



REFERENCE NUMBER: 14/2/1/1/F4/26/0076/15

ENQUIRIES: Ziyaad Allie

BY REGISTERED MAIL

Lucky Star Limited
P.O. Box 50
STOMPNEUS BAY
7382

Tel: (022) 742 8002
Fax: (086) 531 0431
Email: Titantias@luckystar.co.za

Attention: Titania Stefanus-Zincke

Dear Madam

APPLICATION IN TERMS OF SECTION 24G OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) ("NEMA"): UNLAWFUL COMMENCEMENT OF LISTED MANAGEMENT ACTIVITIES: THE UNLAWFUL EXPANSION OR CHANGES TO EXISTING FACILITIES FOR ANY PROCESS OR ACTIVITY WHERE SUCH EXPANSION OR CHANGES WILL RESULT IN THE NEED FOR A PERMIT OR LICENCE OR AN AMENDED PERMIT OR LICENCE IN TERMS OF NATIONAL OR PROVINCIAL LEGISLATION GOVERNING THE RELEASE OF EMISSIONS OR POLLUTION ON ERF 6, ERF 7 AND ERF 8, MAIN ROAD, STOMPNEUS BAY

With reference to your application dated 12 March 2015 in terms of section 24G of the NEMA for the consequences of unlawful commencement of listed activities identified in terms of the NEMA, find below the decision in respect of your application.

ENVIRONMENTAL AUTHORISATION

A. DECISION

By virtue of the powers conferred by section 24G of the NEMA and the *Environmental Impact Assessment Regulations, 2014* ("EIA Regulations, 2014") (as amended), the competent authority herewith **grants environmental authorisation** to the applicant to continue with the listed activities specified in Section C below as described in the Environmental Impact Report ("EIR") dated 31 March 2016.

The granting of this Environmental Authorisation is for the continuation, conducting or undertaking of the listed activities as described in Section C below and is subject to compliance with the conditions set out in Section G. This Environmental Authorisation shall only take effect from the date on which it has been issued.

The Environmental Authorisation does not exempt the holder thereof from compliance with any other applicable legislation.

B. DETAILS OF THE APPLICANT FOR THIS ENVIRONMENTAL AUTHORISATION

Lucky Star Limited
 c/o Ms Titania Stefanus-Zincke
 P.O. Box 50
 STOMPNEUS BAY
 7382
 Tel: (022) 742 8002
 Fax: (086) 531 0431
 Email: Titanias@luckystar.co.za

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

C. LIST OF ACTIVITIES AUTHORISED

Listed Activities	Activity/Project Description
<p>Government Notice No. R544 of 18 June 2010 –</p> <p>Activity Number: 28</p> <p>Activity Description:</p> <p><i>"The expansion of or changes to existing facilities for any process or activity where such expansion or changes to will result in the need for a permit or license in terms of national or provincial legislation"</i></p>	<p>Lucky Star did not convert its water use registration for the Fish Processing Plant to a Coastal Waters Discharge Permit by December 2011, as required in terms of the <i>National Environmental</i></p>

<p><i>governing the release of emissions or pollution, excluding where the facility, process or activity is 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 that Act will apply."</i></p>	<p><i>Management: Integrated Coastal Management Act.</i> The installation of the seawater scrubber (April 2011) and the chemical scrubber (April 2014) resulted in an increase in effluent discharged to sea that was not duly authorised by an existing, new or amended permit.</p>
<p><i>As similarly listed in Government Notice No. R. 983 of 4 December 2014-</i> Activity Number: 34 Activity Description: <i>"The expansion or changes to existing facilities for any process or activity where such expansion or changes will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions or pollution, excluding- (i) where the facility, process or activity is 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; or (ii) the expansion of or changes to existing facilities for the treatment of effluent, wastewater or sewage where the capacity will be increased by less than 15 000 cubic metres per day."</i></p>	<p>A seawater scrubber with larger capacity was installed in April 2011 to replace the existing scrubber to ensure that odorous vapour could be reduced and that the quality of emissions released to the air would improve. Vapour from the plant, containing odorous substances such as hydrogen sulphide (H₂S), is ducted to the seawater scrubber, where seawater used for cooling plant equipment is sprayed over the vapour to condense it. The seawater scrubber allows the scrubbing/condensing of:</p> <ul style="list-style-type: none"> • All residual vapour from the waste heat evaporators; and • All production emission gasses that are collected and ducted to the scrubber. <p>A chemical scrubber was installed at the plant in April 2014. The chemical scrubber utilizes chlorine dioxide as the oxidizing agent that reacts with odorous non-condensable compounds in the vapour that exits the seawater scrubber.</p>
<p><i>As similarly listed in Government Notice No. 327 of 7 April 2017-</i> Activity Number: 34 Activity Description:</p>	

