Western Cape Government

Department of Environmental Affairs and Development Planning
**Rondine Isaacs**
Directorate: Development Management, Region 1
Rondine.Isaacs@westerncape.gov.za | Tel: 021 483 4098

**REFERENCE:** 16/3/3/2/A7/4/3047/21
**NEAS REFERENCE:** WCP/EIA/0000976/2021
**DATE OF ISSUE:** 01 August 2022

The Board of Directors
V&A Waterfront Holdings (Pty) Ltd.
P.O. Box 5001
V&A Waterfront
**CAPE TOWN**
8002

**Attention: Mr. Mark Noble**

E-mail: mnoble@waterfront.co.za

Dear Sir

**APPLICATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) ("NEMA") AND THE ENVIRONMENTAL IMPACT ASSESSMENT ("EIA") REGULATIONS, 2014 (AS AMENDED): PROPOSED DEVELOPMENT OF A DISTRICT SEAWATER COOLING SYSTEM FOR THE EAST PIER PRECINCT ON ERVEN 176352 AND 173713, V&A WATERFRONT, CAPE TOWN.**

1. With reference to the above application, the competent authority hereby notifies you of its decision to **grant** Environmental Authorisation, attached herewith, together with the reasons for the decision.

2. In terms of Regulation 4 of the EIA Regulations, 2014 (as amended), you are instructed to ensure, within 14 days of the date of the Environmental Authorisation, that all registered interested and affected parties are provided with access to and reasons for the decision, and that all registered interested and affected parties are notified of their right to appeal.

3. Your attention is drawn to Chapter 2 of the Appeal Regulations, 2014 (as amended), which prescribes the procedure to be followed in the event of appeals being lodged. This procedure is summarised in the attached Environmental Authorisation.

Yours faithfully

Zaahir Toefy

Digitally signed by Zaahir Toefy
Date: 2022.08.01 09:28:24 +02'00'

**MR. ZAAHIR TOEFY**
**DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 1)**
**DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING**

CC: (1) Mr. Nick Steytler (KHULA Environmental Consultants) E-mail: nick@khulaec.co.za
(2) Ms. Maurietta Stewart (City of Cape Town) E-mail: maurietta.stewart@capetown.gov.za

Western Cape Government

Department of Environmental Affairs and Development Planning
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Directorate: Development Management, Region 1
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# ENVIRONMENTAL AUTHORISATION

**APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) ("NEMA") AND THE ENVIRONMENTAL IMPACT ASSESSMENT ("EIA") REGULATIONS, 2014 (AS AMENDED): PROPOSED DEVELOPMENT OF A DISTRICT SEAWATER COOLING SYSTEM FOR THE EAST PIER PRECINCT ON ERVEN 176352 AND 173713, V&A WATERFRONT, CAPE TOWN.**

With reference to your application for the abovementioned, find below the outcome with respect to this application.

## DECISION

By virtue of the powers conferred on it by the NEMA and the EIA Regulations, 2014 (as amended), the competent authority herewith grants Environmental Authorisation to the applicant to undertake the list of activities specified in Section B below with respect to the preferred alternative as included in the EIA Report dated April 2022.

The granting of this Environmental Authorisation (hereinafter referred to as the "Environmental Authorisation") is subject to compliance with the conditions set out in Section E below.

## A. DETAILS OF THE HOLDER OF THIS ENVIRONMENTAL AUTHORISATION

V&A Waterfront Holdings (Pty) Ltd.
c/o Mr. Mark Noble
P.O. Box 5001
V&A Waterfront
**CAPE TOWN**
8002

Tel.: (021) 408 7651
Fax: (086) 677 7367
E-mail: mnoble@waterfront.co.za

The abovementioned applicant is the holder of this Environmental Authorisation and is hereinafter referred to as "the holder".

## B. LIST OF ACTIVITIES AUTHORISED

| Listed Activity | Activity/Project Description |
|---|---|
| **Listing Notice 2 of the EIA Regulations, 2014 (as amended):**<br><br>**Activity 6:**<br>"*The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding -*<br>*(i) activities which are identified and included in Listing Notice 1 of 2014;*<br>*(ii) activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies;*<br>*(iii) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2 000 cubic metres or less; or*<br>*(iv) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day*". | The proposed district seawater cooling system requires a Coastal Discharge Permit in terms of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008). |

The abovementioned list is hereinafter referred to as "the listed activity".

The holder is herein authorised to undertake the following related to the listed activity:

The proposal entails the development of a district seawater cooling system for the East Pier Precinct on Erven 176352 and 173713, V&A Waterfront, Cape Town.

The seawater district cooling system will be installed for the cooling of the V&A retail mall, East Pier Precinct buildings and the Table Bay Hotel. The plant will also provide condenser water for the chillers in these areas. The seawater cooling plant will provide 54% (6400kW) of the total cooling required and the additional 46% (5500kW) will be provided by existing chillers. The proposed system will have a capacity of approximately 21 000kW. The remaining 14 600kW of the system will be for heat rejection of the existing chillers installed in the V&A retail mall, East Pier Precinct buildings and Table Bay Hotel. The total (peak) flow rate of the proposed system will be 862ℓ/s (with potential losses, fouling and expansion). The proposed seawater cooling system will discharge, at maximum, 958ℓ/s with a maximum temperature difference of 7-10°C above the intake water.

The proposed cooling system will comprise of the following three components:

Intake:
The intake pipework will be fixed along the East Pier wall and will lead to the plant room located in the parking garage beneath the to-be upgraded helipad situated on Erf No. 176352. The intake will be beneath the water surface and approximately 1m above the seabed to prevent contaminated sediment entrainment and the possibility of abstracting surface oil or fuel spills into the system. The system will also contain two sets of filters and an auto backwash cycle is run that discharges back into the intake basin, but sufficiently away from the intake location.

Cooling plant:
The cooling plant will be located in the parking garage beneath the to-be upgraded helipad on Erf No. 176352. The plant will comprise of the following:

- 10 X heat exchangers (20 944kW heat exchange capacity);
- 10 X sea water pumps (total flow rate capacity: 958ℓ/s);
- 10 X pre-cooling/heat/condenser water pumps (total flow rate capacity: 862ℓ/s); and
- 10 X inlet screens (cleaned manually).

