

Ministerial Statement 755 2019-20 Performance and Compliance Report

Alkimos Wastewater Treatment Plant – Site B
City of Wanneroo





Document History

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1. Introduction

The Alkimos Wastewater Treatment Plant (AWWTP) was constructed to cater for anticipated population growth in the Alkimos catchment, which is expected to reach around 150,000 by 2030 (Water Corporation 2008). The Alkimos Wastewater Scheme is now fully commissioned and provides treatment to secondary quality before discharge of the treated wastewater to the ocean.

A proposal to construct the AWWTP was formally assessed by the Environmental Protection Authority (EPA) in 2007, at the Public Environmental Review (PER) level. Subsequently, Ministerial Statement (MS) 755 was released in November 2007.

Condition 4 of MS 755 describes the requirements for compliance reporting:

- 4-1 *The proponent shall submit to the CEO environmental compliance reports annually, reporting on the previous twelve-month period, unless required by the CEO to report more frequently.*
- 4-2 *The environmental compliance reports shall address each element of an audit program approved by the CEO and shall be prepared and submitted in a format acceptable to the CEO.*
- 4-3 *The environmental compliance reports shall:*
 1. *be endorsed by signature of the proponent's Chief Executive Officer or a person, approved in writing by the CEO, delegated to sign on behalf of the proponent's Chief Executive Officer;*
 2. *state whether the proponent has complied with each condition and procedure contained in this statement;*
 3. *provide verifiable evidence of compliance with each condition and procedure contained in this statement;*
 4. *state whether the proponent has complied with each key action contained in any environmental management plan or program required by this statement;*
 5. *provide verifiable evidence of conformance with each key action contained in any environmental management plan or program required by this statement;*
 6. *identify all non-compliances and non-conformances and describe the corrective and preventative actions taken in relation to each non-compliance or non-conformance;*
 7. *provide an assessment of the effectiveness of all corrective and preventative actions taken; and*
 8. *describe the status of implementation of the proposal.*
- 4-4 *The proponent shall make the environmental compliance reports required by condition 4-1 publicly available in a manner approved by the CEO.*

This Performance and Compliance Report (PCR) fulfils the requirements of MS 755 condition 4 and covers the period July 2019 to June 2020 (2019-20).



2. Current Status

The AWWTP is currently operational under Part V Licence L8434/2010/1, discharging on average 12.25 ML/day for the July 2019 to June 2020 reporting period. There were no major changes to plant infrastructure or operations during this time.

A revised Odour Management Plan (OMP) was submitted to DWER on 3 August 2020 to accompany the Works Approval application for the 26ML/day upgrade. Until the new OMP is approved, the AWWTP will operate under the existing approved 2010 OMP.

All reports, reviews and management plans relating to the Alkimos Strategic Ocean Outlet Monitoring (ASOOM) program are available on the Water Corporation's website:

<https://www.watercorporation.com.au/Our-water/Wastewater/Ocean-outfall/Alkimos-monitoring-program>



3. Compliance

3.1 Internal/External Audits

This performance compliance report (PCR) constitutes an internal audit by the proponent against the conditions and commitments of MS755.

No external audits were carried out in the reporting period, although DWER visited the WWTP as part of the Works Approval process for the proposed upgrade; no issues were identified at this time.

3.2 Complaints

No complaints were received during the reporting period.

3.3 Non-Compliances

No non compliances were identified during the reporting period.



4. Environmental Monitoring and Management

4.1 Odour Management

Quarterly odour monitoring is conducted at AWWTP by a qualified third party (Ektimo). Results of this monitoring continue to indicate that there is a minimal odour risk to the surrounding residents (refer Table 1).

Table 1 2019-20 quarterly stack monitoring results

	Flow Rate (Volumetric Gas)	H2S Emission Rate	Hydrogen Sulphide	Odour Unit	Temperature
	m3/sec	mg/sec	mg/m3	ou	C
Jul 2019	17	8.4	0.49	2400	15
Oct 2019	18	4.25	0.24	840	22
Jan 2020	16	2.65	0.16	770	31
Apr 2020	18	11.05	0.62	830	27

An analysis of both continuous and manual H₂S monitoring conducted in 2019-20 demonstrated that the photo-ionisation (PI) unit, installed for treatment of emissions from “high” odour activities, provided little to no value in treating odour at Alkimos WWTP. The technology in the unit requires high concentrations of H₂S to be effective, which were anticipated in design but have not eventuated in operation. The most effective treatment of the high odour concentrations is dilution with extracted air from the oxiditches, which reduces H₂S at the stack to well below the 1.5ppm threshold applied to the site.

Based on the above findings, in addition to the labour and financial costs of maintaining the PI unit, the PI unit was bypassed, but maintained as a contingency option. Manual sampling to the stack continued, as did the continuous monitoring at 4 odour control process points.

Water Corporation engaged with DWER on this matter in October 2019, when odour specialists visited Alkimos WWTP to review site conditions as part of the proposed Works Approval submission for the 26ML plant upgrade. The option of bypassing the PI unit had in principle support at the time.

The PI unit is able to be quickly returned to operation if monitoring indicates unacceptable H₂S levels, or if any complaints from residents are received. Since the unit has been turned off in March 2020, monitoring has shown continued low H₂S emissions from the stack (Figure 1) and no odour complaints have been received.

