

**DIRECTORATE: LAND MANAGEMENT
REGION 2**

EIA REFERENCE NUMBERS: E12/2/4/2/F4/16/3001/12
ENQUIRIES: Mr. L. Lucas
DATE OF ISSUE: 06 JAN 2014

The Director
Avedia Energy (Pty) Ltd.
P.O. Box 6839
ROGGEBAAI
8012

Attention: Ms. S. Dean

Tel: (021) 418 0280
Fax: (021) 418 0285

Dear Madam

APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT AMENDMENT REGULATIONS, 2010: THE PROPOSED CONSTRUCTION OF A LIQUID PETROLEUM GAS HANDLING FACILITY AND ASSOCIATED INFRASTRUCTURE ON FARM YZERVARKENSRUG 127/13, SALDANHA.

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

ENVIRONMENTAL AUTHORISATION

DECISION

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Amendment Regulations, 2010, ("NEMA EIA Regulations") 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 described in the Final Environmental Impact Assessment Report ("EIAR") dated August 2013.

The granting of this environmental authorisation is subject to compliance with the conditions set out in section E below.

A. DETAILS OF THE APPLICANT FOR THIS ENVIRONMENTAL AUTHORISATION

Avedia Energy
 c/o Ms. S. Dean
 Avedia Energy (Pty) Ltd.
 P.O. Box 6839
ROGGEBAAI
 8012

Tel: (021) 418 0280
 Fax: (021) 418 0285

The abovementioned person is the holder of this environmental authorisation and is hereinafter referred to as "the applicant".

B. LIST OF ACTIVITIES AUTHORISED

Government Notice No. R544 of 18 June 2010 –

Activity number: 23

Activity Description:

The transformation of undeveloped, vacant or derelict land to –

- (i) residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or*
- (ii) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares; -*

except where such transformation takes place –

- (i) for linear activities; or*
- (ii) for purposes of agriculture or afforestation, in which case Activity 16 of Notice No. R. 545 applies.*

Government Notice No. R545 of 18 June 2010–

Activity Number: 3

Activity Description:

The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres.

Activity Number: 6

Activity Description:

The construction of facilities or infrastructure for the bulk transportation of dangerous goods-

- (i) in gas form, outside an industrial complex, using pipelines, exceeding 1000 metres in length, with a throughput capacity of more than 700 tons per day;*
- (ii) in liquid form, outside an industrial complex, using pipelines, exceeding 1000 metres in length, with a throughput capacity more than 50 cubic metres per day;*
or
- (iii) in solid form, outside an industrial complex, using funiculars or conveyors with a throughput capacity of more than 50 tons day.*

Government Notice No. R546 of 18 June 2010 –

Activity number: 19

Activity Description:

The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre-

(d) In Western Cape:

i. In an estuary;

ii. All areas outside urban areas;

iii. In urban areas:

(aa) Areas zoned for use as public open space within urban areas;

(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose, within urban areas.

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

The applicant is herein authorised to undertake the following alternative related to the listed activities:

The establishment of a land based Liquid Petroleum Gas ("LPG") storage facility on Portion 13 of Farm Yzervarkensrug No.127, Saldahna. The proposed LPG facility will consist of the following:

- Two mounded tank farms (with a development footprint of approximately 3075m² each), each containing 16 mounded bullet tanks with a maximum storage capacity of 250MT each will be constructed. Each tank will be made in accordance with ASME-VIII Div 2 2010 standards with a thickness of approximately 36mm (24mm at the head of the bullet), 22.2m in length and 5.6m in diameter (internal dimensions). The tank farms will be located approximately 9m from the onsite road tanker filling facility and approximately 15m from the property boundary and office buildings.
- Road tankers will be filled on site at a road tanker gantry. The gantry will be situated under a canopy with an automatic deluge system and will provide for the filling of three road tankers initially, with the availability for filling six road tankers in the future. LPG will be transported from the mounded bullet storage vessels to road tankers via a pipeline.
- A cylinder facility will be constructed with a capacity of approximately 50 tons per month. These cylinders will be used for domestic and small commercial use and will be filled manually using electronic scales. The cylinder filling plant will be covered and a sprinkler and gas detection systems will be installed. The cylinder filling station and storage area will be located north of the tanker filling facility.
- A single storey office block (development footprint of approximately 130m²), firewater pump and air compressor house (development footprint of approximately 25m²), plant control room (development footprint of approximately 30m²), pump and compressor house (development footprint of approximately 125m²), and staff ablution and locker rooms (development footprint of approximately 30m²).
- A lined reservoir, with a capacity to store 500m³ of water. The reservoir will be located on the western boundary of the proposed site.
- An underground pipeline transporting LPG to the facility will be constructed from the proposed LPG facility southward, along the western boundary of the site, continuing southwards until it reaches the southern boundary of site and running eastwards along the southern boundary of the site inside the existing jeep track until it reaches the connection point. This will cover a distance of approximately 1000 metres and will have a throughput capacity exceeding 50 cubic metres per day.
- The internal roads will have a minimum width of approximately 6 metres.