Discharge:
The outfall will consist of six HDPE pipes discharging 3m above the mean sea level onto the dolosse along the northern seaward edge of the breakwater. The pipes will be spaced at 5m centre to centre distance on the Breakwater Harbour wall. The pipes will penetrate the upper mass concrete surface of the harbour wall and discharge on the seaward edge behind the dolosse.

Biocide dosing:
Daily sodium hypochlorite dosing will be required at the intake to prevent marine fouling of the seawater intake systems and heat exchangers. A 12.5% commercially available sodium hypochlorite solution will be used, diluted on-site to a 3% solution prior to application to allow the solution to be more stable and to reduce the gas producing nature of the solution. Each of the ten intake systems will be dosed sequentially with 1.5ℓ of solution in the suction lines, just after the intake basket, with 40-minute intervals between the dousing of each system. Whilst dosing the intake, the seawater extraction pump will be switched off for a short period of time to allow the chemical dose to make contact with the intake system. Thereafter, the resultant mixture of sodium hypochlorite will be flushed through the cooling system and out into Table Bay via the discharge on the northern side of the Breakwater. The dosing system will be designed to be interlocked with the operation of the pump. If the pump is not operational, the dosing will not operate. The dosing is also controlled by a dosing pump which can only dose a pre-set quantity into the intake.

A normally closed valve will be used for the dosing feed from the dosing pump to the dosing points which opens on receiving a signal from a controller. In addition, a Building Management System ("BMS") will be installed to ensure that only operational intakes are dosed. This will negate the possibility of water quality impacts arising due to operational failure. The BMS will have control points within which the plant will operate. Should the plant operate outside of these parameters, an alarm will alert maintenance staff, who will respond to the problem. If the faults are critical, the plant will shut down immediately upon receiving the alarm.

## C. LOCATION AND SITE DESCRIPTION

The listed activity will be undertaken on Erven 176352 and 173713, V&A Waterfront, Cape Town.

The site is mostly surrounded by sea and harbour-related infrastructure with the breakwater being located immediately north of the site. Erf No. 176352 is located behind (south) of the breakwater that comprises mostly of a helicopter airfield ("helipad") with seven landing pads for helicopters. Backing onto the helipad to the west is a row of single storey buildings utilised as offices by the helicopter tour operators. Further back, on the far side of East Pier Road is East Pier Shed. The entrance to the Victoria Basin and the port of Cape Town are situated several hundred metres to the southeast of the site.

Immediately to the north of the helicopter airfield, and partly located on Erf No. 176352, is an only building, the newly constructed Waste Management Facility of the V&A Waterfront.

The intake pipework will be located on the sidewall of the east pier and as such, affects Erf No. 173713.

The SG 21-digit codes are:

| **Erf number** | **SG 21 digit code** |
|---|---|
| 176352 | C01600000017635200 000 |
| 173713 | C01600000017371300 000 |

Co-ordinates:
Latitude: 33° 54' 2.851" S
Longitude: 18° 25' 37.264" E

Refer to Annexure 1: Locality Plan and Annexure 2: Site Plan.

hereinafter referred to as "the site".

## D. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

KHULA Environmental Consultants
c/o Mr. Nick Steytler
P.O. Box 22761
**SCARBOROUGH**
7975

Tel.: (021) 783 4565
Fax: (086) 694 6901
E-mail: nick@khulaec.co.za

## E. CONDITIONS OF AUTHORISATION

### Scope of authorisation

1. The holder is authorised to undertake the listed activity specified in Section B above in accordance with and restricted to the preferred alternative, described in the EIA Report dated April 2022 on the site as described in Section C above.

2. Authorisation of the activity is subject to compliance with the conditions set out in this Environmental Authorisation. The holder must ensure compliance with the conditions by any person acting on his/her behalf, including an agent, sub-contractor, employee or any person rendering a service to the holder.

3. The holder must commence with, and conclude, the listed activity within the stipulated validity period which this Environmental Authorisation is granted for, or this Environmental Authorisation shall lapse and a new application for Environmental Authorisation must be submitted to the competent authority.

   This Environmental Authorisation is granted for–
   (a) A period of five (**5**) years, from the date of issue, during which period the holder must commence with the authorised listed activity; and

   (b) A period of ten (**10**) years, from the date the holder commenced with an authorised listed activity, during which period the authorised listed activity for the construction phase, must be concluded.

4. The activity that has been authorised may only be carried out at the site described in Section C above in terms of the approved EMPr.

5. Any changes to, or deviations from the scope of the description set out in Section B and Condition 2 above must be accepted or approved, in writing, by the competent authority before such changes or deviations may be implemented. In assessing whether to grant such acceptance/approval or not, the competent authority may request such information to evaluate the significance and impacts of such changes or deviations, and it may be necessary for the holder to apply for further authorisation in terms of the applicable legislation.

### Notification of authorisation and right to appeal

6. The holder of the authorisation must in writing, within 14 (fourteen) calendar days of the date of this decision –

   6.1 notify all registered interested and affected parties ("I&APs") of –
   6.1.1 the outcome of the application;
   6.1.2 the reasons for the decision;
   6.1.3 the date of the decision; and
   6.1.4 the date of issue of the decision;

   6.2 draw the attention of all registered I&APs to the fact that an appeal may be lodged against the decision in terms of the National Appeal Regulations, 2014 (as amended);

6.3 draw the attention of all registered I&APs to the manner in which they may access the decision; and

6.4 provide the registered I&APs with:
6.4.1 the name of the holder (entity) of this Environmental Authorisation,
6.4.2 name of the responsible person for this Environmental Authorisation,
6.4.3 postal address of the holder,
6.4.4 telephonic and fax details of the holder,
6.4.5 e-mail address, if any;
6.4.6 the contact details (postal and/or physical address, contact number, facsimile and e-mail address) of the decision-maker and all registered I&APs in the event that an appeal is lodged in terms of the National Appeal Regulations, 2014 (as amended).

**Commencement**

7. The listed activity, including site preparation, must not commence within 20 (twenty) calendar days from the date the applicant notified the registered I&APs of this decision.

