SITE NAME: Beckton STW ODOUR RISK ASSESSMENT DATE: November 2023

Process Stage ADD EXTRA ROWS BELOW THIS ROW IF REQUIRED	Process Unit	Applicable Legislation	Odour Description	Constant/		Likelihood of Event											Improvement plan		
ROWS BELOW THIS ROW IF REQUIRED				Occasional/ Rare	Event Description	Frequent/ Rare/ Planned	Length of Time of Release	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?	C=complete Y=action required N=not required	Assessment Number	Notes
											0	-	-	÷	-	-			
Works Inlet Incom	coming Sewers - 5 Nos sewers deliver sewage to reception chambers	UWWT	Sewage	с				Tesco	2	1	2	Low	covered and OCU	-	-	N	с	BWI 1	Covered and odour controlled.
	coming 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 S	coming 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 S	coming Sewers - 5 Nos sewers deliver sewage to reception chambers	UWWT	Septic sewage		Septic sewage from low flows or sewer cleaning	R	Days	Tesco	2	2	4	Low	Ensure odour control unit is fully operational	L	Process Controller / Tech 1	N	N	BWI4	Happens once per year.
s	coming Sewers - 5 Nos sewers deliver sewage to reception chambers m water pipe from grit channel - returns	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 reinstate power	L	Process Controller / Tech 1	N	с	BW15	Event situation. Happens once every 10 years.
WORKS INTEL	water to inlet	UWWT	Sewage	С				Tesco	3	2	6	Medium	-	-	•	N	С	BWI6	discharged bay enclosed.
	tore Road pumping station discharge Gascoigne Road pumping station	UWWT	Sewage and trade effluent Sewage	C				Tesco	4	2	8	Medium	-			N	N	BWI7 BWI8	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	с	SS1	Covered and odour controlled.
Pumped flow from Lee Tunnel	umps - 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	umps - 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 OCU flow from Lee Tunnel	CU - 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.
and River outfall Shaft	ICU - 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	os Pipelines and distribution chambers		Storm sewage	0				Tesco and Gallions Reach	2	1	2	Low			_		N	LTT1 Future	Pipelines self drained.
Lee Tunnel Transfer Pipelines 2 Nos F	os Pipelines and distribution chambers		Storm sewage		OCU failed	R	Days	Tesco and Gallions Reach	2	1	2	Low	Drain down pipelines and flush out	L	Process Controller / Tech 1	N	N	LTT2 Future	1
Screening 1 Coarse	rse screens - 6 Nos 25mm pull screens that remove large solids	UWWT	Sewage	с				Tesco and Gallions Reach	2	1	2	Low	channels are covered	÷	-	N	N	BS 1	Covered and odour controlled.
Screening 1 Coarse	rse 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	rse screens - 6 Nos 25mm pull screens that remove large solids	UWWT	Septic sewage		Septic sewage from low flows or sewer cleaning	R	Days	Tesco and Gallions Reach	2	2	4	Low	Ensure odour control unit is fully operational	L	Process Controller / Tech 1	N	с	BS 3	Happens once per year.
Screening 1 Coarse	rse 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	с	BS 4	Event situation.
Screening 1 Storm of	n 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	с				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	Р	Hours	Tesco	2	1	2	Low	Manually remove screenings	L	Process Controller / Tech	N	N	BS 7	1
Screening 1 Skips - S cor	 Skips for Coarse screens (underneath conveyor, but open to atmosphere) 	UWWT	Sewage screenings	с				Tesco	3	2	6	Medium	- Manually transfer with	-	-	N	N	BS 8	
Screening 1 Skips - Screening 1	- 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.	м	Process Controller / Tech 1	N	N	BS 9	

Imports	Cess imports (Fine and coarse screens) - Discharge of chemical waste and domestic	UWWT	Cess waste	I				Gallions Reach and Tesco	4	1	4	Low	Diverted to another site			N	с	C1	Covered and odour controlled channels.
importa	waste (eg portaloos)	01111							-		-	2011			Process		0	01	
Imports	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	Controller / Tech	N	С	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 swipe (discharge) system	UWWT	Cess waste		Maintenance	Р	Hours	Gallions Reach and Tesco	4	1	4	Low	Divert to another site	L	Process Controller / Tech 1	Y	N	C4	Notily contractor of maintenance and diversion.
Imports	Sludges imported - From other sites and self generated	EPR	Sludge waste	0				Gallions Reach and Tesco	4	2	8	Medium		-		N	с	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	м	Process Controller / Tech 1	N	С	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	м	SAP / Process Controller / Tech 1 / M&E / Site Manager	N	N	53	
Grit	Grit channels - 6 Nos constant velocity grit channels to remove grit Grit channels - 6 Nos constant velocity grit	UWWT	Sewage	С	Grit channel shutdown to remove compacted prit			Gallions Reach and Tesco Gallions Reach and	2	1	2	Low	Covered		-	Ν	с	BG 1	Covered and odour controlled.