"The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution, excluding—

(i) where the facility, infrastructure, process or activity is 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;

(ii) the expansion of existing facilities or infrastructure for the treatment of effluent, wastewater, polluted water or sewage where the capacity will be increased by less than 15 000 cubic metres per day; or (iii) the expansion is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will be increased by 50 cubic meters or less per day."

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

D. PROPERTY DESCRIPTION AND LOCATION

The listed activities commenced on Erf 6, 7 and 8, Main Road Stompneus Bay.

The SG digit codes are: C0460013000000060000; C04600130000000700000;
C04600130000000800000

The co-ordinates for the property boundary are:

Point	Latitude (S)	Longitude (E)
1	32° 84' 58.33" South	18° 13' 19.44" East

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

Herein-after referred to as "the site".

E. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

SRK Consulting
c/o Ms Sue Reuther
Postnet Suite 206
Private Bag X18
STELLENBOSCH
7701

Tel: (021) 659 3060
Fax: (021) 685 7105
Email: sreuther@srk.co.za

F. DETAILS OF THE ACTIVITIES UNDERTAKEN

Seawater Scrubber

Lucky Star identified the need to further reduce the odorous emissions from the fishmeal plant in 2010/11, as the existing scrubber at the plant had insufficient vapour condensing capacity. A seawater scrubber with larger capacity was installed in April 2011 to replace the existing scrubber to ensure that odorous vapour could be reduced and that the quality of emissions released to the air would improve. Vapour from the plant, containing odorous substances such as hydrogen sulphide (H₂S), is ducted to the seawater scrubber, where seawater used for cooling plant equipment is sprayed over the vapour to condense it. The seawater scrubber allows the scrubbing/condensing of:

- All residual vapour from the waste heat evaporators; and
- All production emission gasses that are collected and ducted to the scrubber.

The seawater scrubber decreased the volume of H₂S in emissions released to the atmosphere from 23.35mg/Nm³ in August 2010 to below 3.12mg/Nm³ in 2012-2014. The required volume of seawater increased from 80m³/hr for the previous scrubber to 400m³/hr for the new scrubber. The seawater containing the condensate is pumped to the sea. The exit temperature of the discharged seawater decreased from 43°C with the old scrubber to 30°C for the new scrubber.

Chemical Scrubber

A chemical scrubber was installed at the plant in April 2014. The chemical scrubber utilizes chlorine dioxide as the oxidizing agent that reacts with odorous non-condensable compounds in the vapour that exits the seawater scrubber. The use of the chemical scrubber has resulted in a reduction of H₂S in emissions to the air from 0.89mg/Nm³ to 0.66mg/Nm³. Freshwater is reused in the scrubber, and any effluent from the chemical scrubber is minimal under normal operation. Any effluent generated will be due to instances when water samples are drawn and/or in the event of tank drainage which will only occur, if required, during a breakdown of the unit.

As a result of the installation of the new scrubbers, abstraction of seawater increased by 320m³/hr. This increase has been achieved by additional pump capacity/utilisation, and water supply and storage infrastructure within the plant was not altered.

G. CONDITIONS OF AUTHORISATION

The following are conditions of authorisation that are set and must be implemented for this Environmental Authorisation.

PART I

Scope of authorisation

1. The holder is authorised to undertake the listed activities specified in Section C above, as described in the EIR dated 31 March 2016 on the site as described in Section D above.
2. The holder shall be responsible for ensuring 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. Any changes to, or deviations from the scope of the alternative described in Section F 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 information in order 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.

PART II

Written notice to the competent authority

4. Seven (7) calendar days' notice, in writing, must be given to the competent authority for continuation of commencement of the activities.
 - 4.1 The notice must make clear reference to the site details and 24G Reference number given above.
 - 4.2 The notice must also include proof of compliance with conditions 7 of this EA.

