 2 (1 No Bioreactor, 1 No activated carbon filter) - Storm area chamber	EPR	Sewage		Loss of washwater	R	Hours	Gallions Reach	2	2	4	Low	Use alternative washwater supply / Carbon filter available	L	Process Controller / Tech 1	N	N	OC 8	Other stage can cope with normal operation.
Odour Control Units	OCU 2 (1 No Bioreactor, 1 No activated carbon filter) - Storm area chamber	EPR	Sewage		Carbon failure	R	Days	Gallions Reach	2	2	4	Low	Ensure bioreactor is fully operational and replace carbon	L	Process Controller / Tech 1 / Site Manager	N	N	OC 9	Other stage can cope with normal operation.
Odour Control Units	OCU 2 (1 No Bioreactor, 1 No activated carbon filter) - Storm area chamber	EPR	Sewage		Power failure	R	Hours	Gallions Reach	2	2	4	Low	Reinstate power	L	Process Controller / M&E	N	N	OC 10	
Odour Control Units	OCU 2 (1 No Bioreactor, 1 No activated carbon filter) - Storm area chamber	EPR	Sewage		Instrument failure	R	Hours	Gallions Reach	2	2	4	Low	Ensure other stage is fully operational / ICA Tech to repair instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N	OC 11	Other stage can cope with normal operation.
Odour Control Units	OCU 3 (1 No Bioreactor, 1 No activated carbon filter) - Inlet works	EPR	None	C				Gallions Reach	0	0	0	None				N	N	OC 12	
Odour Control Units	OCU 3 (1 No Bioreactor, 1 No activated carbon filter) - Inlet works	EPR	Sewage		Loss of washwater	R	Hours	Gallions Reach	2	2	4	Low	Use alternative washwater supply / Carbon filter available	L	Process Controller / Tech 1	N	N	OC 13	Other stage can cope with normal operation.
Odour Control Units	OCU 3 (1 No Bioreactor, 1 No activated carbon filter) - Inlet works	EPR	Sewage		Carbon failure	R	Days	Gallions Reach	2	2	4	Low	Ensure bioreactor is fully operational and replace carbon	L	Process Controller / Tech 1 / Site Manager	N	N	OC 14	Other stage can cope with normal operation.
Odour Control Units	OCU 3 (1 No Bioreactor, 1 No activated carbon filter) - Inlet works	EPR	Sewage		Power failure	R	Hours	Gallions Reach	2	2	4	Low	Reinstate power	L	Process Controller / M&E	N	N	OC 15	
Odour Control Units	OCU 3 (1 No Bioreactor, 1 No activated carbon filter) - Inlet works	EPR	Sewage		Instrument failure	R	Hours	Gallions Reach	2	2	4	Low	Ensure other stage is fully operational / ICA Tech to repair instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N	OC 16	Other stage can cope with normal operation.
Odour Control Units	OCU 4 (1 No Bioreactor, 2 Nos activated carbon filters) - PST Feed channel area	EPR	None	C				Gallions Reach	0	0	0	None				N	N	OC 17	
Odour Control Units	OCU 4 (1 No Bioreactor, 2 Nos activated carbon filters) - PST Feed channel area	EPR	Sewage and return liquors		Loss of washwater	R	Hours	Gallions Reach	3	2	6	Medium	Use alternative washwater supply / Carbon filter available	L	Process Controller / Tech 1	N	N	OC 18	Other stage can cope with normal operation.

Odour Control Units	OCU 4 (1 No Biofilter, 2 Nos activated carbon filters) - PST Feed channel area	EPR	Sewage and return liquors		Carbon failure	R	Days	Gallions Reach	3	2	6	Medium	Ensure biofilter is fully operational and replace carbon	L	Process Controller / Tech 1 / Site Manager	N	N	OC 19	Other stage can cope with normal operation.
