Proposed Acetylene Gas Production Facility
Environmental Impact Assessment

Public Meeting
24 July 2014
Agenda

- Introduction 5 minutes
- Project Description 15 minutes
- EIA Findings and Mitigation 10 minutes
- Open Discussion 25 minutes (negotiable)
  - Questions and clarification
  - Issues and concerns
- Summary and Way Forward 5 minutes
Principles for Sharing

Please…

- Mobile phones turned off or on silent
- All comments are welcome and will be recorded
- Raise a hand if you would like to ask a question
- Clearly introduce yourself
- Speak loudly so that everyone can hear
- Don’t interrupt others
- Please allow for different opinions & different views
- Address all questions / remarks through the facilitator
Purpose of the Meeting

- To share information about the Project
- To enable stakeholders to raise concerns/ questions about the Project
- To provide responses to concerns and questions, where possible
- To inform the public about the EIA process and to ensure that it is relevant and appropriate
Introductions

Air Products South Africa (Pty) Ltd

- Private company formed by a 50/50 joint venture between Air Products, Chemicals INC and Metkor Group Holdings
- Manufactures, supplies and distributes a variety of industrial and specialty gas products and chemicals to the Southern African region

Environmental Resources Management Southern Africa (Pty) Ltd

- Independent environmental and social assessment practitioners appointed to undertake the Environmental Impact Assessment (EIA) Process
- ERM has extensive experience in undertaking EIAs in the Gauteng region
Project Background

- **Existing Acetylene Gas Production Facilities**
  - Located in Pinetown and Kempton Park
  - Operational for > 40 years with aged infrastructure
  - Encroached by other industrial and residential development

- **Proposed Project Plan**
  - Close down these two facilities
  - New state of the art facility and incorporating the latest technology
  - Construct and develop a new facility on a site where the potential risks can be managed
  - The facility is proposed to be constructed in the centre of two properties
Proposed Location - Daleside
Project Site

- Stand 88 and 89 of Valley Settlements Agricultural Holdings – *Air Products have purchased both properties*
- Combined area of the stands is 4.4 ha
- Current Zoning – Industrial 3
- Surrounding land-uses:
  - East: Manufacturing facilities
  - South: Equipment maintenance and storage facilities
  - West: Private
  - North: Manufacturing facilities
  
  *Residential properties have been identified along Lawa, Graniet, Kalksteen and Tillet Roads.*

- Existing site access via Tillet Road (off Springbok Road)
What the proposed projects entails

Presented by:

Barry Little

from

AIR PRODUCTS
Proposed Site Layout

Associated Infrastructure on site:

- Sub station- 11kv
- Generator (mixing of Calcium Carbide and Water)
- Storm Water Management system (separation of clean and dirty water for recycling and reuse)
- Administrative offices (existing house on site)
- Control room
- Maintenance and workshop area
- Chemical storage facility
- Waste Management facility
- Sanitation facilities
- Site boundary fencing
Facility Illustration
Production Process

Exothermic Reaction

Calcium Carbide + Water → Calcium Hydroxide + Acetylene Gas

- Project to be developed in 2 Phases:
  - **Phase 1**: Production capacity of 7200 m³/day (December 2015)
  - **Phase 2**: Total production capacity of 14,400 m³/day (2022)

- Uses: welding and cutting of metals

- Lime (by-product) will be stored on site for collection
Key Project Components

1. Generator Vessel
2. Compressors
3. Driers
3. Cylinder Filling
Social Contribution: Community Integration

- Feeding Scheme at Japie Greyling School
- Japie Greyling School upgrade
- Local job creation (15 construction and 10 operation)
- Tillet Road upgrade
EIA Process

- EIA required under National Environmental Management Act (NEMA) (Act No. 107 of 1998), as amended

- Key Listed Activities in terms of GNR. 545 (2010):
  - (3) 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.
  - (4) The construction of facilities or infrastructure for the refining, extraction or processing of gas, oil or petroleum products with an installed capacity of 50 cubic metres or more per day.
  - (5) The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions...

- Air Emissions Licence (AEL) has been applied for:
  Subcategory 6.1 (Organic Chemical Manufacturing)
Progress with EIA

THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

**APPLICATIONS**
- Application submitted to the GDARD on 06 November 2013 and the reference number was received on 25 November 2013

**SCOPE**
- Site visit and initial public participation conducted between 28 November – 2 December 2013. An open house and public meeting was held on 20 February 2014 at Japie Greyling Primary School.