Saldanha Bay Municipality has confirmed capacity with respect to the following services pertaining to the LPG facility:

- Water supply;
- Electric supply;
- Sewerage; and
- Solid waste removal.

Access to the proposed site will be obtained via the existing entrance to the site off Main Road 559 (MR 559).

The total footprint of the proposed development and associated infrastructure will be approximately 5 ha in extent.

C. PROPERTY DESCRIPTION AND LOCATION

The listed activities will take place on Farm Yzervarkensrug 127/13, Saldanha.

The SG 21 digit code is: C0460000000012700013

Co-ordinates: 32° 59' 35.012" South
18° 00' 16.999" East

hereinafter referred to as "the site".

D. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

CHAND Specialist Environmental and Sustainability Consultants
C/o Ms. E. Dudley
Suite 1.2A
Richmond Centre
174-206 Main Road
PLUMSTEAD
7800

Tel: (021) 762 3050
Fax: (021) 762 3240

E. CONDITIONS OF AUTHORISATION

1. This environmental authorisation is valid for a period of **five years** from the date of issue. The holder must commence with all the listed activities within the said period or this environmental authorisation lapses and a new application for environmental authorisation must be submitted to the competent authority, unless the holder has lodged a valid application for the amendment of the validity period of this environmental authorisation, before the expiry of this environmental authorisation. In such instances, the validity period will be automatically extended ("the period of administrative extension") from the day before this environmental authorisation will otherwise have lapsed, until the amendment application for the extension of the validity period is decided. The listed activities, including site preparation, may not commence during the period of administrative extension.
2. The listed activities, including site preparation, may not commence within 20 (twenty) calendar days of the date of issue of this environmental authorisation. In the event that an appeal notice and subsequent appeal is lodged with the competent authority, the effect of this environmental authorisation may be suspended until such time as the appeal is decided.

3. The applicant must in writing, within 12 (twelve) calendar days of the date of this decision and in accordance with regulation 10(2)–
 - 3.1 notify all registered interested and affected parties of –
 - 3.1.1 the outcome of the application;
 - 3.1.2 the reasons for the decision as included in Annexure 1;
 - 3.1.3 the date of the decision; and
 - 3.1.4 the date of issue of the decision;
 - 3.2 draw the attention of all registered interested and affected parties to the fact that an appeal may be lodged against the decision in terms of Chapter 7 of the NEMA EIA Regulations detailed in section F below;
 - 3.3 draw the attention of all registered interested and affected parties to the manner in which they may access the decision; and
 - 3.4 publish a notice in the newspapers contemplated in regulation 54(2)(c) and (d), and which newspaper was used for the placing of advertisements as part of the Public Participation Process, that –
 - 3.4.1 informs all interested and affected parties of the decision;
 - 3.4.2 informs all interested and affected parties where the decision can be accessed; and
 - 3.4.3 informs all interested and affected parties that an appeal may be lodged against the decision in terms of Chapter 7 of the NEMA EIA Regulations;
4. A minimum of seven calendar days notice, in writing, must be given to the competent authority before commencement of construction activities.
 - 4.1. The notice must make clear reference to the site details and EIA Reference number given above.
 - 4.2. The notice must also include proof of compliance with the following conditions described herein:

Conditions: 3 and 13.
5. The holder is responsible for ensuring compliance with the conditions by any person acting on his behalf, including an agent, sub-contractor, employee or any person rendering a service to the holder.
6. Any changes to, or deviations from the scope of the description set out in section B 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 as it deems necessary 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.
7. The applicant must notify the competent authority in writing, within 24 hours thereof if any condition herein stipulated is not being complied with.
8. The draft Environmental Management Programme ("EMP") submitted as part of the application for environmental authorisation is hereby approved on condition that the following amendments are made to the EMP, and must be implemented.