PART III

Notification and administration of an appeal

5. The holder must in writing, within 14 (fourteen) calendar days of the date of this decision—
 - 5.1 notify all registered Interested and Affected Parties ("I&APs") of –
 - 5.1.1 the outcome of the application;
 - 5.1.2 the reasons for the decision as included in Annexure 3;
 - 5.1.3 the date of the decision; and
 - 5.1.4 the date when the decision was issued.
 - 5.2 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 Appeals Regulations, 2014* detailed in Section I below.
 - 5.3 draw the attention of all registered I&APs to the manner in which they may access the decision.

5.4 provide the registered I&APs with:

- 5.4.1 the name of the holder (entity) of this Environmental Authorisation;
- 5.4.2 name of the responsible person for this Environmental Authorisation;
- 5.4.3 postal address of the holder;
- 5.4.4 telephonic and fax details of the holder;
- 5.4.5 e-mail address, if any, of the holder; and
- 5.4.6 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*.

6. The listed activities, including site preparation, may not commence within 34 (thirty-four) calendar days from the date of issue of this Environmental Authorisation. In the event that an appeal is lodged with the Appeal Authority, the effect of this Environmental Authorisation is suspended until the appeal is decided.

PART IV

Management of the activity/development

7. The draft Environmental Management Programme ("EMPr") of March 2016 compiled by SRK Consulting, and submitted as part of the application for environmental authorisation is hereby approved and must be implemented.
8. Since the scrubbers have already been installed and operated for a number of years, the mitigation measures apply to the operational phase of the scrubbers. They are applicable during the long-term operation and maintenance of the scrubbers and must be implemented.
9. The EMPr must be included in all contract documentation for all phases of implementation.

PART V

Monitoring

10. A copy of the Environmental Authorisation, EMPr, any independent assessments of financial provision for rehabilitation and environmental liability, closure plans, audit reports and compliance monitoring reports must be kept at the site of the authorised

activities, and must be made available to anyone on request, including a publicly accessible website (if applicable).

11. Access to the site referred to in Section D must be granted, and the environmental reports mentioned above 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.

PART VI

Auditing

12. In terms of regulation 34 of the *EIA Regulations, 2014* the holder must conduct environmental audits to determine compliance with the conditions of the Environmental Authorisation and the EMPr and submit Environmental Audit Reports to the competent authority upon receiving such request in writing from the competent authority. The Audit Report must be prepared by an independent person and must consider all the information required in Appendix 7 of the *EIA Regulations, 2014*.

PART VII

Activity/ Development Specific Conditions

13. The holder must ensure that all emissions emanating from the activities undertaken on site are within acceptable limits and must not cause nuisance/odours upon the receiving environment.

H. GENERAL MATTERS

1. Notwithstanding this Environmental Authorisation, the holder must comply with any other statutory requirements that may be applicable when undertaking the listed activities.
2. Non-compliance with a condition or term of this Environmental Authorisation or EMPr may render the holder liable to criminal prosecution.
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* 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 must be done in accordance with regulations 35 to 37 of the *EIA Regulations, 2014* or any relevant legislation that may be applicable at the time.

I. APPEALS

Appeals must comply with the provisions contained in the *National Appeal Regulations, 2014*.

1. An appellant (if the holder) must –

1.1 submit an appeal in accordance with regulation 4 *National Appeal Regulations, 2014* to the Appeal Administrator and a copy of the appeal to any registered I&APs, any Organ of State with interest in the matter and the decision maker within 20 (twenty) calendar days from the date the holder was notified by the competent authority of this decision.

2. An appellant (if NOT the holder) must –

2.1 submit an appeal in accordance with regulation 4 *National Appeal Regulations, 2014* to the Appeal Administrator, and a copy of the appeal to the holder, any registered I&APs, any Organ of State with interest in the matter and the decision maker within 20 (twenty) calendar days from the date the holder notified the registered I&APs of this decision.