Odour Control Units	OCU 4 (1 No Biofilter, 2 Nos activated carbon filters) - PST Feed channel area	EPR	Sewage and return liquors		Power failure	R	Hours	Gallions Reach	3	2	6	Medium	Switch to alternative power supply	L	Process Controller / MBE	N	N	OC 20	
Odour Control Units	OCU 4 (1 No Biofilter, 2 Nos activated carbon filters) - PST Feed channel area	EPR	Sewage and return liquors		Instrument failure	R	Hours	Gallions Reach	3	2	6	Medium	Ensure other stage is fully operational / ICA Tech to repair instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N	OC 21	Other stage can cope with normal operation.
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	None	C				Gallions Reach and Gemini Business Park	0	0	0	None							
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	Sewage and return liquors		Loss of washwater	R	Hours	Gallions Reach and Gemini Business Park	3	2	6	Medium	Use alternative washwater supply / Carbon filter available	L	Process Controller / Tech 1	N	N		
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	Sewage and return liquors		Carbon failure	R	Days	Gallions Reach and Gemini Business Park	3	2	6	Medium	Ensure biofilter is fully operational and replace carbon	L	Process Controller / Tech 1 / Site Manager	N	N		
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	Sewage and return liquors		Power failure	R	Hours	Gallions Reach and Gemini Business Park	3	2	6	Medium	Switch to alternative power supply	L	Process Controller / MBE	N	N		
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	Sewage and return liquors		Instrument failure	R	Hours	Gallions Reach and Gemini Business Park	3	2	6	Medium	Ensure other stage is fully operational / ICA Tech to repair instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N		
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	Sewage and return liquors	C				Gallions Reach and Gemini Business Park	0	0	0	None							
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	Sewage and return liquors		Loss of washwater	R	Hours	Gallions Reach and Gemini Business Park	3	2	6	Medium	Use alternative washwater supply / Carbon filter available	L	Process Controller / Tech 1	N	N		
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	Sewage and return liquors		Carbon failure	R	Days	Gallions Reach and Gemini Business Park	3	2	6	Medium	Ensure biofilter is fully operational and replace carbon	L	Process Controller / Tech 1 / Site Manager	N	N		
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	Sewage and return liquors		Power failure	R	Hours	Gallions Reach and Gemini Business Park	3	2	6	Medium	Switch to alternative power supply	L	Process Controller / MBE	N	N		
Odour Control Units	OCU (2 stage biofilter and activated carbon) - North PSTs	EPR	Sewage and return liquors		Instrument failure	R	Hours	Gallions Reach and Gemini Business Park	3	2	6	Medium	Ensure other stage is fully operational / ICA Tech to repair instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N		
Odour Control Units	THP OCU (2-stage bio-trickling filter and 2No carbon filters) - Enhanced Digestion Facilities	EPR	Sludge	C					0	0	0	None							
Odour Control Units	THP OCU (2-stage bio-trickling filter and 2No carbon filters) - Enhanced Digestion Facilities	EPR	Sludge		Loss of washwater	R	Hours		3	2	6	Medium	Use alternative washwater supply / Carbon filter available	L	Process Controller / Tech 1	N	N		
Odour Control Units	THP OCU (2-stage bio-trickling filter and 2No carbon filters) - Enhanced Digestion Facilities	EPR	Sludge		Carbon failure	R	Days		3	2	6	Medium	Ensure biofilter is fully operational and replace carbon	L	Process Controller / Tech 1 / Site Manager	N	N		
Odour Control Units	THP OCU (2-stage bio-trickling filter and 2No carbon filters) - Enhanced Digestion Facilities	EPR	Sludge		Power failure	R	Hours		3	2	6	Medium	Switch to alternative power supply	L	Process Controller / MBE	N	N		
Odour Control Units	THP OCU (2-stage bio-trickling filter and 2No carbon filters) - Enhanced Digestion Facilities	EPR	Sludge		Instrument failure	R	Hours		3	2	6	Medium	Ensure other stage is fully operational / ICA Tech to repair instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N		