- 8.1. A Stormwater Management Plan must be implemented and standards for stormwater, as set by the local authority, must be adhered to. ✓
- 8.2. An Emergency Response Plan (ERP) must be compiled prior the commencement of operations and implemented. The following, *inter alia* must be adhered to in this regard: ✓
 - 8.2.1. The ERP must be updated as and when required, to ensure the relevant and/or required emergency response procedures are included;
 - 8.2.2. All staff must be provided with the necessary emergency response training;
 - 8.2.3. Staff must be regularly reminded of their respective roles in emergencies; and
 - 8.2.4. Relevant signage must be erected at the facility warning staff and visitors of the hazards in relation to the goods stored on site.
- 8.3. A Health and Safety Plan must be compiled prior the commencement of operations and implemented. ✓
- 8.4. The manner and frequency for updating the EMP must be done as follows:

An application for amendment to the EMP must be submitted to the competent authority if any further amendments are to be made to the EMP, other than those mentioned above, and this may only be implemented once the amended EMP has been authorised by the competent authority. ✓

The EMP must be included in all contract documentation for all phases of implementation. ✓
9. A copy of the environmental authorisation and the EMP must be kept at the site where the listed activities will be undertaken. Access to the site referred to in section C above must be granted and the environmental authorisation and EMP 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 EMP must also be made available for inspection by any employee or agent of the applicant who works or undertakes work at the site.
10. The applicant 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. Further, the rights granted by this environmental authorisation are personal rights (i.e. not attached to a property, but granted to a natural or juristic person). As such, only the holder may undertake the activities authorised by the competent authority. Permission to transfer the rights and obligations contained herein must be applied for in the following manner:
 - 10.1. The applicant must submit an originally signed and dated application for amendment of the environmental authorisation to the competent authority stating that he wishes the rights and obligations contained herein to be transferred, and including (a) confirmation that the environmental authorisation is still in force (i.e. that the validity period has not yet expired or the activities were lawfully commenced with); (b) the contact details of the person who will be the new holder; (c) the reasons for the transfer; (d) an originally signed letter from the proposed new holder acknowledging the rights and obligations contained in the environmental authorisation and indicating that he/she has the ability to implement the mitigation and management measures and to comply with the stipulated conditions.

- 10.2. The competent authority will issue an amendment to the new holder either by way of a new environmental authorisation or an addendum to the existing environmental authorisation if the transfer is found to be appropriate.
11. Non-compliance with a condition of this environmental authorisation or EMP may result in suspension of this environmental authorisation and may render the holder liable for criminal prosecution.
 12. Notwithstanding this environmental authorisation, the holder must comply with any other statutory requirements that may be applicable to the undertaking of the listed activities.
 13. The holder must appoint a suitably experienced environmental control officer ("ECO"), or site agent where appropriate, for the construction phase before commencement of any land clearing or construction activities to ensure compliance with the EMP and the conditions contained herein.
 14. 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 landfill licensed in terms of the applicable legislation.
 15. All noise and sounds generated must comply with the relevant SANS codes and standards.
 16. Dust suppression methods to mitigate dust during all phases of the proposed development must be implemented. No potable water is to be used to mitigate dust in this regard (as far as is practically possible).
 17. No surface or ground water may be polluted due to any actions on the site. The applicable requirements with respect to relevant legislation pertaining to water must be met.
 18. The recommendations stipulated in the Botanical Assessment Report (dated July 2013 and compiled by Bergwind Botanical Surveys & Tours (CC)) must be implemented:
 - The Avedia LPG storage facility site and the pipeline route must be monitored for the spread of alien invasive plant species for a period of at least three years post-construction;
 - Any seedlings of alien invasive species must be identified and removed; and
 - All construction works for the pipeline route that transects sensitive vegetation must be confined to the disturbed area (existing road).
 19. 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.