8. In the event that an appeal is lodged with the Appeal Administrator, the effect of this Environmental Authorisation is suspended until such time as the appeal is decided. In the instance where an appeal is lodged the holder may not commence with the activity, including site preparation, until such time as the appeal has been finalised and the holder is authorised to do so.

**Written notice to the competent authority**

9. A minimum of 7 (seven) calendar days' notice, in writing, must be given to the competent authority before commencement of construction activities. Commencement for the purpose of this condition includes site preparation.
9.1 The notice must make clear reference to the site details and EIA Reference number given above.
9.2 The notice must also include proof of compliance with the following conditions described herein:
Conditions: 6, 7, 11 and 15.

**Management of activity**

10. The draft Environmental Management Programme ("EMPr") dated April 2022 (as compiled by KHULA Environmental Consultants) and submitted as part of the application for Environmental Authorisation must be amended to include the following recommendations provided in the Marine Specialist Study and Dispersion Modelling Impact Assessment Report dated 2022 and compiled by Amy Wright, Kenneth Hutchings and Dr Barry Clark of Anchor Environmental.
10.1 Discharged effluent must comply with that modelled in the Marine Specialist Study and Dispersion Modelling Impact Assessment Report *i.e.*, a maximum effluent temperature of 28°C.
10.2 Intake velocities must be kept below 0.15m/s to ensure that fish and other mobile organisms can escape the intake current.
10.3 Intake pipes must be designed to ensure suction occurs horizontally, rather than vertically, to allow pelagic organisms to escape through the use of a

footer plate below the intake pipe end and a header plate (*i.e.*, velocity cap), or with the use of a t-pipe.

10.4 Intake structures must be positioned away from sensitive environments or areas with high species diversity or abundance and may not draw in water from the upper meter of the water column.

10.5 Monitoring of temperature delta (*i.e.*, increase above ambient) must be undertaken both at the diffuser (pipe-end) and at the edge of the Recommended Mixing Zone.

10.6 Strong acidic and alkaline solutions must be neutralised prior to discharge.

10.7 Aeration of the effluent prior to discharge is required should sodium metabisulfite be used to neutralise the effluent water.

10.8 A water quality monitoring programme must be implemented to validate the predictions of the hydrodynamic modelling study and monitor constituents of the effluent (specifically temperature) to ensure compliance with published Water Quality Guidelines.

10.9 Environmental monitoring must be conducted in the vicinity of the outfall, to detect changes in rocky subtidal community structure and rock lobster abundance/population dynamics in the vicinity of the outfall.

10.10 Monitoring of end of pipe concentrations must be conducted and dosing levels must be adjusted if adverse effects are detected by the monitoring program.

10.11 Mobile equipment, vehicles and power generating equipment must be subject to noise tests which are measured against manufacturer specifications to confirm compliance before deployment on site.

10.12 Noise emissions from mobile and fixed equipment must be subject to periodic checks as part of regular maintenance programmes to allow for detection of any unacceptable increases in noise.

10.13 Monitoring of dissolved oxygen must take place at the edge of the Recommended Mixing Zone.

10.14 Discharged effluent must comply with that modelled in the Marine Specialist Study and Dispersion Modelling Impact Assessment Report *i.e.*, a maximum of 0.25mg/l at pipe end.

10.15 Construction equipment must be kept within the development footprint, and may not disturb sediment outside of this area.

10.16 Disturbed areas must be rehabilitated immediately after construction by removing all artificial materials not related to the permanent fixture of the pipeline.

10.17 All staff must be informed about sensitive marine habitats.

11. The updated EMPr must be submitted to the competent authority for approval before the commencement of construction activities.

12. An application for amendment to the EMPr must be submitted to the competent authority in terms of Chapter 5 of the EIA Regulations, 2014 (as amended) if any amendments are to be made to the outcomes of the EMPr, and these may only be implemented once the amended EMPr has been authorised by the competent authority.

13. The EMPr must be included in all contract documentation for all phases of implementation.

14. A copy of the Environmental Authorisation and the EMPr must be kept at the site where the listed activity will be undertaken. Access to the site referred to in Section

C above must be granted and, the Environmental Authorisation and EMPr must be produced to any authorised official representing the competent authority who requests to see it for the purposes of assessing and/or monitoring compliance with the conditions contained herein. The Environmental Authorisation and EMPr must also be made available for inspection by any employee or agent of the applicant who works or undertakes work at the site.

**Monitoring**

15. The holder must appoint a suitably experienced Environment Control Officer ("ECO"), for the duration of the construction phase to ensure compliance with the provisions of the EMPr and the conditions contained in this Environmental Authorisation.

    The ECO must–
    15.1 be appointed prior to commencement of any construction activities commencing;
    15.2 ensure compliance with the EMPr and the conditions contained herein;
    15.3 keep record of all activities on site; problems identified; transgressions noted, and a task schedule of tasks undertaken by the ECO;
    15.4 remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed;
    15.5 provide the competent authority with copies of the ECO reports within 30 days of the project being finalised; and
    15.6 conduct weekly site inspections during the construction phase.

**Environmental audit reports**

16. The holder must, for the period during which the Environmental Authorisation and EMPr remain valid -
    16.1 ensure that the compliance with the conditions of the Environmental Authorisation and the EMPr is audited;
    16.2 submit an environmental audit report four (4) months after commencement of the construction phase to the relevant competent authority;
    16.3 submit an environmental audit report six (6) months after completion of the construction phase to the relevant competent authority; and
    16.4 submit an environmental audit report every five (5) years while the Environmental Authorisation remains valid.

17. The environmental audit reports must be prepared by an independent person with expertise and must address the objectives and contain all the information set out in Appendix 7 of the EIA Regulations, 2014 (as amended).

    In addition to the above, the environmental audit report, must -
    17.1 provide verifiable findings, in a structured and systematic manner, on–
        (a) the level of compliance with the conditions of the Environmental Authorisation and the EMPr and whether this is sufficient or not; and
        (b) the extent to which the avoidance, management and mitigation measures provided for in the EMPr achieve the objectives and outcomes of the EMPr and highlight whether this is sufficient or not;
    17.2 identify and assess any new impacts and risks as a result of undertaking the activity;
    17.3 evaluate the effectiveness of the EMPr;

17.4 identify shortcomings in the EMPr;
17.5 identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr;
17.6 indicate the date on which the construction work was commenced with and completed or in the case where the development is incomplete, the progress of the development and rehabilitation;
17.7 include a photographic record of the site applicable to the audit; and
17.8 be informed by the ECO reports.