Grit	channels to remove grit Grit classifier and hard standing - Grit	UWWT	Sewage		remove compacted grit	R	Weeks	Tesco Gallions Reach and	2	1	2	Low	Flush and hose down lane	L	TM / Tech 1	N	С	BG 2	Classifiers are covered and bounded
Grit	deposited under the clarifiers before removal to allow for drying.	UWWT	Sewage	с				Tesco	2	1	2	Low	Sheeted curtain to cover Ensure grit is clean and	-	-	N	С	BG 3	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	free from other debris. Grit shall be loaded from the orit bays into skins ASAP	-	-	Ν	с	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	-	-	Ν	N	BS 10	
Screening 2	Fine screens - 8 Nos 6 inside screening building (naturally ventilated) 2 outside	UWWT	Sewage	с				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	с				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	Р	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	с				Gallions Reach and Gemini Business Park	3	1	3	Low	Enclosed building		-	N	с	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	м	Process Controller / Tech 1	N	N	BS 17	
Primary Treatment	PST Feed channels - Return liquors	UWWT	Sewage	с				Gallions Reach and Gemini Business Park	2	1	2	Low				N	с	BPT 1	Covered and odour controlled.
Primary Treatment	PST Feed channels - Return liquors	UWWT	Sewage		Dig out grit from feed channel	Р	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	с				Gallions Reach and Gemini Business Park	2	1	2	Low	PST return liquors are covered			Ν	с	BPT 3	Covered and odour controlled.
Primary Treatment	PST Feed channels - Flow to Treatment Meters	UWWT	Sewage		Maintenance and cleaning of instruments	Ρ	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	с				Gallions Reach and Gemini Business Park	2	1	2	Low	Covered	-	-	N	с	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	С				Gallions Reach and Gemini Business Park	2	1	2	Low	Covered Covered and odour	-	Process	Ν	с	BPT 6	Covered and odour controlled.
Primary Treatment	PSTs 1-8 and 9-16	UWWT	Sludge		Tanks drained down	Р	Days	Gallions Reach and Gemini Business Park	3	1	3	Low	controlled to empty - Flush out tank	L	Controller / Tech 1 Process	N	N	BPT 7	Happens once per month.
Primary Treatment	PSTs 1-8 and 9-16	UWWT	Sewage / Sludge		Particularly scummy (failure of surface scraper)	F	Days	Gallions Reach and Gemini Business Park	2	1	2	Low	Covered and odour controlled	L	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 Commuications 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 Commulcations 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 Covered and odour	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	Р	Days	Gallions Reach and Gemini Business Park	0	0	0	None	controlled / Tank empty and cleaned before maintenance activity		TM / Tech 1	N	N	BPT 13	One tank 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	Controller / Tech 1 / M&E / Site Manager	N	N	BPT 14	
Primary Treatment	PSTs 1-8 9-16 - bypass valve desludging	UWWT	Sewage / Sludge	С				Gallions Reach and Gemini Business Park	4	1	4	Low			Description	Ν	С	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	С				Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	1	2	Low			-	Ν	с	BA 1	Covered and odour controlled.

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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 Gernini Business Park	2	1	2	Low	Covered and odour controlled - Automatic descuming 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 / M&E / 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	с				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/mousse 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, Gatlions 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 main	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	Ρ	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 operationwith 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	с				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	N	N	BFS 2	
Final Settlement	Final settlement tanks - into ASP2 (16 Nos	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	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	L	1 Process Controller / Tech	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	Carried out	L	1 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	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	N	N	BFS 8	