3. The holder (if not the appellant), the decision-maker, I&APs and 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. This appeal and responding statement must be submitted to the address listed below:

By post: Attention: Jaap de Villiers
Western Cape Ministry of Local Government, Environmental Affairs &
Development Planning
Private Bag X9186, Cape Town, 8000; or

By facsimile: (021) 483 4174; or

By hand: Attention: Mr Jaap de Villiers (Tel: 021-483 3721)
Room 809, 8th floor Utilitas Building
1 Dorp Street, Cape Town, 8000; or

By e-mail: Jaap.DeVilliers@westerncape.gov.za

Note: You are also requested to submit an electronic copy (Microsoft Word format) of the appeal and any supporting documents to the Appeal Administrator to the address listed above and/ or via e-mail to Jaap.DeVilliers@westerncape.gov.za.

5. A prescribed appeal form, as well as assistance regarding the appeal processes is obtainable from the office of the appeal authority/ at: Tel. (021) 483 3721, E-mail Jaap.DeVilliers@westerncape.gov.za or URL <http://www.westerncape.gov.za/eadp>.

J. CONSEQUENCES OF NON-COMPLIANCE WITH CONDITIONS


Non-compliance with a condition or term of this Environmental Authorisation or EMPr may result in suspension or withdrawal of this Environmental Authorisation and may render the holder liable for criminal prosecution.

K. DISCLAIMER

The Western Cape Government, the Municipality, 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.

Yours faithfully



ADV. CHARMAINE MARÉ

DIRECTOR: ENVIRONMENTAL GOVERNANCE

DATE OF DECISION: 27 September 2018

Copied to: (1) Sue Reuther (SRK Consulting)
(2) Stephan Holdings cc (Landowner)
(3) The Municipal Manager (Saldanha Bay Municipality)
(4) Alana Duffell-Canham (CapeNature)
(5) Sue Middleton (DAFF)
(6) Rueben Molale (DEA: Oceans & Coasts)