18. The holder must, within 7 days of the submission of the environmental audit report to the competent authority, notify all potential and registered I&APs of the submission and make the report available to anyone on request and, where the holder has such a facility, be placed on a publicly accessible website.

**Specific conditions**

19. Surface or ground water must not be polluted due to any actions on the site. The applicable requirements with respect to relevant legislation pertaining to water must be met.

20. An integrated waste management approach, which is based on waste minimisation and incorporates reduction, recycling, re-use and disposal, where appropriate, must be employed. Any solid waste must be disposed of at a waste disposal facility licensed in terms of the applicable legislation.

    20.1 Staff must be regularly informed about the detrimental impacts of pollution on aquatic species and suitable handling and disposal protocols must be clearly explained and sign-boarded.

21. Should any heritage remains be exposed during excavations or any actions on the site, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape (in accordance with the applicable legislation). Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from Heritage Western Cape. Heritage remains include archaeological remains (including fossil bones and fossil shells); coins; indigenous and/or colonial ceramics; any articles of value or antiquity; marine shell heaps; stone artifacts and bone remains; structures and other built features; rock art and rock engravings; shipwrecks; and graves or unmarked human burials.

    A qualified archaeologist must be contracted where necessary (at the expense of the applicant and in consultation with the relevant authority) to remove any human remains in accordance with the requirements of the relevant authority.

## F. General matters

1. Notwithstanding this Environmental Authorisation, the holder must comply with any other statutory requirements that may be applicable when undertaking the listed activity.

2. If the holder does not commence with the listed activity within the period referred to in Condition 3, this Environmental Authorisation shall lapse for the activity, and a new application for Environmental Authorisation must be submitted to the competent authority. If the holder wishes to extend the validity period of the Environmental Authorisation, an application for amendment in this regard must be made to the competent authority prior to the expiry date of the Environmental Authorisation.

3. The holder must submit an application for amendment of the Environmental Authorisation to the competent authority where any detail with respect to the Environmental Authorisation must be amended, added, substituted, corrected, removed or updated. If a new holder is proposed, an application for amendment in terms of Part 1 of the EIA Regulations, 2014 (as amended) must be submitted.

   Please note that an amendment is not required if there is a change in the contact details of the holder. In this case, the competent authority must only be notified of such changes.

4. The manner and frequency for updating the EMPr is as follows:
   Amendments to the EMPr, other than those mentioned above, must be done in accordance with Regulations 35 to 37 of the EIA Regulations,2014 (as amended) or any relevant legislation that may be applicable at the time.

5. Non-compliance with a condition of this Environmental Authorisation or EMPr may render the holder liable to criminal prosecution.

## G. APPEALS

Appeals must comply with the provisions contained in the National Appeal Regulations, 2014 (as amended).

1. An appellant (if the holder of the decision) must, within 20 (twenty) calendar days from the date notification of the decision was sent to the holder by the competent authority -

   1.1 Submit an appeal in accordance with Regulation 4 of the National Appeal Regulations, 2014 (as amended) to the Appeal Administrator; and
   1.2 Submit a copy of the appeal to any registered I&APs, any Organ of State with interest in the matter and the decision-maker *i.e.*, the competent authority that issued the decision.

2. An appellant (if NOT the holder of the decision) must, within 20 (twenty) calendar days from the date the holder of the decision sent notification of the decision to the registered I&APs -

2.1 Submit an appeal in accordance with Regulation 4 of the National Appeal Regulations, 2014 (as amended) to the Appeal Administrator; and

2.2 Submit a copy of the appeal to the holder of the decision, any registered I&AP, any Organ of State with interest in the matter and the decision-maker *i.e.*, the competent authority that issued the decision.

3. The holder of the decision (if not the appellant), the decision-maker that issued the decision, the registered I&AP and the Organ of State must submit their responding statements, if any, to the appeal authority and the appellant within 20 (twenty) calendar days from the date of receipt of the appeal submission.

4. The appeal and the responding statement must be submitted to the address listed below:

By post: Attention: Mr. Marius Venter
Western Cape Ministry of Local Government, Environmental Affairs and Development Planning
Private Bag X9186
CAPE TOWN
8000

By facsimile: (021) 483 4174; or

By hand: Attention: Mr. Marius Venter (Tel: 021 483 3721)
Room 809
8th Floor Utilitas Building, 1 Dorp Street, Cape Town, 8001

**Note:** For purposes of electronic database management, you are also requested to submit electronic copies (Microsoft Word format) of the appeal, responding statement and any supporting documents to the Appeal Authority to the address listed above and/ or via e-mail to DEADP.Appeals@westerncape.gov.za.

5. A prescribed appeal form as well as assistance regarding the appeal processes is obtainable from Appeal Authority at: Tel. (021) 483 3721, E-mail DEADP.Appeals@westerncape.gov.za or URL http://www.westerncape.gov.za/eadp.

## H. DISCLAIMER

The Western Cape Government, the Local Authority, committees or any other public authority or organisation appointed in terms of the conditions of this environmental authorisation shall not be responsible for any damages or losses suffered by the holder, developer or his/her successor in any instance where construction or operation subsequent to construction is temporarily or permanently stopped for reasons of non-compliance with the conditions as set out herein or any other subsequent document or legal action emanating from this decision.

Your interest in the future of our environment is appreciated.