Final Settlement	tanks) 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	Ρ	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/mousse on surface	R	Days	Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gatlions Reach and Gernini Business Park	2	2	4	Low	Check operational mallard 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	с				Showcase, Thamesview estate and Creekmouth	0	0	0	None			-	Ν	N	BED 2	
Effluent discharge to river	ASP4 discharge into ASP3 channel	UWWT	Final effluent	с				Showcase and Thamesview estate	0	0	0	None				N		BED 3	

Initiating Drum Trickeness EPR Raw sludge Splitage /Leskage R Hours Gallons Reach and Gallons Reach and Hours 4 2 8 Medium Clear splitage, wash down L Control of Control of Co			r		1		1			1	T			1		I	1		
Image: sector in the	1 Covered and odour controlled.	BRSH 1	с	N	-	-	In a deep enclosed dry well	Low	4	4 1	cinema, Creekmouth, Gallions Reach and				С	Raw sludge	UWWT	Raw sludge pumps - 4 Nos pumps located in raw sludge pumping station	Raw sludge handling
bit bit<	2 Enclosed in a ventilated building.	BRSH 2	с	N	M&E	L		Low	4	4 1	view estate, Showcase cinema, Creekmouth, Gallions Reach and	Hours	R	Pump failed		Raw sludge	UWWT	Raw sludge pumps - 4 Nos pumps located in raw sludge pumping station	
bases bases <th< th=""><th>3 Enclosed in a ventilated building.</th><th>BRSH 3</th><th>С</th><th>N</th><th>M&E</th><th>L</th><th>Use stand by plant and wash down facility</th><th>Low</th><th>4</th><th>4 1</th><th>view estate, Showcase cinema, Creekmouth, Gallions Reach and</th><th>Hours</th><th>P</th><th>Pump out for maintenance</th><th></th><th>Raw sludge</th><th>UWWT</th><th>Raw sludge pumps - 4 Nos pumps located in raw sludge pumping station</th><th>Raw sludge handling</th></th<>	3 Enclosed in a ventilated building.	BRSH 3	С	N	M&E	L	Use stand by plant and wash down facility	Low	4	4 1	view estate, Showcase cinema, Creekmouth, Gallions Reach and	Hours	P	Pump out for maintenance		Raw sludge	UWWT	Raw sludge pumps - 4 Nos pumps located in raw sludge pumping station	Raw sludge handling
Intersignent Name Solution	4 Enclosed in a ventilated building.	BRSH 4	с	N	Process Controller / Tech 1	L	Use stand by plant, wash down facility and sump pumps	Low	4	4 1	view estate, Showcase cinema, Creekmouth, Gallions Reach and	Hours	R	Sludge leak from pump		Raw sludge	UWWT	Raw sludge pumps - 4 Nos pumps located in raw sludge pumping station	Raw sludge handling
Intercape Juncip Juncip <thjuncip< th=""> Juncip Juncip<th>5 Enclosed and odour controlled.</th><th>BRSH 5</th><th>с</th><th>N</th><th>-</th><th>-</th><th>Covered</th><th>Low</th><th>4</th><th>4 1</th><th>view estate, Showcase cinema, Creekmouth, Gallions Reach and</th><th></th><th></th><th></th><th>с</th><th>Raw sludge</th><th>UWWT</th><th>Raw sludge wet well</th><th>Raw sludge handling</th></thjuncip<>	5 Enclosed and odour controlled.	BRSH 5	с	N	-	-	Covered	Low	4	4 1	view estate, Showcase cinema, Creekmouth, Gallions Reach and				с	Raw sludge	UWWT	Raw sludge wet well	Raw sludge handling
Introduction Distribution List List List State State State State List List List <thlist< th=""> List <thlist< th=""> <th< th=""><th>6 Maintenance would be carried out on wet well once every couple of years.</th><th>BRSH 6</th><th>N</th><th>N</th><th>Team Manager</th><th>м</th><th>Flush well and drain it down / Minimise outage time</th><th>Medium</th><th>8</th><th>4 2</th><th>view estate, Showcase cinema, Creekmouth, Gallions Reach and</th><th>Days</th><th>P</th><th>maintenance requiring to use other uncovered wet well (PSTs 1-8 drainage</th><th></th><th>Raw sludge</th><th>UWWT</th><th>Raw sludge wet well</th><th>Raw sludge handling</th></th<></thlist<></thlist<>	6 Maintenance would be carried out on wet well once every couple of years.	BRSH 6	N	N	Team Manager	м	Flush well and drain it down / Minimise outage time	Medium	8	4 2	view estate, Showcase cinema, Creekmouth, Gallions Reach and	Days	P	maintenance requiring to use other uncovered wet well (PSTs 1-8 drainage		Raw sludge	UWWT	Raw sludge wet well	Raw sludge handling
Image:	Previously used as a raw sludge pumping station. Now available as a raw sludge back up pumping station.	BRSD 1	с	N	-	-	Enclosed bulding, dry well	Low	3	3 1	view estate, Showcase cinema, Creekmouth, Gallions Reach and				I	Settled sewage / Raw sludge	UWWT	PSTs 1-8 drainage pumping station	Raw sludge handling and Drainage