20. The recommendations stipulated in the Palaeontology Impact Assessment (dated 09 March 2012 and prepared by Dr. John Prether) must be implemented (attached as Appendix A).
21. The relevant legislative requirements of the Hazardous Substances Act, 1973 (Act No. 15 of 1973), must be adhered to.
22. The storage facility and associated infrastructure must be designed, installed and managed in accordance with the relevant SANS codes, Occupational Health and Safety Act No. 85 of 1993 (OHSA) requirements, Major Hazardous Installation Regulations and flammable-storage by-laws.
 - 22.1. The recommendations as contained in section 9 of the Major Hazardous Installation (MHI) Risk Assessment Report dated July 2013 and prepared by Major Hazard Risk Consultants (cc) must be implemented:
 - 22.1.1. The emergency plan must be developed to reflect the extent of the exposure of individuals and communities to the endpoint of the hazards;
 - 22.1.2. This risk assessment is valid for the preliminary design of the project and must be updated if changes are made to the plant that can alter the risks on the facility or if any new developments happen around the site; and
 - 22.1.3. Risk reduction programmes must be investigated to reduce the impact from accidental fires and explosions on surrounding communities.
23. A copy of the MHI Risk Assessment must be available on the site at all times for inspection by the relevant authorities.
24. Leak detection equipment must be installed in accordance with the relevant SANS codes. This includes the installation of gas detectors as preventative measures against leaks.
25. Skills must be sourced locally wherever possible in order to help reduce unemployment and uplift the local community.
26. The following with respect to outdoor lighting must be implemented:
 - 26.1. The scope of lighting of outside lights must be confined within property boundaries as far as is practically possible; and
 - 26.2. Any spotlights must be fitted to direct light to the spot intended to be illuminated.
27. Landscaping of the site and mounded tanks must be done with locally occurring indigenous vegetation.
28. The recommendations as stipulated in the Traffic Impact Assessment Report (dated November 2012 and compiled by BKS (Pty) Ltd.) must be implemented:
 - 28.1. A single direct access onto Main Road 599 must be constructed;
 - 28.2. Not more than 25 parking bays must be constructed for cars;
 - 28.3. No upgrading of the road network must take place as all the intersections are operating with sufficient spare capacity; and
 - 28.4. A 20m right turn lane to the eastern approach must be constructed.
29. The applicant/holder must adhere to all relevant procedures put in place and must ensure that effective stock inventory monitoring, recording and regular auditing will take place for the early identification of possible leaks and to keep a leak history for

the site. Should any leaks be discovered the relevant Authorities must be informed within 24 hours.

30. An audit report, showing compliance with the EMP and the conditions of this Environmental Authorisation must be submitted to this Department approximately 6 months after completion of construction activities, and every year thereafter for 2 years for record purposes. This must include progress on the monitoring and clearing of invasive alien vegetation detailed in the EMP.

F. APPEALS

Appeals must comply with the provisions contained in Chapter 7 of the NEMA EIA Regulations.

1. An appellant must –
 - 1.1. submit a notice of intention to appeal to the Minister, within 20 (twenty) calendar days of the date of the decision;
 - 1.2. submit the appeal within 30 (thirty) calendar days after the lapsing of the 20 (twenty) calendar days contemplated in regulation 60(1), for the submission of the notice of intention to appeal; and
 - 1.3. within 10 (ten) calendar days of having lodged the notice of intention to appeal, provide each person and organ of state registered as an interested and affected party in respect of the application, or the applicant, with –
 - 1.3.1. a copy of the notice of intention to appeal form; and
 - 1.3.2. a notice indicating where and for what period the appeal submission will be made available for inspection by such person, organ of state, or applicant, on the day of lodging it with the Minister, and that a responding statement may be made on the appeal within 30 (thirty) calendar days from the date the appeal submission was lodged with the Minister.
2. A person, organ of state or applicant who submits a responding or answering statement in terms of regulation 63 must within 10 (ten) calendar days of having submitted the responding or answering statement, serve a copy of the statement on the other party.
3. If the person, organ of state or applicant fails to meet a timeframe with respect to the requirements as detailed above, the person, organ of state or applicant must immediately submit a written explanation to the Ministry providing a concise explanation for the non-compliance.
4. All notice of intention to appeal and appeal forms must be submitted by means of one of the following methods:

By post:	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 J. de Villiers Room 809

8th Floor Utilitas Building (Entrance at: Utilitas Building, 1 Dorp Street,
Cape Town, 8001)

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

G. 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



MR. ZAAHIR TOEFY
DIRECTOR: LAND MANAGEMENT (REGION 2)

DATE OF DECISION: _____

Copied to: (1) Ms. E. Dudley (EAP)
(2) Ms. N. Duarte (Saldanha Bay Municipality)

Fax: (021) 762 3240
Fax: (022) 715 1101

FOR OFFICIAL USE ONLY:

EIA REFERENCE NUMBER: E12/2/4/2/F4/16/3001/12
NEAS EIA REFERENCE NUMBER: WCP/EIA/0000781/2012

ANNEXURE 1: REASONS FOR THE DECISION

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

- a) The information contained in the application form dated 19 December 2011 and received by the competent authority on 19 January 2012, the final Scoping Report received by the competent authority on 23 October 2012, and the EMP submitted together with the final EIAR received by the competent authority on 20 August 2013;
- b) Relevant information contained in the Departmental information base, including, the Guidelines on Public Participation, Alternatives and Exemptions (dated October 2011);
- c) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998);
- d) The comments received from interested and affected parties and the responses provided thereon, as included in the EIAR dated August 2013;
- e) The sense of balance of the negative and positive impacts and proposed mitigation measures; and
- f) 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 included:

- identification of and engagement with interested and affected parties;
- fixing a notice board at the site where the listed activities are to be undertaken on 30 March 2012;
- giving written notice to the owners and occupiers of land adjacent to the site where the listed activities are to be undertaken, the municipality and ward councillor, and the various organs of state having jurisdiction in respect of any aspect of the listed activities on 08 March 2012; and
- the placing of a newspaper advertisement in 'Die Burger', 'Cape Times' and 'Weslander' on 08 March 2012.