Yours faithfully

Zaahir Toefy

Digitally signed by Zaahir Toefy
Date: 2022.08.01 09:31:35 +02'00'

**MR. ZAAHIR TOEFY**
**DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 1)**
**DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING**

**DATE OF DECISION: 01 AUGUST 2022**

CC: (1) Mr. Nick Steytler (KHULA Environmental Consultants) E-mail: nick@khulaec.co.za
(2) Ms. Maurietta Stewart (City of Cape Town) E-mail: maurietta.stewart@capetown.gov.za

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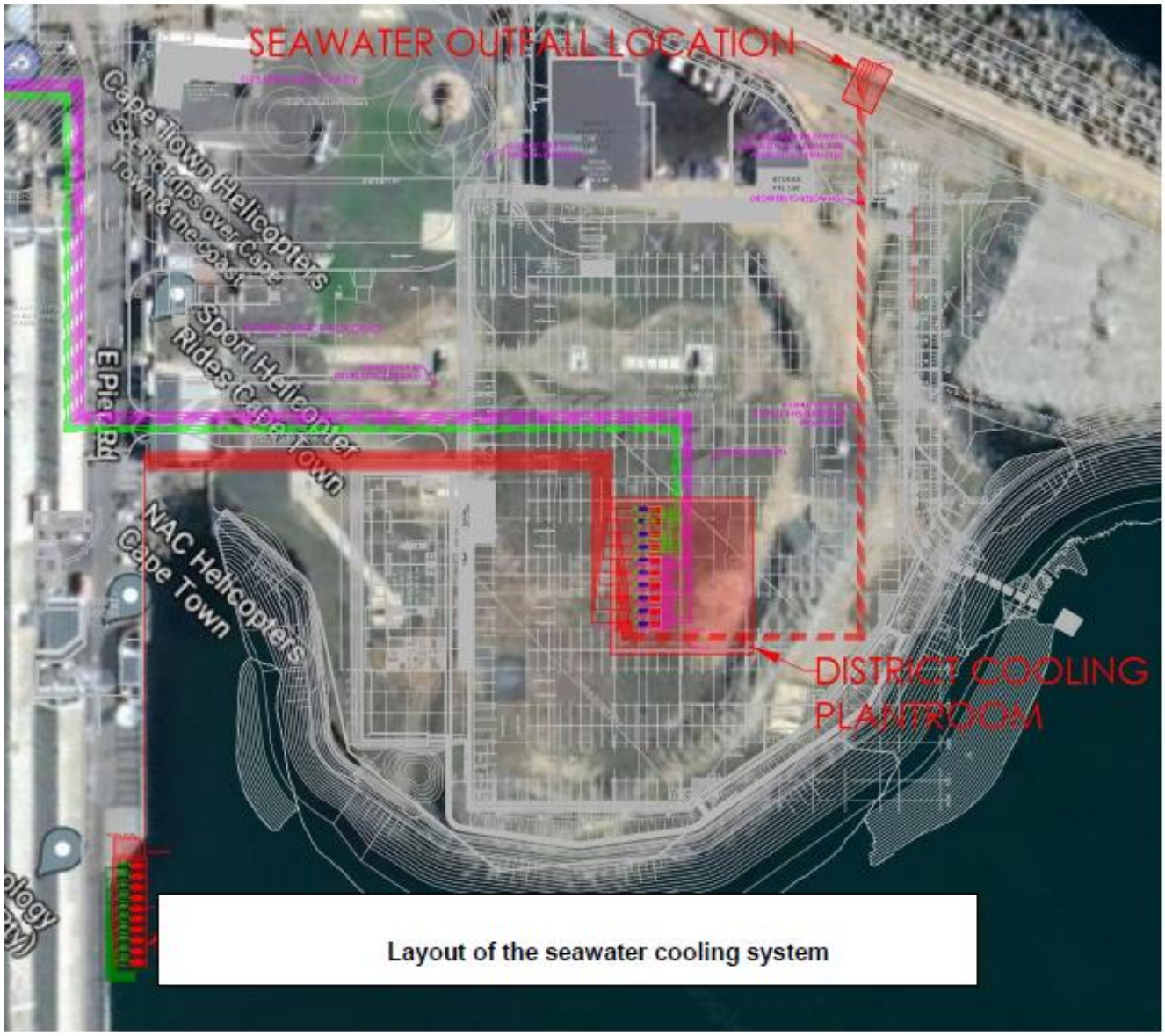
**FOR OFFICIAL USE ONLY:**

**EIA REFERENCE NUMBER: 16/3/3/2/A7/4/3047/21**
**NEAS EIA REFERENCE NUMBER: WCP/EIA/0000976/2021**

## ANNEXURE 1: LOCALITY PLAN


## ANNEXURE 2: SITE PLAN



**ANNEXURE 3: REASONS FOR THE DECISION**

In reaching its decision, the competent authority, *inter alia,* considered the following:

a) The information contained in the application form received by the competent authority via electronic mail correspondence on 20 September 2021; the final Scoping Report received by the competent authority via electronic mail correspondence on 28 October 2021; the final EIA Report dated April 2022, as received by the competent authority via electronic mail correspondence on 12 April 2022; and the EMPr submitted together with the final EIA Report;

b) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the NEMA;

c) The comments received from I&APs and the responses provided thereon, as included in the final EIA Report dated April 2022; and

d) No site visits were conducted. The competent authority had sufficient information before it to make an informed decision without conducting a site visit.

All information presented to the competent authority was taken into account in the consideration of the application for environmental authorisation. A summary of the issues which, according to the competent authority, were the most significant reasons for the decision is set out below.

**1. Public Participation**

The Public Participation Process comprised of the following:

- E-mails were sent on 23 September 2021 to occupiers of the site, relevant Residents and Rate Payers Associations, the ward councillor, local municipality and relevant State Departments/organs of state;
- A notice was placed on site on 23 September 2021;
- An advertisement was placed in the "*Cape Times*" newspaper on 23 September 2021;
- An electronic copy of the draft Scoping Report was placed on the EAPs website on 23 September 2021;
- The draft Scoping Report was made available via a WeTransfer link and a copy of the Executive Summary was sent to I&APs via e-mail on 23 September 2021;
- The draft Scoping Report was made available from 23 September 2021 until 25 October 2021;
- E-mails were sent on 10 February 2022 to announce the availability of the draft EIA Report;
- The Executive Summary of the draft EIA Report was circulated via e-mail on 10 February 2022;
- The draft EIA Report was made available from 10 February 2022 until 14 March 2022; and
- The Comments and Responses Report on the final EIA Report was circulated to registered I&APs via e-mail on 05 April 2022.

**Authorities consulted**

The authorities consulted included the following:

- Department of Environmental Affairs and Development Planning Directorate: Pollution & Chemicals Management;
- City of Cape Town;
- Heritage Western Cape;
- Department of Forestry, Fisheries and the Environment: Oceans and Coasts Branch; and
- Transnet.