Image Pair of a base proving one Data graphic Data graphic Data graphic Data graphic Data dramation Data dramati	2 Event situation. Never happened to date.	BRSD 2	N	N	Process	L	Minimise operational time / Flush pump after use	Medium	8	4 2	view estate, Showcase cinema, Creekmouth, Gallions Reach and	Weeks	R	Used as a raw sludge back up pumping station		Raw sludge	UWWTD	PSTs 1-8 drainage pumping station	handling and
Prischer Dirt Stature J No Darkender J Darkender No Darkender J Darkender No Darkender J Darkender No Darkender J Darkender	3	BRSD 3	N	N	Process	L	Flush tank after draining	Medium	6	3 2	view estate, Showcase cinema, Creekmouth, Gallions Reach and	Days	Р	Draining PSTs 1-8		Settled sewage / Raw sludge	UWWTD	PSTs 1-8 drainage pumping station	Raw sludge handling and Drainage
Prischer Dirt Stature J No Darkender J Darkender No Darkender J Darkender No Darkender J Darkender No Darkender J Darkender	1 Covered and odour controlled.	BRST 1	с	N		-	Covered	Low	4	4 1					с	Raw sludge	EPR	PFTs - 4 Nos PFT tanks	Raw sludge
In Producting OPTI- 400 PT Turks OPTI Normal Producting Sector PT Turks OPTI Producting Secto	2 Ensure covers are closed after task complete.	BRST 2	С	N	Process	L	and covers opened at any	Medium	8	4 2	Gallions Reach and	Hours	Р	Weir cleaning / Maintenance		Raw sludge / Supernatant liquor	EPR	PFTs - 4 Nos PFT tanks	Raw sludge
Res clage Nacional Statistica PTR - 4 No PT unit PTR Res clage Nacional Statistica Res clage No Pres class No PTR - 4 No PT unit L Pres class No N C PERT - PERT - PERT - No PERT - No <th< th=""><th>- 3 Ensure covers are closed after task complete.</th><th>BRST 3</th><th>с</th><th>N</th><th>Process</th><th>L</th><th>and covers opened at any</th><th>Medium</th><th>8</th><th>4 2</th><th></th><th>Days</th><th>R</th><th>Blocked launders</th><th></th><th>Raw sludge / Supernatant liquor</th><th>EPR</th><th>PFTs - 4 Nos PFT tanks</th><th></th></th<>	- 3 Ensure covers are closed after task complete.	BRST 3	с	N	Process	L	and covers opened at any	Medium	8	4 2		Days	R	Blocked launders		Raw sludge / Supernatant liquor	EPR	PFTs - 4 Nos PFT tanks	
Residuary PFTs - Max DER Residuary Purp Unit R Mod Gene Reserved A	4	BRST 4	с	N	Process	L	Drain down and clean tank using tanker	Medium	8	4 2		Weeks	R	Failed scraper		Raw sludge	EPR	PFTs - 4 Nos PFT tanks	
Residual PFTs - 4 Nos PFT tanks EFR Residual Page of the maximum P Name Callers Recht and Galers Recht and Endem Recht	5	BRST 5	с	N	Process Controller / Tech	L	Use stand by plant and wash down facility	Medium	8	4 2	Gallions Reach and Gemini Business Park	Hours	R	Pump failed		Raw sludge	EPR	PFTs - 4 Nos PFT tanks	Raw sludge thickening
Rev ubge thickening PFTs - 4 Nos PFT uxks DEPR Rev ubge thyper than normal adds concentration pPTs (concentration pPTs) R Days Galors Recht and Cerrit Bansen PAR 4 2 8 Medun Erner all open contration (concentration pPTs) V C BRST 7 Rev ubge thickening PFTs - 4 Nos PFT uxks EPR Rev dugge i Spennanz Medun Concentration pPTs - 4 Nos PFT uxks EPR Rev dugge i Spennanz R No. Callors Recht and Cerrit Bansen Pris 4 2 8 Medun Epres all open contration pris No. C BRST 7 Rev dugge thickening PFTs - 4 Nos PFT uxks EPR Rev dugge Normal callers Recht and entroit Bansen Pris 4 2 8 Medun Emro Record and train callers Recht and entroit Bansen Pris N C BRST 9 Rev dugge thickening PFTs - 4 Nos PFT uxks EPR Rev dugge Madage to the bansen Pris 4 2 8 Medun Emro Record and train trains and train trains and train train train trains and train trains and trains and train train trains and trains and train trains and t	6	BRST 6	с	N	Process Controller / Tech	L	Use stand by plant and wash down facility	Medium	8	4 2	Gallions Reach and Gemini Business Park	Hours	P	Pump out for maintenance		Raw sludge	EPR	PFTs - 4 Nos PFT tanks	Raw sludge thickening
Name and and and and and state and and an anti-state and the state and the st	Refer to Appendix 8 for Customer Commucations requirements. Consider LA notification if prolonged event.	BRST 7	с	Y	Team Manager / Process	L	unit stages are fully operational and use drum	Medium	8	4 2		Days	R			Raw sludge	EPR	PFTs - 4 Nos PFT tanks	Raw sludge thickening