The Department is satisfied that the PPP that was followed met the minimum legal requirements and all the comments raised and responses thereto were included in the comments and response report.

2. Alternatives

Preferred Alternative (Herewith authorised)

The establishment of a land based Liquid Petroleum Gas ("LPG") storage facility on Portion 13 of Farm Yzervarkensrug No.127, Saldanha. The proposed LPG facility will consist of the following:

- Two mounded tank farms (with an approximate development footprint of 3075m² each), each containing 16 mounded bullet tanks with a maximum storage capacity of 250MT each will be constructed. Each tank will be made in accordance with ASME-VIII Div 2 2010 standards with a thickness of approximately 36mm (24mm at the head of the bullet), 22.2m in length and 5.6m in diameter (internal dimensions). The tank farms will be located approximately 9m from the onsite road tanker filling facility and approximately 15m from the property boundary and office buildings.

- Road tankers will be filled on site at a road tanker gantry. The gantry will be situated under a canopy with an automatic deluge system and will provide for the filling of three road tankers initially, with the availability for filling six road tankers in the future. LPG will be transported from the mounded bulle storage vessels to road tankers via a pipeline. The loading gantry will have a capacity of 16,000MT per month with a flow rate of 50m³/h and design flow rate of 70m³/h.
- A cylinder facility will be constructed with a capacity of approximately 50 tons per month. These cylinders will be used for domestic and small commercial use and will be filled manually using electronic scales. The cylinder filling plant will be covered and a sprinkler and gas detection systems will be installed. The cylinder filling station and storage area will be located north of the tanker filling facility.
- A single storey office block (development footprint of approximately 130m²), firewater pump and air compressor house (development footprint of approximately 25m²) plant control room (development footprint of approximately 30m²), pump and compressor house (development footprint of approximately 125m²), and staff ablution and locker rooms (development footprint of approximately 30m²).
- A lined reservoir, with a capacity to store 500m³ of water. The reservoir will be located on the western boundary of the proposed site.
- An underground pipeline transporting LPG to the facility will be constructed from the proposed LPG facility southward, along the western boundary of the site, continuing southwards until it reaches the southern boundary of site and running eastwards along the southern boundary of the site inside the existing jeep track until it reaches the connection point. This will cover a distance of approximately 1000 metres and will have a throughput capacity exceeding 50 cubic metres per day.
- The internal roads will have a minimum width of approximately 6 metres.

Saldanha Bay Municipality has confirmed capacity with respect to the following services pertaining to the LPG facility:

- Water supply;
- Electric supply;
- Sewerage; and
- Solid waste removal.

Access to the proposed site will be obtained via the existing entrance to the site off Main Road 559 (MR 559).

The total footprint of the proposed development and associated infrastructure will be approximately 5 ha in extent.

Site Layout Alternatives

Two site layout alternatives were considered, as follows:

Site Layout Alternative 1 (Preferred alternative herewith Authorised)

This entailed the construction of two mounded tank farms, each containing 16 vessels. The tank farms are positioned to ensure prescribed safety distances as stipulated in SANS 10087 Part 3. This positioning also accommodates the operation of the facility in two phases by providing sufficient space for future delivery of additional vessels until capacity is reached.

The compressor house provides for liquid transfers. Its position allows for process demands to be met and compliance with SANS 10087 Part 3 and other referenced codes. In determining the location of the loading bays, road tanker requirements with respect to turning circles had to be considered. Thus, the road tanker loading bays at the on-site filling facility have been designed such that tankers can perform a 180° turn and enter the filling facility facing the site exit.

The cylinder filling station and storage area will be located further north of the road tanker filling facility such that it does not interfere with these operations or those of the second phase tank farm in the northern corner of the site. Access to the cylinder storage facility for the purposes of delivering and collecting cylinders will be provided at the single security checkpoint.

The position of the water reservoir and firewater pump house provides adequate accessibility for emergency situations while not interfering with the general operations of the handling facility.

The associated office block has been positioned with a view to providing an overview of the facility for operational and security purposes. Furthermore, it allows personnel and visitors to access the administration block without entering the handling facility area which is more desirable from a safety perspective.

This alternative was considered as being operationally superior to layout alternative 2, allowing for the best utilisation of land space for initial storage and operations with minimum disruption for future growth.