The competent authority is satisfied that the Public Participation Process that was followed met the minimum legal requirements. All the comments and responses that were raised were responded to and included in the EIA Report.

**2. Alternatives**

The proposed seawater cooling plant only discharges thermally elevated seawater which can be discharged at a position nearer to the plant room.

An alternative discharge method entails combining the discharge of the seawater cooling system with that of the approved, but yet-to-be constructed, reverse osmosis desalination plant. Since the desalination plant discharges brine, the discharge position must be located further along the breakwater. This alternative was discarded as the proposed brine discharge point will be located near the end of the breakwater, a considerable distance further along the breakwater compared to the proposed location of the discharge point of the seawater cooling plant.

Preferred layout alternative – herewith authorised:

The preferred alternative entails the development of a district seawater cooling system for the East Pier Precinct on Erven 176352 and 173713, V&A Waterfront, Cape Town.

The seawater district cooling system will be installed for the cooling of the V&A retail mall, East Pier Precinct buildings and the Table Bay Hotel. The plant will also provide condenser water for the chillers in these areas. The seawater cooling plant will provide 54% (6400kW) of the total cooling required and the additional 46% (5500kW) will be provided by existing chillers. The proposed system will have a capacity of approximately 21 000kW. The remaining 14 600kW of the system will be for heat rejection of the existing chillers installed in the V&A retail mall, East Pier Precinct buildings and Table Bay Hotel. The total (peak) flow rate of the proposed system will be 862ℓ/s (with potential losses, fouling and expansion). The proposed seawater cooling system will discharge, at maximum, 958ℓ/s with a maximum temperature difference of 7-10°C above the intake water.

The proposed cooling system will comprise of the following three components:

Intake:

The intake pipework will be fixed along the East Pier wall and will lead to the plant room located in the parking garage beneath the to-be upgraded helipad situated on Erf No. 176352. The intake will be beneath the water surface and approximately 1m above the seabed to prevent contaminated sediment entrainment and the possibility of abstracting surface oil or fuel spills into the system. The system will also contain two sets of filters and an auto backwash cycle is run that discharges back into the intake basin, but sufficiently away from the intake location.

Cooling plant:

The cooling plant will be located in the parking garage beneath the to-be upgraded helipad on Erf No. 176352. The plant will comprise of the following:

- 10 X heat exchangers (20 944kW heat exchange capacity);
- 10 X sea water pumps (total flow rate capacity: 958ℓ/s);
- 10 X pre-cooling/heat/condenser water pumps (total flow rate capacity: 862ℓ/s); and
- 10 X inlet screens (cleaned manually).

Discharge:

The outfall will consist of six HDPE pipes discharging 3m above the mean sea level onto the dolosse along the northern seaward edge of the breakwater. The pipes will be spaced at 5m

centre to centre distance on the Breakwater Harbour wall. The pipes will penetrate the upper mass concrete surface of the harbour wall and discharge on the seaward edge behind the dolosse.

Biocide dosing:
Daily sodium hypochlorite dosing will be required at the intake to prevent marine fouling of the seawater intake systems and heat exchangers. A 12.5% commercially available sodium hypochlorite solution will be used, diluted on-site to a 3% solution prior to application to allow the solution to be more stable and to reduce the gas producing nature of the solution. Each of the ten intake systems will be dosed sequentially with 1.5ℓ of solution in the suction lines, just after the intake basket, with 40-minute intervals between the dousing of each system. Whilst dosing the intake, the seawater extraction pump will be switched off for a short period of time to allow the chemical dose to make contact with the intake system. Thereafter, the resultant mixture of sodium hypochlorite will be flushed through the cooling system and out into Table Bay via the discharge on the northern side of the Breakwater. The dosing system will be designed to be interlocked with the operation of the pump. If the pump is not operational, the dosing will not operate. The dosing is also controlled by a dosing pump which can only dose a pre-set quantity into the intake.

A normally closed valve will be used for the dosing feed from the dosing pump to the dosing points which opens on receiving a signal from a controller. In addition, a Building Management System ("BMS") will be installed to ensure that only operational intakes are dosed. This will negate the possibility of water quality impacts arising due to operational failure. The BMS will have control points within which the plant will operate. Should the plant operate outside of these parameters, an alarm will alert maintenance staff, who will respond to the problem. If the faults are critical, the plant will shut down immediately upon receiving the alarm.

"No-Go" Alternative:
This alternative entails maintaining the *status quo* and as such, the district seawater cooling system for the East Pier Precinct will not be developed. As such, conventional, electrically powered air conditioning will be installed in the East Pier Precinct, which will be used in the buildings in the Victoria Wharf Mall and the Table Bay Hotel. This alternative was not deemed as preferred as the installation of a centralised cooling plant will increase efficiencies and lower maintenance costs. Furthermore, the cooling from sea water and the use thereof for air conditioning reduces water consumption and water treatment costs linked to large air conditioning plants. The installation of conventional, electrically powered air conditioning is associated with a greater operating cost to the holder, resulting in lower returns from rental of the office, retail and hospitality spaces. The "no-go" alternative is therefore not warranted.

## 3. Impacts, assessment and mitigation measures

3.1 Activity Need and Desirability

New developments are planned within the East Pier Precinct in the V&A Waterfront. A feasibility study was undertaken to determine the feasibility of a centralised seawater cooling plant serving the proposed buildings, as well as the Table Bay Hotel and Victoria Wharf Mall due to their proximity to the East Pier. The installation of a centralised cooling plant will increase efficiencies and lower maintenance costs. Furthermore, the cooling from sea water and the use thereof for air conditioning reduces water consumption and water treatment costs linked to large air conditioning plants.

The location of the East Pier Precinct in close proximity to the ocean presents an opportunity to use seawater to cool the building, thereby eliminating the need for costly

conventional air conditioning. Approximately 470 000kWh per annum of electricity will be saved at the Table Bay Hotel and approximately 2 500 000kWh per annum at the Victoria Wharf as a result of the proposed cooling system, resulting in a significant operational cost saving to the V&A Waterfront.

Approximately 46 000kl of water will be saved per annum by replacing existing cooling towers with the proposed seawater condenser system.