Raw sludge thickening PFTs - 4 Nos PFT taxks EPR Raw sludge Numper control water particularly for water R Weaks Gallons Reach and Gening Backers PM 4 2 8 Medium Ensure at daps as tably operatorial and use drug bickers N C BRST 0 Raw sludge thickering PFTs - 4 Nos PFT taxks EPR Raw sludge Multiple taxls failure R Weaks Gallons Reach and Gening Backers 4 2 8 Medium Enve at daps as tably operatorial and use drug bickers Set Manager / Critical (FTs - 4) Y C BRST 0 Raw sludge thickering PFTs - 4 Nos PFT taxks EPR Raw sludge / Spenstant (score) Studge splitupe R More Gallons Reach and Gening Backers PM 4 2 8 Medium Hode and store Set (score) L Tach 1 N C BRST 10 Raw sludge PFTs - 4 Nos PFT taxks EPR Raw sludge C Studge splitupe R Hors Gallons Reach and Gening Backers PM 4 1 4 1 Medium Hore dcone streal (score) L Tach 1 </th <th>8</th> <th>BRST 8</th> <th>с</th> <th>N</th> <th>Process Controller / MR.F</th> <th>L</th> <th>Open one cover at a time and perform task as quickly</th> <th>Medium</th> <th>8</th> <th>4 2</th> <th>Gallions Reach and Gemini Business Park</th> <th>Hours</th> <th>R</th> <th>requires stopping flow,</th> <th></th> <th>Raw sludge / Supernatant</th> <th>EPR</th> <th>PFTs - 4 Nos PFT tanks</th> <th>Raw sludge</th>	8	BRST 8	с	N	Process Controller / MR.F	L	Open one cover at a time and perform task as quickly	Medium	8	4 2	Gallions Reach and Gemini Business Park	Hours	R	requires stopping flow,		Raw sludge / Supernatant	EPR	PFTs - 4 Nos PFT tanks	Raw sludge
Law sludge Raw sludgePFTs - 4 Nos PFT tarksLeftCount	9	BRST 9	С	N	Team Manager / Process	L	as possible Ensure all odour control unit stages are fully	Medium	8	4 2	Gallions Reach and	Weeks	R	Normal operation but with			EPR	PFTs - 4 Nos PFT tanks	Raw sludge
Rev studge Indexing PPTs - 4 Nos PFT tarks EPR Rev studge / Spennator locor Studge splage R Hors Gallons Resh ndt Gening 4 2 8 Medium Hoad name L Tach 1 N C BRST 11 Raw studge thickening PPTs - 4 Nos PFT tarks EPR Raw studge / Spennator locor Palues of odar correct locor R Hors Gallons Resh nd Gening Balances Park 4 16 High Use dum Riskens to refoce may studge correct locor Ste Monager / Protect Ste Monager / Protect Ste Monager / Protect V C BRST 12 Raw studge thickening Stelp pung tom PTs - Nos pungs.2 EPR Raw studge C C C C Gallons Resh nd Gening Balances Park 4 1 4 Low Expension L Process Descret V C BRST 13 Raw studge thickening Stadp pung/tom prof tom PTs - Nos pungs, 2 EPR Raw studge Pung talled R Hors Gallons Resh nd Gening Balances Park 4 2 8 Medium Le Process Descret N <th>Refer to Appendix 8 for Customer Commuications requirements. Consider LA notification if prolonged event.</th> <th>BRST 10</th> <th>с</th> <th>Y</th> <th>Team Manager / Process Controller / M&E</th> <th>L</th> <th>unit stages are fully operational and use drum thickeners to maximum</th> <th>Medium</th> <th>8</th> <th>4 2</th> <th>Gallions Reach and Gemini Business Park</th> <th>Weeks</th> <th>R</th> <th>Multiple tanks failure</th> <th></th> <th>Raw sludge</th> <th>EPR</th> <th>PFTs - 4 Nos PFT tanks</th> <th>Raw sludge thickening</th>	Refer to Appendix 8 for Customer Commuications requirements. Consider LA notification if prolonged event.	BRST 10	с	Y	Team Manager / Process Controller / M&E	L	unit stages are fully operational and use drum thickeners to maximum	Medium	8	4 2	Gallions Reach and Gemini Business Park	Weeks	R	Multiple tanks failure		Raw sludge	EPR	PFTs - 4 Nos PFT tanks	Raw sludge thickening
Raw sludge Rickening PFTs - Nos PFTs - Nos profiles EPR Raw sludge lux to PFTs Paller of odor control unit o PFTs R Hours Gallons Recht and Gening Bainess Park 4 16 High Use dann holosons bi redoc nave sludge control unit o PTTs Sin Manager (h) U Sin Manager (h) V C BBS 112 Raw sludge New sludge control redoc nave sludge contredoc nave sludge c	11	BRST 11	с	N		L		Medium	8	4 2	Gallions Reach and Gemini Business Park	Hours	R	Sludge spillage			EPR	PFTs - 4 Nos PFT tanks	Raw sludge thickening
Integranding Non-purpole stations EPR Raw studge C <thc< th=""> C <thc< th=""> C C C<th>Refer to Appendix 8 for Customer Commuications requirements. Consider LA notification if prolonged event.</th><th>BRST 12</th><th>с</th><th>Y</th><th>Drocess</th><th>L</th><th></th><th>High</th><th>16</th><th>4 4</th><th></th><th>Hours</th><th>R</th><th>Failure of odour control unit to PFTs</th><th></th><th>Raw sludge / Supernatant</th><th>EPR</th><th>PFTs - 4 Nos PFT tanks</th><th></th></thc<></thc<>	Refer to Appendix 8 for Customer Commuications requirements. Consider LA notification if prolonged event.	BRST 12	с	Y	Drocess	L		High	16	4 4		Hours	R	Failure of odour control unit to PFTs		Raw sludge / Supernatant	EPR	PFTs - 4 Nos PFT tanks	