Fax: (086) 530 7003

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Fax: (021) 465 6550

Email: sueM@daff.gov.za

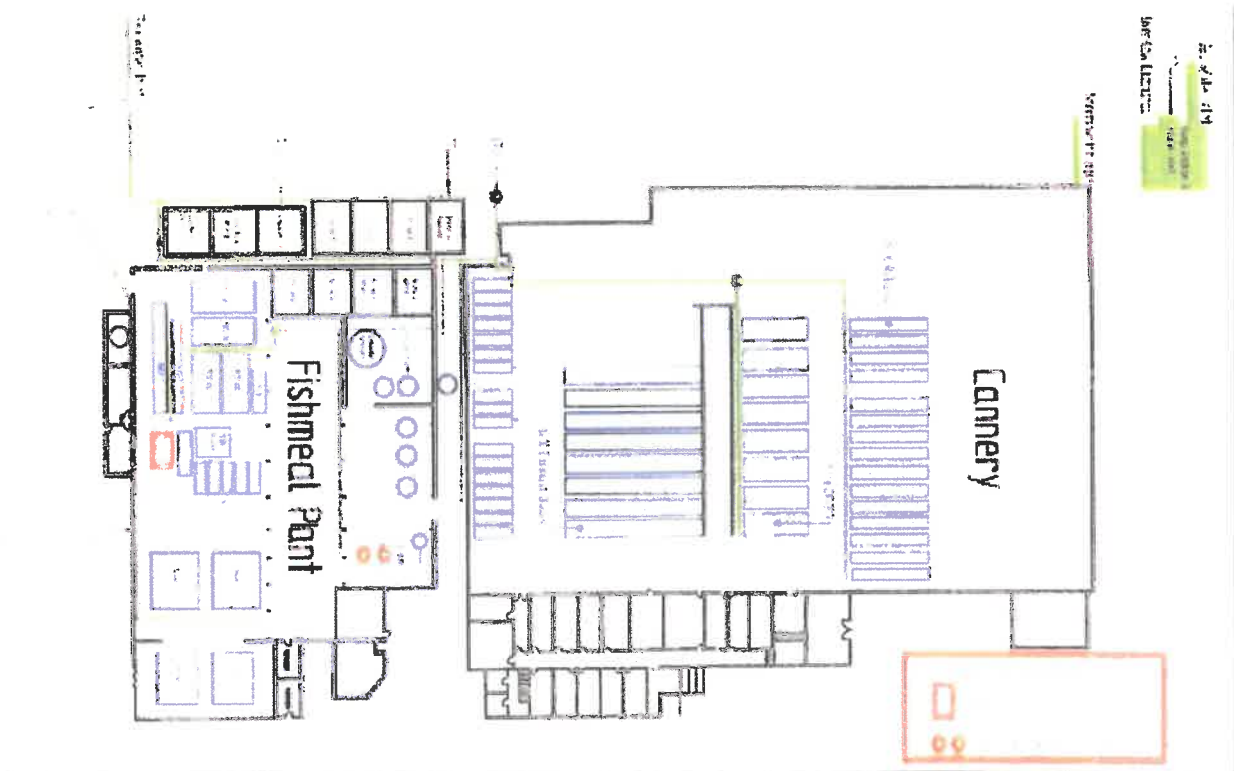
Fax: (021) 819 2444

Email: rmolale@environment.gov.za

ANNEXURE 1: LOCALITY MAP



ANNEXURE 2: SITE PLAN



LUCKY STAR ST HELENA BAY PLANT SECTION 24G APPLICATION SITE PLAN

Project No. 421462

FOR OFFICIAL USE ONLY:

S24G REFERENCE: 14/2/1/1/F4/26/0076/15

ANNEXURE 3: REASONS FOR THE DECISION

This Environmental Authorisation is in respect of the consequences of commencement of the aforementioned illegal activities. An Environmental Assessment Practitioner ("EAP") was appointed to submit a section 24G Environmental Impact Assessment ("EIA") to the Department to obtain this Environmental Authorisation. The EIA was considered adequate for informed decision-making. In addition, the holder paid an administrative fine of R130 000 (One hundred and thirty thousand Rand) to meet the requirements of section 24G of the *National Environmental Management Act, 1998* ("NEMA").

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

- a) The information contained in the application form dated 12 March 2015, the Environmental Impact Report ("EIR") dated 31 March 2016, the additional information dated 30 June 2017 and the Environmental Management Programme of March 2016 ("EMPr") submitted together with the EIR.
- b) Relevant information contained in the Departmental information base, including, the Guidelines on Public Participation and Alternatives.
- c) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the NEMA.
- d) The comments received from Interested and Affected Parties ("I&APs") and the responses provided thereto.
- e) The sense of balance of the negative and positive impacts and proposed mitigation measures.
- f) The site visit conducted on 05 October 2016 attended by officials from this Department.
- g) The appeal decision on the 24G administrative fine dated 28 August 2018.

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 Process

In terms of section 24G(1)(vii)(dd) of the NEMA, "...a description of the public participation process followed during the course of compiling the report, including all comments received from interested and affected parties and an indication of how the issues raised have been addressed ...", is required.

The public participation process conducted by the EAP comprised of the following:

- An advertisement was placed in the "**Geklassifiseerd**" newspaper on 07 April 2016;
- A site notice was erected; and
- Letters were sent to I&APs and the municipal ward councillor on 05 April 2016.
- I&APs were afforded the opportunity to provide comments on the draft and final EIA Reports.

1.1 Consultation with organs of state in terms of section 24O of the NEMA

The following organs of state provided comment on the application:

- CapeNature ("CN")
- Department of Agriculture, Forestry and Fisheries ("DAFF")
- National Department of Environmental Affairs ("DEA")
- This Department's Air Quality Management ("AQM")
- This Department's Biodiversity and Coastal Management ("B&CM")
- Department of Health ("DoH")
- Saldanha Bay Municipality ("SBM")
- Westcoast District Municipality ("WCDM")

At the end of the public participation process, comments were received from CN, the DAFF, the DoH and West Coast District Municipality. Below is a summary of the comments received and the responses thereto that was considered in the final determination process.

CN

CapeNature's main concern was the discharge of potentially harmful chemicals into the marine environment; although noting that the discharge of the potentially harmful chemicals forms part of a separate investigation. The EAP responded by stating that it is correct that the section 24G application focuses on the sea water and chemical scrubbers that were installed at the fish processing plant, and hence predominantly

on air quality, although effluent also plays a role as the scrubbers require more sea water and hence the effluent release. The pollution contribution of the effluent from the scrubbers is relatively limited, but other sources in the plant also contribute to the effluent.