Erf 176352 is not zoned similarly to the rest of the Waterfront, but is zoned TR1 zone since it was reclaimed after the Waterfront's initial development rights were granted in 1993. As such, a precinct plan approval is not required and given the proposal to upgrade the helipad on Erf No. 176353, only a Consent Use is required. The consent use application for the helipad upgrade, which was granted on 16 September 2020, make specific reference to the placement of a seawater cooling plant in the ground floor of the helipad/parking garage structure.

The proposed seawater cooling plant is aligned with the Municipal Spatial Development Framework and the Table Bay Structure Plan which identify the site for "mixed-use intensification". As such, the land use associated with the proposed seawater cooling plant is aligned with the current applicable spatial planning policy of the City of Cape Town.

3.2 Biophysical impacts

The proposed discharge site is located off the sea-ward edge of the breakwater of the Port of Cape Town. The breakwater forms the eastern boundary of Granger Bay. The shoreline of Granger Bay has been subject to much development in the past. Much of the adjacent land on the eastern boundary of Granger Bay have been reclaimed and is protected by a dolos revetment. The coastline in the middle reaches of Granger Bay comprise a temporary rock revetment, which is subjected to abrasion by waves and has led to the formation of a steep gravel beach with a very coarse and pebbly adjacent subtidal area. The western extent of the Bay comprises a rubble embankment, a sheltered boat launch site managed by the Oceana Power Boat Club, and the Granger Bay Marina.

As a major port in the City of Cape Town, the site is already substantially transformed and subject to anthropogenic disturbance such as industry, port activities, shipping, ballast water discharges, oil spills, sewage, household discharges, discharges from fish processing factories, and storm water runoff.

There are no freshwater habitats or any natural freshwater features on the site as it comprises of reclaimed land in the sea.

The site is completely transformed and devoid of vegetation.

3.3 Marine impacts

A Marine Specialist Study and Dispersion Modelling Impact Assessment Report dated 2022 was compiled by Amy Wright, Kenneth Hutchings and Dr Barry Clark of Anchor Environmental, to assess the marine impacts of the proposed development.

Near-field dispersion modelling was performed to assess dilution and dispersion of the effluent from the proposed seawater cooling system for a range of discharge options. The main objective of the modelling study was to determine key near-field design parameters to achieve a sufficient level of initial dilution in accordance with regulatory

requirements. The final effluent is expected to be slightly buoyant relative to the ambient. Two parameters were modelled for the study, *i.e.*, temperature and the anti-foulant sodium hypochlorite. Values were calculated for a maximum flow rate of 800ℓ/s (0.826m$^3$/second) and a maximum temperature difference of 7°C, 9.5°C and 10°C to the surrounding water (ambient intake water in summer of 11.2°C).

Near field modelling results show that both the predicted temperature of 7°C and 9.5°C above ambient meet the South African Water Quality Guidelines for Coastal Marine Waters for the Natural Environment at the edge of the 100m Recommended Mixing Zone under the most conservative port design layout. The modelled maximum effluent temperature of 10°C above intake only just exceeds the Water Quality Guidelines at the 100m Recommended Mixing Zone by 0.1 of a degree. This is considered acceptable from an environmental impact perspective.

The predicted sodium hypochlorite biocide concentrations at the 100m Recommended Mixing Zone also fall within the specified limit at the 100m Recommended Mixing Zone.

The installation of the discharge pipeline involves the operation of construction machinery and vehicles on the breakwater which can potentially disturb the intertidal and subtidal artificial habitat, specifically that of the Port of Cape Town breakwater dolosse. This artificial habitat is colonised by a number of intertidal invertebrate fauna and flora (e.g. mussels, barnacles, crabs, algae), which characterise much of the intertidal habitat in Table Bay.

The construction activities will be localised (*i.e.*, confined to within a few hundred metres of the construction footprint), will be short-term and will not noticeably influence the ecology of the breakwater as a whole. Since this disturbance will not result in a net loss of habitat, the significance of this impact is rated as very low. Mitigation measures include rehabilitation of the disturbed area immediately following construction by removing all artificial materials not related to the permanent fixture of the pipeline. With the implementation of these measures, the impact will be insignificant.

The construction of the proposed pipeline extension will result in the temporary disturbance of pelagic habitat within the footprint of the breakwater. However, mobile fish and elasmobranchs (sharks, rays and skates) that utilise the habitat will be able to move to adjacent areas. Considering that the area is already disturbed by frequent vessel movement and that the pelagic habitat affected will be relatively small in comparison to adjacent areas of similar habitat in Table Bay, no mitigation measures are deemed necessary and the significance of this impact is considered insignificant.

Periodic dosing with a diluted solution of commercially available sodium hypochlorite will be undertaken to keep equipment and pipelines clean from marine biofouling. The sodium hypochlorite solution will be based on that utilised for the Silo Building Precinct seawater cooling system currently in operation at the V&A Waterfront, *i.e.*, comprising of 12.5% sodium hypochlorite diluted on site to a 3% solution before dosing into the system. The proposed regime for dosing with hypochlorite entails adding 1.5 litres of 3% hypochlorite solution sequentially in each of the suction lines whilst the respective pump is turned off. Each 1.5 litre dose contains approximately 46.95g of available chlorine and must therefore be diluted with 187 800 litres of seawater to reduce the levels of available chlorine to the prescribed level of 0.25mg/L at the outfall. The Silo District cooling water system had a prescribed dousing regime interval of forty minutes between each system dousing. Given the larger volumes of flow for the East Pier system,

a similar 40-minute dousing interval is sufficient to ensure the proper dilution and breakdown of the hypochlorite solution to safeguard the marine environment. The dosing regime for the Silo Building Precinct Cooling system has been in use since 2018, and there is no evidence of negative environmental impacts detected by the Silo District Outfall Environmental Monitoring Programme.

The near-field modelling study undertaken to assess the dispersion of sodium hypochlorite biocide within the cooling water discharge showed that the required Water Quality Guidelines were met almost immediately upon entering the marine environment (at 0.5m downstream of the diffuser, biocide concentrations were 0.1mg/l) under summer conditions. This impact was assessed as being insignificant with the implementation of mitigation measures.

The proximity of the authorised V&A Waterfront reverse osmosis desalination plant outfall to the East Pier thermal effluent discharge site required the assessment of the cumulative impacts of both the outfalls, should the effluent streams not be combined.