Raw sludge inicidening Sludge purpling toor PFTs - 6 Nos purpls, 2 Nos purpling stations EPR Raw sludge Pump failed R Hors Gallons Resch and Gemin Baciness Park 4 2 8 Medium Lie stand ty purps and wach down lacking Pump failed N N BRST 14 Raw sludge Sludge purpling tool PFTs - 6 Nos purpling Nos purpling stations EPR Raw sludge Pump out for maintenance P Mos Gallons Resch and Gemin Baciness Park 4 2 8 Medium Lie stand ty purps and wach down lacking L Process Controler Tech N N BRST 15 Raw sludge Drum Thickenens EPR Raw sludge C C C C Gallons Resch and Gemin Baciness Park 4 1 4 Low Covered index controler for doarce cont	13	BRST 13	N	N			Enclosed building	Low	4	4 1	Gallions Reach and Gemini Business Park				с	Raw sludge	EPR	Sludge pumping from PFTs - 6 Nos pumps, 2 Nos pumping stations	Raw sludge thickening
Raw sludge Dugs pumping from PFTs - Nos pumping EPR Raw sludge Pump out or maintenance P Hours Callions Reach and Gemins Budness Faxt 4 2 8 Medium Lie stand typungs and weah down todily L Process L N N BRST 15 Raw sludge Drum Trickeners EPR Raw sludge C C C Gallions Reach and Gemins Budness Faxt 4 1 4 Low Covered ride/ outdown todily V N N BRST 16 Raw sludge Drum Trickeners EFR Raw sludge C Spliker / Lestange R Hours Gallions Reach and Gemins Budness Faxt 4 1 4 Low Covered ride/ outdown todily V N BRST 16 Raw sludge Drum Trickeners EFR Raw sludge Spliker / Lestange R Hours Gallions Reach and Gemins Reach and 4 2 8 Medium Covered ride/ outdown todily L N N BRST 16 Raw sludge Drum Trickeners EFR Raw sludge Spliker / Lestange R Hours Gallions Reach and 4 2 8 <th>14</th> <th>BRST 14</th> <th>N</th> <th>N</th> <th>Controller / Tech</th> <th>L</th> <th>Use stand by pumps and wash down facility</th> <th>Medium</th> <th>8</th> <th>4 2</th> <th>Gallions Reach and</th> <th>Hours</th> <th>R</th> <th>Pump failed</th> <th></th> <th>Raw sludge</th> <th>EPR</th> <th>Sludge numping from PETs - 6 Nos numps 2</th> <th>Raw sludge</th>	14	BRST 14	N	N	Controller / Tech	L	Use stand by pumps and wash down facility	Medium	8	4 2	Gallions Reach and	Hours	R	Pump failed		Raw sludge	EPR	Sludge numping from PETs - 6 Nos numps 2	Raw sludge
Initiating Other Mathematical Other Mathematical Other Mathematical Other Mathematical Other Mathematical Raw sludge Drum Thickeners EPR Raw sludge Splitage /Leskage R Hours Galitors Reach and Galitors Reach and Mathematical 4 2 8 Medium Clear splitage, wash down L Chronolder Tech N N BRST 17	15	BRST 15	N	N	Process Controller / Tech	L	Use stand by pumps and	Medium	8	4 2	Gallions Reach and Gemini Business Park	Hours	e P	Pump out for maintenance		Raw sludge	EPR	Sludge pumping from PFTs - 6 Nos pumps, 2	Raw sludge thickening
Raw sludge Drum Thickeners EFR Raw sludge Splilloge / Laskage R Hours Gallions Resch and 4 2 8 Medium Clear splilage, wash down Process Process N N BRS 17	16 Enclosed building and drum thickeners contained and odour controlled.	BRST 16	1	N				Low	4	4 1					С	Raw sludge	EPR	Drum Thickeners	Raw sludge thickening
thickening Gemin Business Park Gemin Business Park		BRST 17	N	N	Controller / Tech	L		Medium	8	4 2		Hours	R	Spillage / Leakage		Raw sludge	EPR	Drum Thickeners	
Raw sludge thickening Drum Thickeners EPR Raw sludge OCU talue R Hours Gallons Reach and Gening Budiress Park 4 4 16 High Find cause and resolve SAP/ Process Charged Find CHARGE/Find N BRST 19	18	BRST 18	N	N	Controller / Tech 1 / M&E / Site	L	Find cause and resolve	High	16	4 4		Hours	R	OCU failure		Raw sludge	EPR	Drum Thickeners	Raw sludge thickening

			·																
RAS transfer	RAS return - ASP4: covered pipeworks, ASP 3: 8 Nos open channels, ASP 2: 1 No open channel ASP 1: 8 Nos open sumps.	UWWT	Activated sludge	с				Gallions Reach, Thames view estate, Showcase cinema, Creekmouth and Beckton Triangle Retail Park & Gateway Retail Park & Gateway Retail Park	2	1	2	Low				N	N	BRT 1	
RAS transfer	RAS return - ASP4: covered pipeworks, ASP 3: 8 Nos 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 seration blowers	L	Process Controller	N	N	BRT 2	
RAS transfer	RAS return - ASP4: covered pipeworks, ASP 3: 8 Nos 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	С				Creekmouth	2	1	2	Low				N	N	BRT 4	Open vented chamber
SAS transfer	SAS pumping - Pipes underground	UWWT	Activated sludge	с				Gallions Reach, Thames view estate, Showcase cinema, Creekmouth, Gallions Reach and Gemini Business Park	2	0	0	Low				Ν	N	BST 1	
SAS transfer	SAS buffer tank - 1 No tank	UWWT	Activated sludge	С				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	R	Hours	Gemini Business Park and Creekmouth	2	3	6	Medium	Control level below launder and clean up spillage	L	Process Controller / Tech	N	N	BST 3	Never happened to date.