DAFF

The DAFF stated that although it is noted that the pollution potential of the total effluent stream does not fall within the scope of the section 24G application, the DAFF would like to remain informed on the investigation and mitigation of effluent. The DAFF would also like to remain informed on the Coastal Waters Discharge Permit ("CWDP") application and receive any monitoring data. The EAP responded by stating that an effluent monitoring campaign was undertaken by Anchor Environmental and SRK, outside of the section 24G application process to determine that effluent quality and inform the CWDP application process. Lucky Star is currently monitoring effluent and investigating options to improve the effluent quality. Implementation of such options may require separate environmental authorisation and is beyond the scope of the section 24G application.

The DoH stated that they have no comment, the WCDM supports the installation of the scrubbers and SBM had no comments or recommendations.

All the concerns raised by I&APs were responded to and adequately addressed during the public participation process. Specific management and mitigation measures have been considered in this Environmental Authorisation and in the EMPr to adequately address the concerns raised.

The competent authority concurs with the EAP's responses to the issues raised during the public participation process and has included appropriate conditions in this Environmental Authorisation and in the EMPr.

2. Alternatives

2.1 Technology/Location/Site/Activity Alternatives

Alternative 1 (Herewith authorised)

This entails the installation of a seawater and a chemical scrubber at the plant.

Seawater Scrubber

Lucky Star identified the need to further reduce the odorous emissions from the fishmeal plant in 2010/11, as the existing scrubber at the plant had insufficient vapour condensing capacity. A seawater scrubber with larger capacity was installed in April 2011 to replace the existing scrubber to ensure that odorous vapour could be reduced and that the quality of emissions released to the air would improve. Vapour from the plant, containing odorous substances such as hydrogen sulphide (H₂S), is ducted to the seawater scrubber, where seawater used for cooling plant equipment is sprayed over the vapour to condense it. The seawater scrubber allows the scrubbing/condensing of:

- All residual vapour from the waste heat evaporators; and
- All production emission gasses that are collected and ducted to the scrubber.

The seawater scrubber decreased the volume of H₂S in emissions released to the atmosphere from 23.35mg/Nm³ in August 2010 to below 3.12mg/Nm³ in 2012-2014. The required volume of seawater increased from 80m³/hr for the previous scrubber to 400m³/hr for the new scrubber. The seawater containing the condensate is pumped to the sea. The exit temperature of the discharged seawater decreased from 43°C with the old scrubber to 30°C for the new scrubber.

Chemical Scrubber

A chemical scrubber was installed at the plant in April 2014. The chemical scrubber utilizes chlorine dioxide as the oxidizing agent that reacts with odorous non-condensable compounds in the vapour that exits the seawater scrubber. The use of the chemical scrubber has resulted in a reduction of H₂S in emissions to the air from 0.89mg/Nm³ to 0.66mg/Nm³. Freshwater is reused in the scrubber, and any effluent from the chemical scrubber is minimal under normal operation. Any effluent generated will be due to instances when water samples are drawn and/or in the event of tank drainage which will only occur, if required, during a breakdown of the unit.

As a result of the installation of the new scrubbers, abstraction of seawater increased by 320m³/hr. this increase has been achieved by additional pump capacity/utilisation, and water supply and storage infrastructure within the plant was not altered.

Activity and Technology Alternatives

The scrubbers have effectively reduced odorous emissions at the plant. As such, no activity alternatives were considered feasible.

2.2 The option of not implementing or continuing with the activity ("No-Go" Alternative)

The "no-go" alternative or ceasing of the activity, i.e. decommissioning and/or removing the scrubbers would increase concentrations of odorous emissions from the plant and is thus not considered to be feasible.

3. Environmental Impact Assessment (EIA) and Mitigation Measures

In reaching its decision, the competent authority, considered the following in respect of the EIA and mitigation measures:

3.1. Activity Need and Desirability

The activities undertaken entails the installation of scrubbers at an existing fish processing plant. Prompted by complaints from surrounding stakeholders, the scrubbers were installed in order to reduce odorous emissions emanating from the plant.

3.2. Regional/ Planning Context

The installation of the scrubbers has not resulted in alterations to the capacity, layout or throughput of the facility.