Site Layout Alternative 2

This alternative entailed the construction of a single mounded tank farm with a double row of vessels facing each other on the southern end of the proposed site. The combination of storage vessels into one mound will however provide additional space on the northern extent of the site, which could be utilised for storage or for further capacity expansion of the handling facility should the need ever arise for this.

The other components of the facility namely the road tanker filling facility, the cylinder filling and storage area, the water reservoir and the office block will be located similarly to the Preferred Site Layout.

As this layout may pose a greater safety risk in the event of catastrophic failure, this alternative is not preferred.

Pipeline Route Alternatives

In terms of the Petroleum Pipelines Act (No. 60 of 2003), licensees are obliged to allow interconnections with the facilities of other licensees provided that the interconnection is technically feasible. Two pipeline route alternatives were considered, both connecting to a pipeline which connects to the LPG marine terminal.

Pipeline Route Alternative 1

This Alternative entailed the construction of an LPG pipeline starting at the proposed site and running southwards adjacent to its western boundary, alongside the existing conveyor line to the iron ore terminal over a distance of approximately 2 kilometres, before making a turn eastwards along the existing SFF pipeline servitude to connect into the pipeline of a previously established LPG facility.

The relevant landowners have indicated opposition to this alternative and it is therefore no longer practical.

Pipeline Route Alternative 2 (Preferred alternative herewith Authorised)

This Alternative entailed the construction of an LPG pipeline starting at the proposed site and running southwards along the western boundary until the southern boundary of Portion 13 of Farm 127. The pipeline will then run east along the boundary (on the southern side of the boundary, on the adjacent property Farm 197), inside the existing jeep track. It will run in an easterly direction for a distance of approximately 700m until it meets the connection point.

Approximately 230m of this pipeline route alternative will transect a critical biodiversity area (CBA). The only disturbed area in the vicinity of this transect is the jeep track alongside the existing fence line.

All construction works for the pipeline route that transects sensitive vegetation will be confined to the disturbed area (existing road/ jeep track).

"No-Go" Alternatives

The "no-go" option will result in the site remaining as it currently is. The potential socio-economic benefits associated with the proposed development will not be realized. Since the preferred

alternative will not result in unacceptable impacts, the "no-go" option was not warranted in this regard.

3. Impacts, assessment and mitigation measures

3.1. Activity Need and Desirability

Based on the current demand for LPG as an alternative energy source in light of inflating energy costs, the proposed development is needed and desirable. The proposed site is currently zoned for Agricultural Use and as such, an application for the rezoning of the applicable portion of the property is required to be submitted to the local authority with the intention of rezoning the site for Industrial Use. The site falls within the broader area identified for an Industrial Development Node in the Provincial Spatial Development Framework, 2006. The proposed development is in line with the existing Spatial Development Framework for Saldanha Bay Municipality as it will address key priorities identified in these policies with respect to socio-economic development. The development of an LPG storage facility is considered to be aligned to the development proposals contained in the Saldanha Bay Industrial Development Zone feasibility study (October 2011). Therefore, the proposed development is consistent with its intended land-use. There is an overall trend in encouraging the use of LPG as an alternative energy source in South Africa.

The utilisation of LPG will aid in reducing the load on the electricity grid, helping to relieve pressure on electricity providers and is in line with the National LPG Strategy, which aims to convert 1.5 million households to LPG over the next five years. The proposed storage facility in Saldanha Bay will effectively contribute to the national supply as there are currently no LPG import facilities between Luanda (Angola) and Richard's Bay (Kwazulu Natal).

3.2. Socio-Economic

The proposed development will provide some temporary and permanent employment opportunities during the construction and operation phases of the proposed development. Skills will be sourced locally wherever possible in order to help reduce unemployment and uplift the local community. Employment opportunities during the construction period are estimated to generate approximately 100 jobs. Approximately 8-10 jobs will be outsourced (approximately 8%-10% of these jobs) due to the specialist nature of the facility construction process.

The proposed LPG facility will also improve access to LPG and may contribute to a reduction in its retail price, which in turn could assist in improving the living conditions of households. It is anticipated that during the operational phase, approximately 14 full time jobs will be created, excluding 12 shift workers and provision has also been made for 6 on-site drivers. The sourcing of local skills has been included in the EMP and the conditions of this Environmental Authorisation.