SAS transfer	SAS buffer tank - 1 No tank	UWWT	Activated sludge		spillage 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	1 / ICA 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	С				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	and a second sec
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	с				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	с	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 / Overfill	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	с	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 Tanks, 1 No Thickened SAS Buffer Tanks 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	с	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 fans / Maintenance team to repair fault	L	Process Controller / M&E / ICA	N	С	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 oclour 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 trailers	L	Team Manager	¥	с	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 Tanks 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	Ρ	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 Tarks (6 Nos Sludge Buffer / Storage Tarks), 3 Nos Riverside Blending Tarks, 4 Nos Raw Sludge Buffer Tanks, 11 No Thickened SAS Buffer Tark 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	с				Gemini Business Park and Creekmouth	3	1	3	Low	Inside SPG builling 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	Ρ	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	

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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	Ρ	Months	Gemini Business Park and Creekmouth	3	2	6	Medium	Use alternative treatment (THP and temporary centrifuges)	L	Site Manager	N	С	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, Showcase cinema, Creekmouth and Beckton Triangle Retail	3	3	9	Medium	Use alternative treatment (THP and temporary centrifuges)	L	Operations Manager	Y	с	BSPG 5	Riverside, Beckon THPs', and temporary centrifuges provide sufficient treatment capacity.
	Sludge Power Generator Stack - Removal of							Park & Gateway Retail Park Gemini Business Park											
Sludge Processing	scrubber combustion gases	EPR	Combusted gases	С				and Creekmouth	1	0	0	None				N	N	BSPG 6	
Sludge Processing	Ash removal - Tankered disposal of ash	EPR	Ash	1				Gemini Business Park and Creekmouth	0	0	0	None				N	N	BSPG 7	
Sludge Processing	Filtrate removal to STW	EPR	Filtrate	С				Gemini Business Park and Creekmouth	3	1	3	Low				N	с	BSPG 8	
Sludge Processing	Drainage removal to STW	EPR	Sulphides	1				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	м	Specialist Process Controller / Process Controller / Tech 1	N	N	BSPG 10	
Sludge Processing	Thermal Hydrolysis Plant	EPR	Sludge	с					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	С					3	1	3	Low							
Sludge Movements	Cake Barn	EPR	Sludge	с					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						
Decomissioned 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	С				Gemini Business Park and Creekmouth	0	0	0	None				N	N	BDD 1	Normal operation considered: not in operation and drained.
Decomissioned 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 Biofilters, 1 No chemical scrubber, 4 Nos activated carbon filters) - PFTs, sludge Blanding tarks, sludge Buffer Tanks, sludge mixing chamber, raw sludge thickening plant, Riverside PS	EPR	None	с				Gemini Business Park and Creekmouth	0	0	0	None				N	N	OC 1	
Odour Control Units	OCU 1 (4 Nos Biofilters, 1 No chemical scrubber, 4 Nos activated carbons) - 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 Biofilters, 1 No chemical scrubber, 4 Nos activated carbon filiters) - 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 Biofilters, 1 No chemical scrubber, 4 Nos activated carbon filiters) - 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 Biofilters, 1 No chemical scrubber, 4 Nos activated carbon filiters) - 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 stations.
Odour Control Units	OCU 1 (4 Nos Biofilters, 1 No chemical scrubber, 4 Nos activated carbon filiters) - 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 repare 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 Biofilter, 1 No activated carbon filter) - Storm area chamber	EPR	None	С				Gallions Reach	0	0	0	None				N	N	OC 7	
Odour Control Units	OCU 2 (1 No Biofilter, 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 Biofilter, 1 No activated carbon filter) - Storm area chamber	EPR	Sewage		Carbon failure	R	Days	Gallions Reach	2	2	4	Low	Ensure biofilter 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 Biofilter, 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 Biofilter, 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 repare instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N	OC 11	Other stage can cope with normal operation.
Odour Control	OCU 3 (1 No Biofilter, 1 No activated carbon	EPR	None	С	1		1	Gallions Reach	0	0	0	None			1	N	N	OC 12	
Units Odour Control	filter) - Inlet works OCU 3 (1 No Biofilter, 1 No activated carbon			-	1		1						Use alternative washwater		Process				Other stage can cope with normal
Odour Control Units Odour Control	filter) - Inlet works	EPR	Sewage		Loss of washwater	R	Hours	Gallions Reach	2	2	4	Low	supply / Carbon filter available Ensure biofilter is fully	L	Controller / Tech 1 Process	N	N	OC 13	Other stage can cope with normal operation.