Modelling of both outfalls indicate that the plumes are confined to different areas of the water column, due to differences in density, and are therefore unlikely to interact. Should interaction occur, the consequences will be of low significance, given that there are little to no thermal effects expected in a reverse osmosis effluent discharge, and because Water Quality Guidelines are met within 30m of the East Pier thermal effluent discharge. Therefore, the cumulative impacts will be of very low significance.

With the implementation of mitigation measures, it is unlikely that the cumulative impacts will endure beyond the short to medium-term, if at all.

The specialists recommended mitigations will be included in the EMPr, in accordance with the requirements of Condition 10 of this Environmental Authorisation.

3.4 Heritage impacts

A Heritage Compliance Statement dated 30 August 2021 was compiled by Nicolas Baumann, to assess the heritage impacts of the proposed development.

A Heritage Impact Assessment dated 2017 was previously compiled for the East Pier Precinct by Nicolas Baumann, which was commented on by the South African Heritage Resources Agency. A Record of Decision was issued by Heritage Western Cape in October 2017, which concluded that the area for the proposed cooling plant had low heritage significance and that no further heritage investigations were required.

The Heritage Impact Assessment dated 2017 identified the following heritage resources associated with the East Pier precinct:

- Context scale;
- Precinct scale; and
- Individual elements, buildings and features.

Context scale:

The East Pier Precinct and the broader Victoria Basin context, of which it is a part, is a place of considerable historic, architectural, aesthetic and technological significance. The dominant themes that are evident in the broader context of the V&A Waterfront and which have relevance for the East Pier precinct include:

- Place of defence: Amsterdam and Chavonnes Batteries;
- Convict labour: Breakwater Prison/Chavonnes Battery and breakwater wall;

- Contract labour: Labour compounds;
- Place of quarantine: Amsterdam Battery;
- Maritime technology: Alfred/Victoria Basins and adjacent quay edges;
- Place of distribution: Grain silo and gantry, fishing industry warehouses;
- Place of arrival: Arrival of all goods and travelers from the sea to the City;
- Fishing industry: Fish market, berthing facilities for trawlers and long liners, maritime
- patrol vessels;
- Place of incarceration: Amsterdam and Chavonnes Batteries, Robben Island Embarkation Point;
- Symbolic scenic qualities: View from the water's edge and point of arrival into the Victoria Basin of Table Mountain; iconic mountain silhouette and predominant landmark feature in the city;
- Place of commerce and trade: Fish market, shopping centres, hotels, pleasure cruises, residential accommodation; and
- Place of recreation and tourism: Shopping centres, craft market, water orientated tourism facilities.

Although many of the themes and roles are no longer operational, the physical fabric, to varying degrees, remains extant and has the potential to contribute to a sense of meaning and place character at the V&A Waterfront.

Precinct Scale:
The following aspects are of heritage significance:

- The historic, architectural and aesthetic significance of the built form which frames the Victoria Basin, in particular the gable ended pitched roof, warehouse typology which is a distinctive architectural and place-making feature of the Victoria Basin;
- The spatial relationships of buildings, predominantly warehousing, to the water's edge. As opposed to the rest of the Waterfront, public access to the water's edge, particularly to the Victoria Basin, is not possible in this precinct at present; and
- The working harbour elements, in particular the berthing facilities for the fishing industry, the SA Agulhas, and the maritime patrol vessels. The heliport facility also contributes to the working harbour quality of the precinct.

Individual Elements, Buildings and Features:
Several individual elements, buildings and features of the East Pier Precinct are of heritage significance, including the Quay 7 building, the Breakwater Wall, the quay edge of Victoria Basin and the two cranes.

The Breakwater Wall is the only relevant element given the scale of the proposed development and its location, with the discharge point being located on the seaward edge of the Breakwater Wall. The Breakwater Wall dates from the earliest period of harbour construction in 1860 and was constructed from the stone material excavated from the Alfred Basin. It was built by prisoners who were incarcerated at the convict station located on the Portswood Ridge. The Breakwater Wall and the actual breakwater which flanks the heliport facility on reclaimed land, dates from the 1860s and is considered to have a Grade 3A heritage grading due to its historical, architectural, contextual and technological significance.

The Heritage Compliance Statement confirmed that the site has a low heritage sensitivity and concluded that the proposed seawater cooling plant will have negligible heritage impacts.

3.5 Dust and noise impacts

Potential dust and noise impacts are anticipated during the construction phase. However, no significant potential dust and noise impacts are anticipated as these impacts will be mitigated by the implementation of the mitigation measures included in the EMPr.

The development will result in both negative and positive impacts.

**Negative Impacts:**

- Potential marine ecological impacts; and
- Potential heritage impacts.

**Positive impacts:**

- Employment opportunities will be created during the construction phase;
- Socio-economic benefits (reduced demand on utilities infrastructure, primarily electricity and potable water supply); and
- Contribution to the local economy.

**National Environmental Management Act Principles**

The National Environmental Management Act Principles (set out in section 2 of the NEMA, which apply to the actions of all Organs of State, serve as guidelines by reference to which any Organ of State must exercise any function when taking any decision, and which must guide the interpretation, administration and implementation of any other law concerned with the protection or management of the environment), *inter alia*, provides for:

- the effects of decisions on all aspects of the environment to be taken into account;
- the consideration, assessment and evaluation of the social, economic and environmental impacts of activities (disadvantages and benefits), and for decisions to be appropriate in the light of such consideration and assessment;
- the co-ordination and harmonisation of policies, legislation and actions relating to the environment;
- the resolving of actual or potential conflicts of interest between Organs of State through conflict resolution procedures; and
- the selection of the best practicable environmental option.

In view of the above, the NEMA principles, compliance with the conditions stipulated in this Environmental Authorisation, and compliance with the EMPr, the competent authority is satisfied that the proposed listed activity will not conflict with the general objectives of integrated environmental management stipulated in Chapter 5 of the NEMA and that any potentially detrimental environmental impacts resulting from the listed activities can be mitigated to acceptable levels.

You are reminded of your general duty of care towards the environment in terms of Section 28(1) of the NEMA which states: "*Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.*"

--END----------