3.3. Biophysical

In order to preserve the ecological integrity, as per the planning principles of the Saldanha Bay SDF, the proposed site for the LPG Facility was selected due to its degraded status. The proposed site for the LPG Facility would historically have hosted Saldanha Flats Strandveld, regarded as Vulnerable in terms of the National Environmental Management: Biodiversity Act of 2004 Threatened Ecosystem List, dated 09 December 2011. The proposed site has been previously transformed through its past use as a concrete batching plant and dumping activities which have occurred on site. An isolated patch of natural vegetation is present on site, however it is noted as not being in good condition according to the Botanical Assessment Report (dated July 2013 and compiled by Bergwind Botanical Surveys & Tours (CC)), included in the EIAR.

The preferred pipeline route, however, will transect through a 230m long section of high quality Saldanha Flats Strandveld and falls within a Critical Biodiversity Area (CBA). Due to the ecological significance of the vegetation present, all construction works for the pipeline

route that transects sensitive vegetation must be confined to the disturbed area (existing road/ jeep track).

Mitigation measures minimising the impacts on the biophysical during all phases of development have been included in the EMP and in the conditions of this Environmental Authorisation.

3.4. Dust and Noise Impacts

3.4.1. The impacts of dust generated during the construction phase will be mitigated by the implementation of the EMP and the conditions of this Environmental Authorisation. Alternative dust suppression methods (such as shade netting screens) will be implemented rather than the use of potable water.

3.4.2. All noise and sounds generated during all phases of the proposed development will comply with the relevant SANS codes and standards. Furthermore, noise impacts will be mitigated by the implementation of the EMP.

3.5. Traffic Impacts

The proposed development will have potential direct negative impacts during the construction and operation phase of the proposed development since the proposed development will result in the increase in road traffic on the MR 559. The Traffic Impact Assessment Report it is recommended that a 20m right turn lane to the eastern approach is constructed to reduce possible impacts on traffic safety. Mitigation measures have been incorporated into the EMP and the conditions of this Environmental Authorisation.

3.6. Palaeontology/Heritage Impacts

Given the transformed nature of the site, no above ground resources of heritage significance in visual, social or historical terms were identified. It is however possible that palaeontology remains of heritage value may be present below the surface of the site and along the proposed route. To ensure that the loss of palaeontology resources are sufficiently mitigated measures have been incorporated into the EMP and the conditions of this Environmental Authorisation.

3.7. Visual

Owing to the topography of the proposed site and the surrounding area being predominantly flat, the development may be visible from an elevated position in the area. The surrounding area is however considered to be industrial in nature, with the iron ore conveyor abutting the site and the Steel Works in close proximity. Furthermore, planning policy suggests that future development of the surrounding area will be predominantly industrial and as such, the proposed development is not considered to be in conflict with the sense of place of the area. The proposed pipeline will be situated below ground and as such, is not considered to have a visual impact and the mounded structures will be vegetated with suitable plant species native to the area, to soften the effect on the surrounding landscape. Mitigation measures have been incorporated into the EMP and the conditions of this Environmental Authorisation.

3.8. Impact Assessment and significance

3.8.1. Palaeontology/Heritage

According to the Palaeontology Impact Assessment (dated 09 March 2012 and prepared by Dr. John Prether) the potential palaeontology impacts associated with the proposed development were assessed as medium (negative) prior to applying the mitigation measures and medium (positive) after mitigation. Excavation undertaken during the construction phase could damage and/or destroy potential fossils that may be located below the surface, but excavation activities also provide an opportunity for uncovering fossils that will otherwise have remained undiscovered below ground. These impacts will also be limited to the construction site during the

construction phase. The mitigation measures to be implemented have been included in the EMP and the conditions of this Environmental Authorisation.

3.8.2. Biophysical

According to the Botanical Assessment Report (dated July 2013 and compiled by Bergwind Botanical Surveys & Tours (CC)) the potential botanical impacts associated with the construction of the approved LPG storage facility site were assessed as low (negative) prior to applying the mitigation measures and low (negative) after mitigation. It is imperative to curb the spread of alien invasive plant species in all areas disturbed by construction. This has been included in the EMP and the conditions of this Environmental Authorisation.

The potential botanical impacts associated with the development of the preferred pipeline route were assessed as high (negative) prior to mitigation and low (negative) after mitigation. The impacts on natural vegetation and sensitive plant communities occurring on the proposed site will largely take place in the construction phase. The following mitigation measures *inter alia* will be applied: realignment of the route to remain within the existing jeep track/road, and all construction works for the pipeline route that transects sensitive vegetation must be confined to the disturbed area (existing road/jeep track). These are included in the EMP and the conditions of this Environmental Authorisation.

No operational phase impacts on botanical resources were identified. However, The Avedia LPG storage facility site and the pipeline route will be monitored for the spread of alien invasive plant species for a period of at least three years post-construction. This has been included the conditions of this Environmental Authorisation.