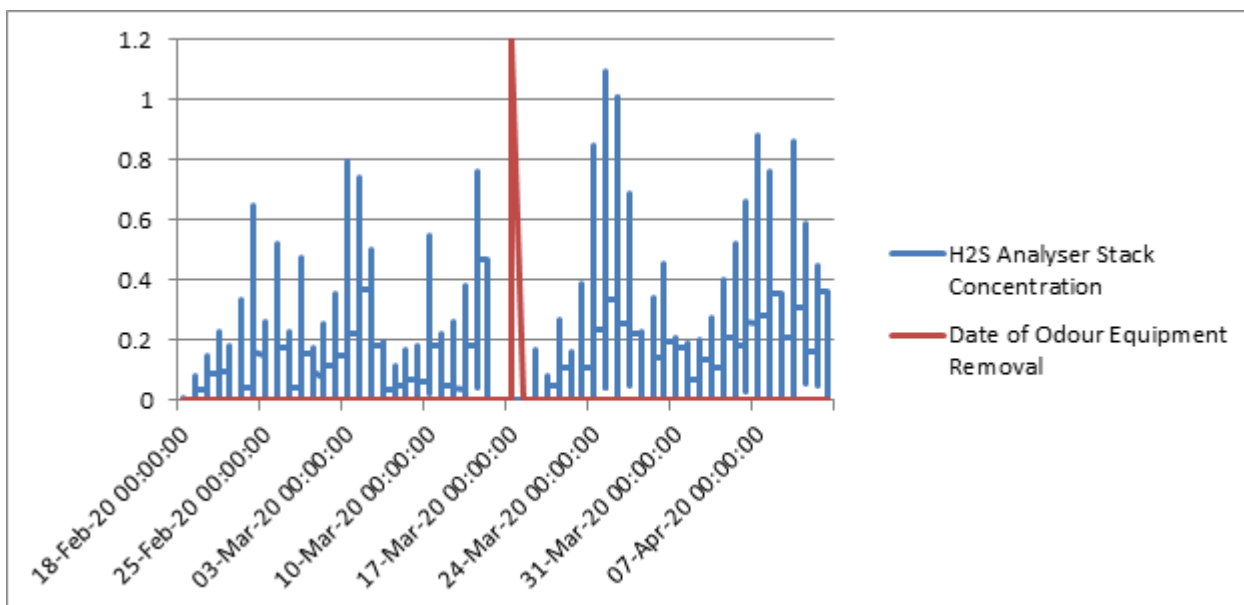


Figure 1 H2S concentrations at exhaust stack 4 weeks pre and post PI unit switch off

Water Corporation notified DWER of these changes to the PI unit operation via email in December 2019.

4.2 Marine Environmental Management

Marine water quality monitoring for the reporting period was undertaken in accordance with AWWTP Marine Treated Wastewater Discharge Monitoring and Management Plan (MTWDM&MP, Oceanica 2011).

In accordance with the MTWDM&MP, the following environmental quality objectives (EQOs) were assessed:

- Maintenance of Ecosystem Integrity (EQO 1);
- Maintenance of Aquatic Life for Human Consumption (EQO 2); and
- Maintenance of Primary and Secondary Contact Recreation (EQO 3 & 4).

The extent to which the EQOs were met was assessed against a suite of Environmental Quality Criteria (EQC), consisting of Environmental Quality Guidelines (EQG) and Environmental Quality Standards (EQS).

The compliance assessment summary for 2019-20 is shown in Table 3 below, and demonstrates that all EQO were met during the reporting year. The compliance summary uses colour coding to represent the extent to which the EQC were met (Table 2). Note that assessment against any EQS was not required as all EQG were met.

Detailed results of marine monitoring program for 2019-20 can be found in Appendix A.



Table 2 Compliance Report Card Legend




Management response	Legend
Monitor: EQG met: continue monitoring	
Investigative: EQG not met: assess against EQS. EQS met	
Action: EQS not met: management response required	



Table 3 2019/20 Marine Monitoring Compliance Report Card

Environmental Quality Criteria	Measurement Criteria	Assessment
EQO 1 – MAINTENANCE OF ECOSYSTEM INTEGRITY		
EQG 1	Concentrations of contaminants not to exceed the ANZECC/ARMCANZ (2000) 80% species protection guideline for bioaccumulating toxicants at the diffuser	■
EQG 2	Concentrations of contaminants not to exceed the ANZECC/ARMCANZ (2000) 99% species protection guideline for toxicants (with the exception of cobalt, where the 95% species protection guideline will apply) at the boundary of the LEPA	■
EQG 3	The total toxicity of the mixture for the additive effect of ammonia, copper and zinc (as per ANZECC/ARMCANZ (2000) guidelines) must be <1.0.	■
EQG 4	The EQG will be exceeded if the 1 hr sea urchin test: $\frac{TDA}{DRNOEC} \leq 1.0$ <p>Where TDA = typical dilutions achieved (constant based on 200-fold dilution); and DRNOEC = number of dilutions required to achieve the no observed effects concentration (NOEC).</p>	■
EQG 5	Ambient value of defined area during non-river flow period for chlorophyll-a is not to exceed the 80th percentile of the combined reference site data.	■
EQG 6	If either Trigger A or Trigger B is not met, EQG 6 is exceeded: A. Median sediment total contaminant concentration from a defined sampling area should not exceed the guideline value for high, moderate and low ecological protection areas. B. Total contaminant concentration at individual sample sites should not exceed the guideline resampling trigger (Table 6). If so, repeat sampling will be conducted to define the extent of the contamination which will be assessed as per trigger A	N/A – Sediment sampling required in 2020-21
EQO 2 – MAINTENANCE OF AQUATIC LIFE FOR HUMAN CONSUMPTION		
EQG 1	The median in-water thermotolerant coliform (TTC) value should not exceed 14 CFU/100 mL, with no more than 10% samples exceeding 21 CFU/100 mL measured using the membrane filtration method (Table 4, EPA 2005a).	■
EQO 3 & 4 – MAINTENANCE OF PRIMARY AND SECONDARY CONTACT RECREATION		
EQG 1	The maximum value of the pooled Enterococci spp. must be less than the National Health and Medical Research (NHMRC) category A guideline value of ≤ 40 Enterococci spp. MPN/100mL for recreational water bodies (NHMRC 2008).	■



4.3 Ocean Outlet Management

Water Corporation notified DWER (30 April 2020) of some planned maintenance for stabilising the outfall, and this is still scheduled to be done during summer 2020/21.