**THE FINAL SCOPING REPORT**
- The final Scoping Report was submitted to GDARD and approved on 22 May 2014.

**THE FOLLOWING SPECIALIST STUDIES WERE CONDUCTED AS PART OF THE EIA PROCESS**
- Heritage and Archaeology
- Traffic
- Major Hazardous Installation
- Air Quality
- Fauna and Flora (Terrestrial Ecology)

**THE DRAFT EIA REPORT WAS SUBMITTED TO GDARD FOR COMMENT ON 1 JULY 2014**

**THE COMMENT PERIOD HAS COMMENCED AND WILL BE CONDUCTED BETWEEN 01 JULY 2014 – 11 AUGUST 2014. PUBLIC MEETING/OPEN DAY TO TAKE PLACE ON 24 JULY 2014 AT JAPIE GREYLING PRIMARY SCHOOL**
EIA Process

Stakeholder engagement to date…

- Project announcement
  - BID’s, Advertisements, Site Notices

- Scoping Phase –
  - Notification letters to registered stakeholders
  - Draft Scoping Report
  - Public Meeting

- Issues and concerns raised (refer to CRR)
  - Risk of explosion
  - Air Emissions- PWV Airshed Area (including Odour)
  - Heritage concerns
  - Job Creation
  - Water availability
## Specialist Studies

### Biological Studies
- Fauna and Flora (Terrestrial Ecology)

### Physical Studies
- Air Quality
- Site Traffic
- Heritage and Archaeology
- Major Hazardous Installation
# Impacts raised by Specialists

## POTENTIAL ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

The likely aspects arising from the key Project activities and their interaction with socio-economic and environmental resources/receptors:

<table>
<thead>
<tr>
<th>Element</th>
<th>Potential Impacts Identified by Specialists</th>
</tr>
</thead>
</table>
| Soils and Geology            | • Compaction of soil  
                                 | • Contamination from accidental spills  
                                 | • Erosion due to site clearance                                                                 |
| Water Resources              | • Unmanaged hydrocarbon spills may lead to groundwater contamination                                        |
| Flora and Fauna              | • Loss of habitat  
                                 | • Displacement of faunal species and fragmentation of habitat  
                                 | • Impact on sensitive red data species *Boophane disticha* (relocation of species to SW portion of property) |
| Air Quality                  | • Negligible emissions of acetylene gas, SO2, NO2, VOC’s and Acetone.  
                                 | • Small increase in dust and particulates (PM\textsubscript{10}) emissions.                               |
| Traffic and Transport        | • Increased heavy vehicle traffic:  
                                 | ◦ During construction—transportation of equipment and construction vehicles;  
                                 | ◦ During operation—delivery of raw materials, and removal of product from site.                        |
| Noise and Vibration          | • The main sources of noise includes manual handling, use of vehicles and compressors and pumps. Impacts are likely to be minimal due to the existing industrial landscape |

<table>
<thead>
<tr>
<th>Element</th>
<th>Potential Impacts Identified by Specialists</th>
</tr>
</thead>
</table>
| Heritage/Archaeology         | • No impact to features of cultural heritage value (none found to date)  
                                 | • SAHRA approval received on 19 February 2014                                                             |
| Waste                        | • Unmanaged waste may cause pollution of the site and adjacent properties:  
                                 | ◦ Construction waste, including domestic waste, scrap metals, paints and chemicals.  
                                 | ◦ General waste from workers during operational phase;  
                                 | ◦ Hazardous wastes during operational phase including the production process, including: chemicals and paints, scrap cylinders and spent solvents / acids. |
| Unplanned Events             | • Explosion on-site  
                                 | • Accidental release / spills of hazardous substances                                                   |
| Socio-economic environment   | • Positive impact through job creation  
                                 | ◦ Temporary work—15 workers (construction phase).  
                                 | ◦ Permanent work—10 workers (operational phase)                                                          |
### Impact Ratings: Construction

<table>
<thead>
<tr>
<th>Affected Resource/Receptor</th>
<th>Potential Impact</th>
<th>Pre-Mitigation Significance</th>
<th>Post-Mitigation Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil Resources</td>
<td>Disturbance and loss of soil resources</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Increased potential for soil erosion</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Potential PM$_{10}$ emissions</td>
<td>Major</td>
<td>Moderate</td>
</tr>
<tr>
<td>Ambient Noise</td>
<td>Potential increase in noise emissions</td>
<td>Minor</td>
<td>Minor</td>
</tr>
<tr>
<td>Flora</td>
<td>Loss of grassland and floral habitat</td>
<td>Moderate-Minor</td>
<td>Minor</td>
</tr>
<tr>
<td></td>
<td>Potential impact of alien invasive species on remaining grassland</td>
<td>Moderate</td>
<td>Minor</td>
</tr>
<tr>
<td>Fauna</td>
<td>Loss of faunal habitat (Cumulative)</td>
<td>Moderate-Minor</td>
<td>Minor</td>
</tr>
<tr>
<td></td>
<td>Potential sensory disturbance to fauna</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Potential loss of faunal species due to spills</td>
<td>Minor-Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Local Economy</td>
<td>Creation of employment opportunities</td>
<td>Minor (Positive)</td>
<td>Minor (Positive)</td>
</tr>
<tr>
<td></td>
<td>Training and skills development</td>
<td>Minor (Positive)</td>
<td>Minor (Positive)</td>
</tr>
<tr>
<td></td>
<td>Procurement of goods and services</td>
<td>Minor (Positive)</td>
<td>Minor (Positive)</td>
</tr>
<tr>
<td>Heritage/Archaeology/ Palaeontology</td>
<td>Potential impact on Heritage, Archaeological and Paleontological Resources</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Traffic</td>
<td>Potential increase in traffic volumes</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Vehicle accidents</td>
<td>Minor</td>
<td>Minor</td>
</tr>
<tr>
<td>Soil and Groundwater</td>
<td>Accidental spills/leaks from materials</td>
<td>Moderate</td>
<td>Minor</td>
</tr>
<tr>
<td></td>
<td>Accidental spills/leaks from wastes</td>
<td>Moderate</td>
<td>Minor</td>
</tr>
</tbody>
</table>