3.8.3. Risks/Health and Safety

The main hazards associated with the operation of the LPG facility are the thermal radiation from fires and overpressure from explosions due to the flammability of LPG. The potential risk/health and safety impacts associated with the operation of the LPG facility were assessed as medium (negative) after mitigation. Mitigation measures are included in the EMP and conditions of this Environmental Authorisation to address risk, health and safety.

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.

The development will result in both negative and positive impacts.

Negative Impacts include:

- Loss of Biodiversity;
- Potential impacts on Archaeological Resources;

- Increase in traffic;
- Health and Safety Risks; and
- Noise and dust generation.

Positive impacts include:

- Optimal use of available land in accordance with the relevant planning policies;
- Meeting key priorities identified in the relevant planning policies;
- Expansion of the industrial development area;
- Some job opportunities during the construction and operational phase;
- Availability of LPG as a resource in the domestic market; and
- Socio-Economic benefits.

In view of the above, the NEMA principles, compliance with the conditions stipulated in this environmental authorisation, and compliance with the EMP, the competent authority is satisfied that the proposed listed activity/ies will not conflict with the general objectives of integrated environmental management stipulated in Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and that any potentially detrimental environmental impacts resulting from the listed activity/ies can be mitigated to acceptable levels.

-----END-----

APPENDIX A: PALAEOLOGICAL IMPACT ASSESSMENT REPORT RECOMMENDATIONS

8 RECOMMENDATIONS

The potential impact has a moderate influence upon the proposed project, consisting of implemented mitigation measures recommended below, to be followed during the construction phase.

Monitoring by on-site personnel and field inspections by a palaeontologist/trained fossil excavator are recommended during construction of excavations.

Appendices 1 and 2 outline monitoring by construction personnel and general Fossil Find Procedures for various scenarios.

It is recommended that the contracted palaeontologist carry out a field inspection at an appropriate stage in the making of the excavations. The aim of field inspection is to examine the deposits exposed in excavations, recording context, fossil content and to take samples. Ideally, for cost-effectiveness, the contracted palaeontologist should carry out the inspection at a stage when the deepest excavation has been made and is open and available.

Should the project proceed, the contracted palaeontologist will liaise with Chand and their client and contractors about the specifics of setting up a monitoring and inspection programme.

8.1 Monitoring

Table 2. Basic measures for the Construction EMP

OBJECTIVE: To see and rescue fossil material that may be exposed in the excavations made for installation of the facility and for pipelines.			
Project components	Foundation excavations, trenches for pipes, spoil from excavations.		
Potential impact	Loss of fossils by their being unnoticed and/ or destroyed.		
Activity/ risk source	All bulk earthworks.		
Mitigation: target/objective	To facilitate the likelihood of noticing fossils and ensure appropriate actions in terms of the relevant legislation.		
Mitigation: control	Action/	Responsibility	Timeframe
Inform staff of the need to watch for potential fossil occurrences.		The Client, Chand, the ECO & contractors.	Pre-construction.
Inform staff of the procedures to be followed in the event of fossil occurrences.		ECO/specialist.	Pre-construction.
Monitor for presence of fossils		Contracted personnel and ECO, monitoring	Construction.

	archaeologist.	
Liaise on nature of potential finds and appropriate responses.	ECO and specialist.	Construction.
Excavate main finds, inspect pits & record selected, key/higher-risk excavations.	Specialist.	Construction.
Obtain permit from HWC for finds.	Specialist.	Construction
Performance Indicator	Reporting of and liaison about possible fossil finds. Fossils noticed and rescued.	
Monitoring	Due effort to meet the requirements of the monitoring procedures.	

9 APPLICATION FOR A PALAEOLOGICAL PERMIT

A permit from Heritage Western Cape (HWC) is required to excavate fossils. The applicant should be the qualified specialist responsible for assessment, collection and reporting (palaeontologist).

A permit has not been applied for prior to the making of excavations. Should fossils be found that require rapid collecting, application for a palaeontological permit will be made to HWC immediately.

The application requires details of the registered owners of the sites, their permission and a site-plan map.

All samples of fossils must be deposited at a SAHRA-approved institution.

10 REPORTING

Should fossils be found a detailed report on the occurrence/s must be submitted. This report is in the public domain and copies of the report must be deposited at the IZIKO S.A. Museum and Heritage Resources Western Cape. It must fulfil the reporting standards and data requirements of these bodies.

The report will be in standard scientific format, basically:

- A summary/abstract.
- Introduction.
- Previous work/context.
- Observations (incl. graphic sections, images).
- Palaeontology.
- Interpretation.
- Concluding summary.