Condition 11–3.8 of Ministerial Statement 755 requires monitoring of the diffuser performance to determine whether the diffuser is achieving the required number of initial dilutions within the area of low level of ecosystem protection. Diffuser performance verification was carried out in 2019-20, with compliance achieved against all assessment criteria. Refer to the Annual Report in Appendix A for further detail on results.

4.4 Environmental Management

Environmental land management was managed by the Alkimos Wastewater Treatment Plant and Buffer Zone Environmental and Land Management Plan (LMP, Water Corporation 2013). This was developed in part to manage the conservation values of the site following the implementation of the Terrestrial Construction Management Plan required by MS 755.

The ongoing management actions required in the LMP were completed throughout the 2019-20 year, including:

- Regular inspections, repair and replacement of fencing and signage;
- Inspections of the site for vehicular damage and resultant vegetation loss; and
- Monthly security patrols.

Monthly inspections of fencing, signage and damage are scheduled as part of the Maintenance Plan for the site (Maintenance Item #146359).

5. Stakeholder Consultation

Stakeholder consultation for the reporting period included periodic correspondence and report submissions as required.

As per condition M11.5 all reports, reviews and management plans relating to the Alkimos Strategic Ocean Outlet Monitoring (ASOOM) program are made publically available by inclusion on the Water Corporation's website:

<https://www.watercorporation.com.au/Our-water/Wastewater/Ocean-outfall/Alkimos-monitoring-program>



6. OEPA Audit Table

The OEPA Audit Table updated with the current status for each Ministerial condition is shown below, which includes the completed conditions as requested.

Note:

- Phases that apply in this table = Pre-Construction, Construction, Operation, Decommissioning, Overall (several phases)
- This audit table is a summary and timetable of conditions and commitments applying to this project. Refer to the Minister's Statement for full detail/precise wording of individual elements.
- Code prefixes: M = Minister's condition; P = Proponent's commitment; A = Audit specification; N = Procedure.
- Abbreviations: CAR = Compliance Assessment Report; CEO = Chief Executive Officer of OEPA; DEC = Department of Environment and Conservation; DER = Department of Environment Regulation; DIA = Department of Indigenous Affairs; DMP = Department of Mining and Petroleum; DoH = Department of Health; DoW = Department of Water, EPA = Environmental Protection Authority, Minister for Env = Minister for the Environment; OEPA = Office of the Environmental Protection Authority.
- Compliance Status: C = Compliant, CLD = Completed, NC = Non – compliant, NR = Not Required at this stage. Please note the terms NA = Not Audited and VR = Verification Required are only for OEPA use. IP = In Process may only be used by the proponent in circumstances outlined in Section 2.8 of the Post Assessment Guideline for Preparing an Audit Table.

Table 4 OEPA Audit Table

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
755:M1-1	Proposal Implementation	Implement the proposal as documented and described in Schedules 1, 2 and 3 of Statement 755	In accordance with above and other design and technical specifications provided in the Public Environmental Review	Compliance reports submitted in accordance with Conditions 4-1, 4-2, 4-3 and 4-4	Overall		C	This Performance and Compliance Report
755:M2-1	Proponent Nomination and Contact Details	The proponent nominated by the Minister for the Environment under S38(6) or 38(7) of the EP Act, 1986 is responsible for the implementation of the proposal			Overall		C	Proponent is Water Corporation.
755:M2-2	Proponent Nomination and Contact Details	Notify the CEO of the DEC of any change of the name and address of the proponent within 30 days of the change	In writing to CEO of the DEC	Letter notifying the CEO of change in proponent details	Overall	Within 30 days of the change	C	No change in proponent name or address
755:M3-1	Time Limit of Authorisation	Substantially commence implementation of the proposal within five years of the date of this Statement or the approval granted in this statement shall lapse and be void			Overall	Within five years of the date of Statement 755	CLD	
755:M3-2	Time Limit of Authorisation	Notify the CEO that the proposal has substantially been commenced on or before the expiration of five years from the date of the Statement		Letter notifying the CEO the proposal has been substantially commenced	Overall		CLD	
755:M4-1	Compliance Reporting	Submit compliance reports to the CEO		Compliance Report	Overall	Annually	C	2018-19 MS755 PCR submitted to OEPA on 26th September 2019. This 2019-20 PCR submitted to OEPA.
755:M4-2	Compliance Reporting	Prepare and submit an audit program approved by the CEO of DEC		Compliance Report	Overall	Due in February 2009	CLD	



Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
755:M4-3	Compliance Reporting	Submit environmental compliance report to DEC	Environmental compliance reports shall: 1. be endorsed by signature of the proponent's Chief Executive Officer or a person, approved in writing by the CEO, delegated to sign on behalf of the proponent's Chief Executive Officer; 2. state whether the proponent has complied with each condition and procedure contained in this statement; 3. provide verifiable evidence of compliance with each condition and procedure contained in this statement; 4. state whether the proponent has complied with each key action contained in any environmental management plan or program required by this statement; 5. provide verifiable evidence of conformance with each key action contained in any environmental management plan or program required by this statement; 6. identify all non-compliances and non-conformances and describe the corrective and preventative actions taken in relation to each non-compliance or non-conformance; 7. provide an assessment of the effectiveness of all corrective and preventative actions taken; and 8. describe the state of implementation of the proposal.	Compliance Report.	Overall	Annually, unless required by the CEO to report more frequently	C	2018-19 MS755 PCR submitted to OEPA on 26 th September 2019. (Appendix B). This 2019-20 PCR submitted to OEPA. PCR contains the information required in Condition 4-3.
755:M4-4	Compliance Reporting	Environmental compliance reports to be made publicly available in a manner approved by the CEO	Carry out the following: 1) Post document on proponents website; 2) Provide document to members of the public upon request; 3).Post document on the internal Corporate EMS Portal	Provision of link to the website.	Overall	Annually, unless required by the CEO to report more frequently.	C	Annual PCR available on the Water Corporation website: https://www.watercorporation.com.au/Our-water/Wastewater/Ocean-outfall/Alkimos-monitoring-program
755:M5-1	Performance	Submit a Performance Review every five years after the start of construction.	Report shall address: 1. the major environmental issues associated with implementing the project; the environmental objectives for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those objectives; 2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable; 3. investigations undertaken in relation to developing alternative options to ocean disposal of treated wastewater, including wastewater re-use; 4. significant improvements gained in environmental management, including the use of external peer reviews; 5. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and 6. the proposed environmental objectives over the next five years, including improvements in technology and management processes	Performance Review submitted every five years after the start of construction	Overall	Every five years after the start of construction.	C	5-year Performance Review Report (PRR) submitted to OEPA on 10 April 2018 (see Appendix C).
755:M6-1	Terrestrial Construction Management Plan	Tunnelling of the overland pipeline	Use up to three launch/recovery chambers located within the footprint of the WWTP and the footprint of the launch site during tunnelling. Any intermediate chamber is to be located outside Bush Forever sites and Conservation Areas identified by the Water Corporation	Compliance Report	Construction		CLD	
755:M6-2	Terrestrial Construction Management Plan	Submit a Terrestrial Construction Management Plan that meets the objectives of condition 6-3 and requirements of condition 6-4, prior to commencement of clearing for implementation of pipeline	As per Condition 6-4	Submission of the Terrestrial Construction Management Plan.	Pre-construction	Prior to commencement of clearing for implementation of pipeline.	CLD	
755:M6-3	Terrestrial Construction Management Plan	Protect native vegetation and landforms on the site outside the area of disturbance as defined in Figure 3 in Schedule 2 and Figure 4 in Schedule 3			Pre-construction		CLD	



Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
755:M6-4	Terrestrial Construction Management Plan	Prepare a Terrestrial Construction Management Plan	Plan shall address: 1. modification and configuration (dimension, shape and gradient) of the launch site as far as practicable to minimise the impact of the on terrestrial vegetation and formations launch site dimensions; 2. access roads; 3. sheds, amenities, and other facilities to be installed; 4. management of activities in areas outside the area of disturbance as defined in Figure 3 in Schedule 2 and Figure 4 in Schedule 3; 5. depth of burial of pipe sufficient to withstand a one-in-one hundred year storm; 6. impacts on the beach profile; 7. Bush Forever site, including <i>Frankenia pauciflora</i> ; 8. Threatened Ecological Communities; and 9. rehabilitation of the launch site/s		Pre-construction		CLD	
755:M6-5	Terrestrial Construction Management Plan	Proponent shall Implement Terrestrial Construction Management Plan	As outlined in the Terrestrial Construction Management Plan	Compliance Report	Construction		CLD	Construction and TCMP actions completed. Refer to 5-year ASOOM PRR submitted to OPEA on 10 July 2013 for evidence.
755:M6-6	Terrestrial Construction Management Plan	Proponent to make the Terrestrial Construction Management Plan publicly available in a manner approved by CEO	Carry out the following: 1) Post document on proponents website; 2) Provide document to members of the public upon request; 3).Post document on the internal Corporate EMS Portal	Provision of link to the website	Construction		CLD	TCMP available on the Water Corporation website: https://www.watercorporation.com.au/Our-water/Wastewater/Ocean-outfall/Alkimos-monitoring-program
755:M6-7	Terrestrial Construction Management Plan	Prior to ground-disturbing activities the proponent shall put in place measures to delineate and protect the locations of plants, vegetation, or other areas of particular conservation significance. In carrying out rehabilitation activities, the proponent shall only use native plant species of local provenance, defined as plant material or seeds collected within ten kilometres of the project site, except with permission in writing from the CEO	As documented in the Terrestrial Construction Management Plan	Compliance Report	Construction	Prior to ground-disturbing activities	CLD	
755:M7-1	Stability of dunes	The proponent shall construct the WWTP and associated works to ensure the ongoing stability of the dunal system outside the area of disturbance as defined in Figure 3 in Schedule 2 and Figure 4 in Schedule 3		Compliance Report	Construction		CLD	
755:M8-1	Ocean Outlet Pipeline Construction Management Plan (Marine)	Prior to commencement of installation of the pipeline the proponent shall prepare and submit an Ocean Outlet Pipeline Construction Management Plan	Meet the objectives set out in condition 8-2 and meet the requirements of condition 8-3	Submission of the Plan	Pre-construction	Prior to commencement of installation of the pipeline	CLD	
755:M8-2	Ocean Outlet Pipeline Construction Management Plan (Marine)	(a) Ensure maintenance of ecological integrity of marine waters surrounding the Alkimos Project Site; (b) Ensure final area of disturbance is within area defined in Figure 5 and Table 4 in Schedule 4.			Pre-construction		CLD	



Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
755:M8-3	Ocean Outlet Pipeline Construction Management Plan (Marine)	Ocean Outlet Pipeline Construction Management Plan (Marine).	Plan shall address: 1. route design; 2. define the spatial definition of the extent of the disturbance footprint (a) direct loss of habitat due to construction, (b) indirect loss of habitat due to construction (sediment plume impacts & loss of light and burial); 3. prediction and spatially definition of the long-term stable state of the marine environment following construction and taking into account indirect effects of construction and on-going impacts from the presence of infrastructure & i.e. predicted impacts (the extent and severity) on the marine environment of indirect impacts (construction and ongoing impact (see Note 9). 4. amount and type of material to be excavated; 5. rehabilitation of excavated trenches; 6. blasting techniques and areas where blasting occurs; 7. identify where drilling and open-cut techniques (minimising open-cut technique) are to be used for the entire pipe installation; 8. positioning of pipe-laying vessels, mooring pattern design and dredge support vessels; 9. management of benthic community in construction areas; 10. monitoring and establishment of impact from anchoring, wire and chain sweep techniques, marine dredging and supra-tidal excavation techniques used; 11. identification of areas to be dredged, excavated and the timing and duration of dredging/excavation; 12. water quality targets for criteria that will trigger management of sedimentation and protection of benthic community; 13. monitoring reporting, and mitigating impacts on natural littoral drift processes from construction activities and beach profiles during construction; and 14. the management actions and contingencies that will be implemented in the event that criteria for water quality targets required by point 12 above are not being met	The Ocean Outlet Pipeline Construction Management Plan (Marine)	Pre-construction		CLD	
755:M8-4	Ocean Outlet Pipeline Construction Management Plan (Marine)	Proponent to ensure that the diffuser is located in a position to reduce the likelihood of plume impacts on high relief algal reefs immediately to the east of the outlet	Extend pipe length by 200 metres from the end of pipe in Figure 4.17 of proponents Public Environmental Review document (Version 3, 8 November 2005).	Compliance Report	Construction		CLD	
755:M8-5	Ocean Outlet Pipeline Construction Management Plan (Marine)	Proponent to ensure extent of disturbance footprint (direct and indirect loss of habitat) is no greater than that defined in condition 8-3 (2)		Compliance Report	Construction		CLD	
755:M8-6	Ocean Outlet Pipeline Construction Management Plan (Marine)	Proponent to ensure extent of the disturbance footprint (direct impacts) is no greater than the area defined in Figure 5 and Table 4 in Schedule 4		Compliance Report	Construction		CLD	
755:M8-7	Ocean Outlet Pipeline Construction Management Plan (Marine)	Proponent to minimise indirect impacts as far as practicable within boundary as specified in Condition 8-6		Compliance Report	Construction		CLD	
755:M8-8	Ocean Outlet Pipeline Construction Management Plan (Marine)	The proponent will ensure the pipeline is laid within the area defined in Figure 5 and Table 4 in Schedule 4, and the Òline of direct disturbance footprint will also be within the area. (see note 9)..		Compliance Report	Construction		CLD	
755:M8-9	Ocean Outlet Pipeline Construction Management Plan (Marine)	Proponent shall implement the Ocean Outlet Pipeline Construction Management Plan (Marine).	As per condition 8-3	Compliance Report	Construction		CLD	
755:M8-10	Ocean Outlet Pipeline Construction Management Plan (Marine)	Proponent to make the Ocean Outlet Pipeline Construction Management Plan (Marine) publicly available in a manner approved by CEO	Carry out the following: 1) Post document on proponents website; 2) Provide document to members of the public upon request; 3).Post document on the internal Corporate EMS Portal		Construction		CLD	OOPCMP available on the Water Corporation website: https://www.watercorporation.com.au/Our-water/Wastewater/Ocean-outfall/Alkimos-monitoring-program



Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
755:M9-1	Seabed and Benthic Habitat Monitoring and Management Plan	Prior to commencement of construction of the Alkimos ocean outlet in the marine environment, the proponent shall prepare and submit a Seabed and Benthic Habitat Monitoring and Management Plan	To meet the objectives of condition 9-2 and the requirements of 9-3 as determined by the Minister for the Environment	Submission of the Seabed and Benthic Habitat Monitoring and Management Plan	Pre-construction	Prior to commencement of construction	CLD	
755:M9-2	Seabed and Benthic Habitat Monitoring and Management Plan	To ensure that seabed and benthic habitat loss outside the area of direct loss defined in the Plan required by Condition 8-3 (2) is avoided during construction and re-instated following construction			Overall		CLD	
755:M9-3	Seabed and Benthic Habitat Monitoring and Management Plan	The Seabed and Benthic Habitat Monitoring and Management Plan	Plan shall address: 1. Procedures for obtaining and providing to the CEO, within six months following the completion of pipeline installation, an accurate total area and geographically referenced location map of areas of seabed (sub tidal, intertidal and beaches) modification and benthic primary producer habitats lost or damaged during pipeline construction, including specific identification of any areas of loss or damage that are in excess or outside of those areas defined and predicted in the Plan required by Condition 8; 2. Prediction and spatial definition of long-term stable state of the marine environment following construction and taking into account on-going impacts from the presence of infrastructure ÷ i.e. predicted impacts (the extent and severity) on the marine environment of indirect impacts (construction and ongoing impacts) (see also Condition 8-3 (3)); 3. The establishment of a quantitative annual monitoring program of the seabed and benthic habitat condition in, and adjacent to, areas of seabed and benthic primary producer habitats damaged during pipeline installation and the ongoing presence of the infrastructure; and 4. The indicator(s) and criteria to be used to trigger cessation or reduction in the frequency of monitoring after three years following construction or, in the event of the trigger level referred to in item 3 above being exceeded, after the proponent has demonstrated the success of contingency actions in reducing the rate of annual seagrass loss or damage to less than the contingency trigger level referred to in item 3 above, for three successive years; and 5. Reporting procedures.	The Seabed and Benthic Habitat Monitoring and Management Plan	Pre-construction		CLD	
755:M9-4	Seabed and Benthic Habitat Monitoring and Management Plan	Proponent to commence contingency actions to ensure that the rate of post construction seabed and/or benthic primary producer habitat loss or damage is restricted and reduced if within six months of completion of construction the marine habitat outside the area of direct impact has not returned to the state predicted in Condition 9-3 (3)		Compliance Report	Overall	Within six months of completion of construction	CLD	
755:M9-5	Seabed and Benthic Habitat Monitoring and Management Plan	Proponent shall implement the Seabed and Benthic Habitat Monitoring and Management Plan	As per condition 9-3	Compliance Report	Operation		CLD	Plan was implemented for 3 years post construction as required.
755:M9-6	Seabed and Benthic Habitat Monitoring and Management Plan	Proponent shall make the Seabed and Benthic Habitat Monitoring and Management Plan publicly available in a manner approved by the CEO	Carry out the following: 1) Post document on proponents website; 2) Provide document to members of the public upon request; 3).Post document on the internal Corporate EMS Portal	Provision of link to the website	Construction		CLD	SBHMMP (incorporated into OOPCMP) available on the Water Corporation website: https://www.watercorporation.com.au/about-us/our-performance/ocean-outfall/alkimos-monitoring-program
755:M10-1	Fauna Management	Prior to ground-disturbing activity, the proponent shall prepare and submit a Fauna Management Plan	To that meet the requirements of Condition 10-2 as determined by the Minister for the Environment	Submission of the Fauna Management Plan	Pre-construction	Prior to ground-disturbing activity	CLD	



Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
755:M10-2	Fauna Management	Prepare a Fauna Management Plan	The Plan shall address: 1) Clearing of construction area in a step-wise fashion as plant expands; 2) Avoidance of land clearing when Carnaby Cockatoos are actively breeding or foraging in area; 3) Presence of terrestrial fauna and their translocation	The Fauna Management Plan	Pre-construction	Prior to ground-disturbing activity	CLD	
755:M10-3	Fauna Management	Proponent shall implement the Fauna Management Plan.		Compliance Report	Construction		CLD	Construction and FMP actions completed. Refer to first 5-year PRR submitted to OPEA on 10 July 2013 for evidence.
755:M10-4	Fauna Management	Proponent to make the Fauna Management Plan publicly available in a manner approved by the CEO	Carry out the following: 1) Post document on proponent's website; 2) Provide document to members of the public upon request; 3) Post document on the internal Corporate EMS Portal	Provision of link to the website	Construction		CLD	FMP available on the Water Corporation website: https://www.watercorporation.com.au/about-us/our-performance/ocean-outfall/alkimos-monitoring-program
755:M11-1	Marine Treated Wastewater Discharge Monitoring and Management Plan	Prior to commissioning of the wastewater treatment plant, the proponent shall prepare and submit a Marine Treated Wastewater Discharge Management Plan	To meet the objective and Environmental Quality Objectives described in 11-2 and the requirements set out in 11-3 as determined by the Minister for the Environment	Submission of Marine Treated Wastewater Discharge Management Plan	Operation	Prior to commissioning of wastewater treatment plant	CLD	Marine Treated Wastewater Discharge Monitoring and Management Plan (MTWDM&MP) was developed and approved on 28 July 2010. Available on the Water Corporation website: https://www.watercorporation.com.au/Our-water/Wastewater/Ocean-outfall/Alkimos-monitoring-program
755:M11-2	Marine Treated Wastewater Discharge Monitoring and Management Plan	Prepare a Marine Treated Wastewater Discharge Monitoring and Management Plan	Plan shall address following Environmental Quality Objectives	The Marine Treated Wastewater Discharge Management Plan	Operation		C	Approved MTWDM&MP meets the objectives of condition 11-2.
755:M11-3	Marine Treated Wastewater Discharge Monitoring and Management Plan	The proponent shall prepare a Marine Treated Wastewater Discharge Management Plan	Plan shall address: 1. within the Zone of Low Ecological Protection (i.e. within a 100 metres from the diffuser as shown in figure 1, schedule 2), the proponent shall seek to achieve the ANZECC & ARMCANZ1 80% species protection guideline 'trigger' levels (as published from time to time) for bio-accumulating toxicants; 2. within the Zone of High Ecological Protection (i.e. beyond a 100 metres from the diffuser as shown in figure 1, schedule 2), the proponent shall seek to achieve the ANZECC & ARMCANZ 99% species protection guideline 'trigger' levels (as published from time to time) for toxicants (with the exception of cobalt, where the 95% guideline shall apply); 3. the establishment of indicators and associated 'trigger' levels for further investigations (environmental quality guidelines) for nutrients and social quality objectives; 4. the establishment of 'trigger' levels for the implementation of remedial and/or preventative actions to protect the water quality and the environment off Alkimos (environmental quality standards) for toxicants, nutrients and social quality objectives; 5. the monitoring and evaluation, including remodelling, of the social and environmental effects of discharging treated wastewater into the marine environment off Alkimos to assess performance in the protection and maintenance of environmental values and objectives; 6. the specific management actions that will be implemented in the event that environmental quality standards levels are not met, including the option of modifying the diffuser to increase dilution; 7. a program to undertake whole-of-effluent toxicity testing of treated wastewater; 8. the monitoring and reporting of diffuser performance in terms of achieving required number of initial dilutions within the area of low level of ecosystem protection compared to the initial dilutions in schedule 1 under low energy/calm meteorological and sea-state conditions; and 9. the protocols and schedules for reporting performance against the Environmental Quality Objectives	The Marine Treated Wastewater Discharge Management Plan.	Operation		C	Approved MTWDM&MP meets the requirements of condition 11-3. Diffuser verification carried out in 2019-20 (ref Section 4.3) meets the requirements of condition 11.3-8.
755:M11-4	Marine Treated Wastewater Discharge Monitoring and Management Plan	Proponent shall implement the Marine Treated Wastewater Discharge Management Plan	As per Condition 11-3	Compliance Report	Operation		C	See section 4.1 and Appendix A of this PCR.



Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
755:M11-5	Marine Treated Wastewater Discharge Monitoring and Management Plan	Proponent shall make the Marine Treated Wastewater Discharge Management Plan publicly available in a manner approved by the CEO	Carry out the following: 1) Post document on proponents website; 2) Provide document to members of the public upon request; 3).Post document on the internal Corporate EMS Portal	Provision of link to the website	Construction		CLD	MTWDM&MP available on the Water Corporation website: https://www.watercorporation.com.au/Our-water/Wastewater/Ocean-outfall/Alkimos-monitoring-program
755:M11-6	Marine Treated Wastewater Discharge Monitoring and Management Plan	If a guideline trigger level referred to in condition 11-3 is exceeded, the proponent shall report the matter to DEC within one working day of determining that this has occurred, and shall initiate an investigation against the environmental quality standards and into the cause of the exceedance in accordance with the framework developed in the Revised Environmental Quality Criteria Reference Document (Cockburn Sound) 2	To the requirements of the Minister for the Environment on advice DEC	Written correspondence with DEC, copy of investigation report to be provided to DEC and Compliance Report	Operation	Within one working day of a trigger level being exceeded	C	No exceedances of guideline trigger levels referred to in condition 11-3. Refer to section 4.1 and Appendix A of this PCR.
755:M11-7	Marine Treated Wastewater Discharge Monitoring and Management Plan	If an environmental quality standard referred to in condition 11-3 is exceeded, the proponent shall initiate a management response to determine the source and remedy the exceedance in accordance with the implementation framework for the National Water Quality Management Strategy	To the requirements of the Minister for the Environment on advice of the Department of Environment and Conservation	Compliance Report	Operation	If an environmental quality standard referred to in Condition 11-3 is exceeded	C	No exceedances of guideline trigger levels referred to in condition 11-3. Refer to section 4.1 and Appendix A of this PCR.
755:M11-8	Marine Treated Wastewater Discharge Monitoring and Management Plan	The proponent shall prior to submitting a Works Approval application for the plant: 1. estimate the expected typical physico-chemical composition and flow rates of all wastewater streams discharging into the environment from the site; 2. estimate, for all non-negligible contaminants and nutrients, the total annual loads of contaminants and nutrients in the wastewater discharge exiting the site; 3. estimate, for normal and worst-case conditions, the concentrations of contaminants and nutrients (for agreed averaging periods) in the wastewater discharge exiting the site; and 4. Establish a reporting process that is an inventory of toxicants that enter and leave the plant		Compliance Report and DEC approval letters	Pre-construction		CLD	
755:M11-9	Marine Treated Wastewater Discharge Monitoring and Management Plan	The proponent shall prior to submitting a Works Approval application for the plant provide information to show how best practicable technology and waste minimisation principles for contaminants and nutrients have been adopted for the wastewater discharge		Compliance Report and DEC approval letters	Pre-construction		CLD	



Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
755:M11-10	Marine Treated Wastewater Discharge Monitoring and Management Plan	The proponent shall within, three months following commissioning and stabilizing of plant operations, conduct an analysis demonstrating that effluent properties are substantially consistent with predictions. Similar analyses shall also be conducted within three months following every major increase in the volume of treated wastewater discharged from the plant or any significant change in effluent characteristics		Compliance Report	Operation	Three months following commissioning, and three months after every major increase in wastewater discharge volume	C	No major increase in wastewater discharge volume or significant change in effluent characteristics during 2019-20.
755:M11-11	Marine Treated Wastewater Discharge Monitoring and Management Plan	The proponent shall develop a Contingency Wastewater Management Plan		Contingency Wastewater Management Plan	Construction		CLD	Appendix B of Marine Treated Wastewater Discharge Monitoring and Management Plan.
755:M11-12	Marine Treated Wastewater Discharge Monitoring and Management Plan	Action In the event that effluent properties are not substantially consistent with predictions (refer to condition 11-9), the proponent shall conduct toxicological studies on the actual effluent, or provide acceptable alternative information such as risk assessment, to the timing and other requirements of the Minister for the Environment	Studies and/or information shall be consistent with ANZECC requirements		Operation	If effluent properties are not substantially consistent with predictions (refer to condition 11-9)	C	No concerns with effluent properties during 2019-20
755:M11-13	Marine Treated Wastewater Discharge Monitoring and Management Plan	The proponent shall implement the Contingency Wastewater Management Plan required by condition 11-11 in the event that the findings resulting from condition 11-12 indicate that the effluent poses a significant risk to the diversity of the species and biological communities and abundance/biomass of marine life	As per condition 11-11	Compliance Report	Operation	If findings from Condition 11-12 indicate effluent poses significant risk to marine life	NR	
755:M11-14	Marine Treated Wastewater Discharge Monitoring and Management Plan	The proponent shall review and revise the Contingency Wastewater Management Plan		Compliance Report	Construction		NR	
755:M11-15	Marine Treated Wastewater Discharge Monitoring and Management Plan	The proponent shall make any revisions of the Contingency Wastewater Management Plan, as required by condition 11-11, publicly available in a manner approved by the CEO	Carry out the following: 1) Post document on proponents website; 2) Provide document to members of the public upon request; 3).Post document on the internal Corporate EMS Portal	Provision of link to the website	Construction		NR	
755:M12-1	Odour Management Plan	Prior to commencement of operation, the proponent shall prepare and submit an Odour Management Plan	Plan to meet the objective set out in Condition 12-2 and the requirement in Condition 12-3 as determined by the Minister for the Environment	Submission of the Odour Management Plan	Construction	Prior to commencement of operation	CLD	
755:M12-2	Odour Management Plan	Odour Management Plan	As per condition 12-3	Compliance Report	Construction		CLD	



Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
755:M12-3	Odour Management Plan	Action The proponent shall prepare an Odour Management Plan	The Plan shall address: 1) Initial dynamic olfactometry determination; 2) The biofilter acclimation period; 3) Procedures for the replacement of the biofilter media; 4) Regular checks of biofilter loading to ensure that the biofilter is balanced and to identify any short circuits (e.g. surface flow rate measurements and smoke tests); 5) Size of the stack; 6) Compliance with odour criteria and trigger mechanisms for remedial actions; 7) Regular qualitative determination of odour from facility; 8) Odour surveys every five years; 9) Contingency plans during upset or maintenance conditions; 10) Contingency plans in the event of exceedances; 11) Complaint registration, investigation and response	Compliance Report	Construction		CLD	
755:M12-4	Odour Management Plan	The proponent shall implement the Odour Management Plan	As per Condition 12-3	Compliance Report	Operation		C	No non-compliances identified in 2019-20.
755:M12-5	Odour Management Plan	The proponent shall make the Odour Management Plan publicly available in a manner approved by the CEO	Carry out the following: 1) Post document on proponents website; 2) Provide document to members of the public upon request; 3).Post document on the internal Corporate EMS Portal.		Construction		CLD	OMP available on the Water Corporation website: https://www.watercorporation.com.au/about-us/our-performance/ocean-outfall/alkimos-monitoring-program
755:M12-6	Odour Management Plan	The proponent shall operate the plant at all times to ensure odour at all adjacent odour sensitive premises meets criterion for odours set out in Condition 12-7		Compliance Report	Operation		C	The AWWTP was operated in accordance with the OMP, ensuring the criterion for odours as specified in condition 12-7 was met.
755:M12-7	Odour Management Plan	Odour Management Plan	The odour criterion referred to in Condition 12-6 shall be 5 odour units (OU) (based on the 99.9 percentile 1 hour averaging Australia Standard OU) or as specified by the CEO from time to time through amendment of the operating licence issued under Part V of the Environment Protection Act 1986	Compliance Report	Operation	As specified by the CEO from time to time	C	The AWWTP was operated in accordance with the OMP, ensuring the criterion for odours as specified in condition 12-7 was met.
755:M13.1	Decommissioning and Closure Plan	The Proponent shall at least two years prior to the anticipated date of decommissioning and closure, or at a time agreed by the Environmental Protection Authority, prepare and submit a Decommissioning and Closure Plan (the Plan) that meets the requirements of Condition 13-2 as determined by the Minister for the Environment		Submission of the Decommissioning and Closure Plan	Operation	At least two years prior to the anticipated date of decommissioning and closure, or at a time agreed by the EPA	NR	
755:M13.2	Decommissioning and Closure Plan	Prepare a Decommissioning and Closure Plan	Plan shall address: 1) Removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders; 2) Rehabilitation to a standard suitable for the agreed new land use(s); and 3) Identification of contaminated areas, including provision of evidence of notification and proposed management measures to the relevant statutory authorities	Decommissioning and Closure Plan and copies of letters to relevant authorities identifying any contaminated areas and management measures.	Operation		NR	
755:M13.3	Decommissioning and Closure Plan	The proponent shall implement the Plan until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponents decommissioning and closure responsibilities have been fulfilled		Compliance Report	Decommissioning	Until such time as the Minister for the Environment determines, on advice of the EPA, that the proponents decommissioning and closure responsibilities have been fulfilled	NR	
755:M13.4	Decommissioning and Closure Plan	The proponent shall make the Decommissioning and Closure Plan publicly available in a manner approved by the CEO	Carry out the following: 1) Post document on proponents website; 2) Provide document to members of the public upon request; 3).Post document on the internal Corporate EMS Portal.	Provision of link to the website	Decommissioning	Upon submission of the plan	NR	



APPENDIX A: MARINE MONITORING RESULTS – ASOOM ANNUAL COMPLIANCE REPORT (BMT, JUN 2020) – Nexus #101891530

Provided digitally in email along with this PCR and cover letter



APPENDIX B: EVIDENCE OF 2018/19 PCR SUBMISSION – Nexus ID#80841219

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Your Ref: MS755
Our Ref: Nexus #80797028
Enquiries: Heather Fergusson
Telephone: (08) 9371 4058

26 September 2019

Ian Munro – Manager Compliance – EP Services
Department of Water and Environmental Regulation
Locked Bag 10
JOONDALUP DC
WA 6850

Attention: Cameron Hanush

Alkimos Waste Water Treatment Plant - Ministerial Statement 755: Performance and Compliance report for period July 2018 to June 2019

The Alkimos Waste Water Treatment plant is subject to conditions in Ministerial Statement 755 under the Environmental Protection Act 1986.

Condition 4-1 of MS 755 describes the requirements for compliance reporting:

4-1 The proponent shall submit to the CEO environmental compliance reports annually, reporting on the previous twelve-month period, unless required by the CEO to report more frequently.

This Performance and Compliance Report (PCR) fulfils the requirements of MS 755 condition 4 and covers the period July 2018 to June 2019 (2018-19).

MS755 was implemented in accordance with all commitments and conditions in 2018-19.

If you require any further information please contact Heather Fergusson on 9371 4058 or heather.fergusson@watercorporation.com.au

Yours sincerely

Dr Digby Short
Manager - Environment



APPENDIX C: EVIDENCE OF 5-YEARLY PRR SUBMISSION – Nexus ID#49150102

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Your Ref: MS755
Our Ref: JT1 2008 00130 V01
Enquiries: Danielle Berry
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10 April 2018

Ian Munro - Manager: Ministerial Statement Section
Department of Water and Environmental Regulation
Locked Bag 33
CLOISTERS SQUARE
WA 6850

Attention: Kevin Da Silva

MINISTERIAL STATEMENT 755: ALKIMOS WASTEWATER TREATMENT PLANT – PERFORMANCE REVIEW REPORT 2012/13 – 2016/17

The Alkimos Wastewater Treatment Plant – Site B – City of Wanneroo is subject to conditions in Ministerial Statement 755 of 12 November 2007 under the *Environmental Protection Act 1986*.

Condition 5-1 requires Water Corporation to "...submit a Performance Review Report every five years after the start of construction to the Environmental Protection Authority ...". This 2012/13 - 2016/17 Performance Review Report is submitted to the Department of Water and Environmental Regulation accordingly.

Should you have any questions please contact Danielle Berry on 9371 4058 or by email at danielle.berry@watercorporation.com.au

Yours sincerely

Dr Digby Short
Manager Governance, Assurance and Approvals

Attachments: - Hard-copy of the Performance Review Report 2012/13 – 16/17
- CD-ROM containing the PRR and appendices