### Proposed Mitigation

- Attain a Project Air Emissions Licence
- Obtain a permit from the GDARD to translocate the Conservation Important species *(Declining Boophane disticha)* (SW portion of property)
- Ensure compliance to the MHI Regulations – and attain approval from the local authorities
- Develop a Storm Water Management Plan
- Obtain building plan approval from the Midvaal Local Municipality
- Develop a grievance procedure to allow community members to raise concerns and issues relating to the Project
- Develop a On-Site Emergency Plan
- If requested, a detailed dolomite stability investigation will be undertaken
## Impact Ratings: Operation

<table>
<thead>
<tr>
<th>Affected Resource/Receptor</th>
<th>Potential Impact</th>
<th>Pre-Mitigation Significance</th>
<th>Post-Mitigation Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality</td>
<td>Potential PM$_{10}$ emissions</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Potential NO$_2$ emissions (Cumulative)</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Potential SO$_2$ emissions</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Potential Acetone emissions</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Potential Phosphine (PH$_3$) emissions</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Potential VOC emissions (Cumulative)</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Ambient Noise</td>
<td>Potential increase in noise emissions</td>
<td>Moderate</td>
<td>Minor</td>
</tr>
<tr>
<td>Flora</td>
<td>Potential impact of alien invasive species on remaining grassland</td>
<td>Moderate</td>
<td>Minor</td>
</tr>
<tr>
<td>Fauna</td>
<td>Potential sensory disturbance to fauna</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Potential loss of faunal species due to spills</td>
<td>Minor-Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Local Economy</td>
<td>Creation of employment opportunities</td>
<td>Minor (Positive)</td>
<td>Minor (Positive)</td>
</tr>
<tr>
<td></td>
<td>Training and skills development</td>
<td>Minor (Positive)</td>
<td>Minor (Positive)</td>
</tr>
<tr>
<td></td>
<td>Procurement of goods and services</td>
<td>Minor (Positive)</td>
<td>Minor (Positive)</td>
</tr>
<tr>
<td>Heritage/Archaeology/Paleontology</td>
<td>Potential impact on Heritage, Archaeological and Paleontological Resources</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Traffic</td>
<td>Potential increase in traffic volumes</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td></td>
<td>Vehicle accidents</td>
<td>Minor</td>
<td>Minor</td>
</tr>
<tr>
<td>Fire/Explosion</td>
<td>Acetylene generator rupture/failure</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Soil and Groundwater</td>
<td>Accidental spills/leaks from materials</td>
<td>Moderate</td>
<td>Minor</td>
</tr>
<tr>
<td></td>
<td>Accidental spills/leaks from wastes</td>
<td>Moderate</td>
<td>Minor</td>
</tr>
</tbody>
</table>

### Proposed Mitigation

- Adhere to the Project Air Emissions Licence
- Ensure compliance to the MHI Regulations – and attain approval from the local authorities
- Adhere to the Storm water Management Plan
- Develop a grievance procedure to allow community members to raise concerns and issues relating to the Project
- Adhere to the On-Site Emergency Plan
Major Hazard Risk Assessment

- Proposed development considered a Major Hazardous Installation (MHI) under the current MHI Regulations (2001)

- Key findings of MHI Assessment (by ERM):
  - Location Specific Individual Risk
    - Risk is greater to individuals located within the plant (indoors) than outdoors due to potential building collapse on site from potential explosion
    - Minimal risks beyond the boundary of the site
  - Potential offsite effects from overpressures from acetylene explosions

\Zajhbdc02\iap\Projects\0220780 - Air Products EIA - KM\13 Public Participation\11. Public Meeting- EIA\Gary MHI - Part 2.pptx
Open Discussion

Please raise any questions, concerns and/or queries that you may have on the Project and/or the EIA Process…
Way Forward

- Commenting Period on the Draft Environmental Impact Report (DEIR) closes on 11 August 2014
- Incorporate all comments received on the DEIR into the Final Environmental Impact Report (FEIR)
- Release FEIR for Public Review (21 days)
- Submit the FEIR to GDARD

Thank you for your valued participation in this process!