3.3. Biophysical Impacts

In terms of biodiversity impacts, levels of contaminants in the effluent discharged from the processing plant are high and would likely pose a problem for living marine organisms (e.g. by reducing oxygen levels or causing excessive algal growth) and may also impact on other existing or potential beneficial uses of the environment.

Impacts on water quality and marine organisms due to the release of cooling water containing condensate

The seawater scrubbers utilise the plant cooling water to condense vapours, which increases the temperature of the discharge water. The cooling water also

contains some condensate. Potential impacts on sea water quality from effluent include:

- Thermal pollution through discharge of warmer seawater; and
- Contamination by condensed liquids, which contain some volatile compounds (such as ammonia).

Following the installation of the new seawater scrubber in 2011, the:

- Discharged cooling water increased from ~80 m³/hr to ~400 m³/hr;
- Temperature of released cooling water decreased from 43°C to 30°C; and
- The cooling water may contain more condensate, as the scrubber is more efficient than the previous seawater scrubber.

Harm to Marine Organisms in Water Intake Structures

The impacts of sea water abstraction on marine organisms are caused by:

- Entrainment, especially of plankton (including eggs and larvae of invertebrates and fish) by intake structures and into the process equipment; and
- Impingement, which occurs when larger marine organisms are crushed against intake screens by the velocity of the water. These organisms may suffer mortality due to starvation, suffocation or exhaustion.

The FPP has three water intake pipes and cooling water utilised in the seawater scrubber is taken in along the main jetty. The installation of the new scrubber has led to a 5-fold increase in seawater intake. The recommended maximum velocity to avoid impingement of larger marine organisms against the intake screens is 0.15m/s. The velocity at intakes on the main jetty does not exceed 0.11 m/s and is thus below the recommended maximum velocity of 0.15 m/s and should thus have minimal impacts. In addition, it is considered unlikely that mortality caused by entrainment in the cooling system will impact significantly on the productivity of the system as:

- Plankton species have rapid reproductive cycles and are likely to be widespread and abundant in the coastal waters. Their ability to sustain their populations should thus not be impacted; and
- The reproductive strategy of many fish and invertebrates is to produce many eggs and larvae, of which a large percentage will suffer mortality by natural causes and only a small percentage will reach maturity.

In terms of impacts it can be concluded that the extent of the impact is deemed to be local, as the effect is restricted to an area close to the intake pipes.

The duration of the impact is considered long-term, as the seawater intake is integral to the operation of the FPP and the scrubber. The impact of seawater intake structures on the marine environment is deemed acceptable and no essential mitigation is recommended, other than maintaining the water intake velocity below 0.15 m/s. Improvements to the current water intake system at the main jetty can be achieved by implementing the following measures:

- Position intake pipe(s) to draw in seawater horizontally, as fish are better able to avoid rapid changes in horizontal flow.
- Position intake pipes at least 2m off the seabed to reduce the intake of sediment and benthic organisms.
- Position intake pipes at least 0.5 m below the Mean Low Water Spring to reduce entrainment of larvae and most other planktonic marine organisms, which are generally concentrated at or near the surface.

3.4. Health Issues

Improvement in air quality as a result of the installation of the seawater scrubber

According to the EIA Report, Hydrogen Sulphide (H₂S) concentration in the FPP stack emissions prior to the installation of the 2011 seawater scrubber were 23.28 mg/m³, which exceeded the 5 mg/m³ emission level stipulated in the Provisional Atmospheric Emissions Licence ("PAEL"). After installation of the seawater scrubber in 2011, H₂S concentrations in the FPP stack emissions decreased significantly by at least 20 mg/m³, to below the 5 mg/m³ stipulated in the PAEL, improving ambient air quality in the area. Ambient H₂S concentrations were below the World Health Organisation ("WHO") guideline of 7 µg/m³ for the majority of the sampling events, with two exceedances observed in 2014 and three in 2015, all of them on the northern boundary of the site. Since the prevailing wind direction is from the south, emissions from the facility are likely to have been dispersed in a northerly direction; hence higher concentrations were typically measured at this point. External sources (e.g. the municipal sewage pump station near the northern boundary of the FPP) may also contribute to occasional exceedances of H₂S WHO guidelines at this point.

4. NEMA Principles

The National Environmental Management 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 listed activities 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.

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