Units Odour Control	filter) - Inlet works	EPR	Sewage		Carbon failure	R	Days	Gallions Reach	2	2	4	Low	operational and replace carbon	L	Controller / Tech 1 / Site Manager Process	N	N	OC 14	operation.
Units	filter) - Inlet works	EPR	Sewage		Power failure	R	Hours	Gallions Reach	2	2	4	Low	Reinstate power	L	Controller / M&E	N	N	OC 15	<u>↓</u>
Odour Control Units	OCU 3 (1 No Biofilter, 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 repare 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 Biofilter, 2 Nos activated carbon filters) - PST Feed channel area	EPR	None	С			1	Gallions Reach	0	0	0	None				N	N	OC 17	
Odour Control	OCU 4 (1 No Biofilter, 2 Nos activated carbon	EPR	Sewage and return liquors		Loss of washwater	R	Hours	Gallions Reach	3	2	6	Medium	Use alternative washwater		Process	N	N	OC 18	Other stage can cope with normal
Units	filters) - PST Feed channel area	EPK	Sewage and return inquors		Loss or washwater	ĸ	nours	Gallons Reach	3	4	0	Medium	supply / Carbon filter available	L	Controller / Tech 1	N	N	UU 18	operation.

ur Control Units OCU 4 (1 No Biofilter, 2 Nos activated c filters) - PST Feed channel area	arbon 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 wih normal operation.
ur Control OCU 4 (1 No Biofilter, 2 Nos activated c Units filters) - PST Feed channel area	arbon EPR	Sewage and return liquors	Power failure	R Hours	Gallions Reach	3	2	6	Medium	Switch to alternative power supply	L	Process Controller / M&E	N	N	OC 20	
ur Control Units OCU 4 (1 No Biofilter, 2 Nos activated c filters) - PST Feed channel area	arbon EPR	Sewage and return liquors	Instrument failure	R Hours	Gallions Reach	3	2	6	Medium	Ensure other stage is fully operational / ICA Tech to repare instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N	OC 21	Other stage can cope with normal operation.
ur Control OCU (2 stage biofilter and activated car Units North PSTs	bon) - EPR	None C			Gallions Reach and Gemini Business Park	0	0	0	None							
ur Control OCU (2 stage biofilter and activated car Units North PSTs	bon) - 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		
Units OCU (2 stage biofilter and activated car North PSTs	bon) - 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		
ur Control OCU (2 stage biofilter and activated car Units North PSTs	bon) - 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 / M&E	N	N		
ur Control OCU (2 stage biofilter and activated car Units North PSTs	bon) - 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 repare instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N		
ur Control OCU (2 stage biofilter and activated car Units North PSTs	bon) - EPR	Sewage and return liquors C			Gallions Reach and Gemini Business Park	0	0	0	None							
Units OCU (2 stage biofilter and activated car North PSTs	bon) - 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		
ur Control OCU (2 stage biofilter and activated car Units North PSTs	bon) - 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		
Units OCU (2 stage biofilter and activated car North PSTs	bon) - 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 / M&E	N	N		
ur Control Units OCU (2 stage biofilter and activated car North PSTs	bon) - 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 repare instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N		
ur Control THP OCU (2-stage bio-trickling filter an Units carbon filters) - Enhanced Digestion Far	i 2No EPR	Sludge C				0	0	0	None							
Units THP OCU (2-stage bio-trickling filter an carbon filters) - Enhanced Digestion Far	i 2No 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		
ur Control THP OCU (2-stage bio-trickling filter an carbon filters) - Enhanced Digestion Far	i 2No EPR ilities	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		
ur Control THP OCU (2-stage bio-trickling filter an Units carbon filters) - Enhanced Digestion Far	i 2No EPR	Sludge	Power failure	R Hours		3	2	6	Medium	Switch to alternative power supply	L	Process Controller / M&E	N	N		
ur Control Units THP OCU (2-stage bio-trickling filter an carbon filters) - Enhanced Digestion Far	1 2No EPR	Sludge	Instrument failure	R Hours		3	2	6	Medium	Ensure other stage is fully operational / ICA Tech to repare instrumentation	L	Process Controller / Tech 1 / ICA Tech	N	N		
ur Control THP OCU (2-stage bio-trickling filter an	1 2No										EPR Sudge Instrument failure R Hours 3 2 6 Medium certains/ Later to approximate / Cater to app	EPR Sludge Instrument failure R Hours 3 2 6 Medium operational / CATE L	EPR Sludge Instrument failure R Hours 3 2 6 Medium operational / Controller / Contr	EPR Studge Instrument failure R Hours 3 2 6 Medium operational (CAT End) Process	EPR Sudge Instrument failure R Hours 3 2 6 Medium Central of the process N N	EPR Studge Instrument failure R Hours 3 2 6 Medium constraint of the failure Process