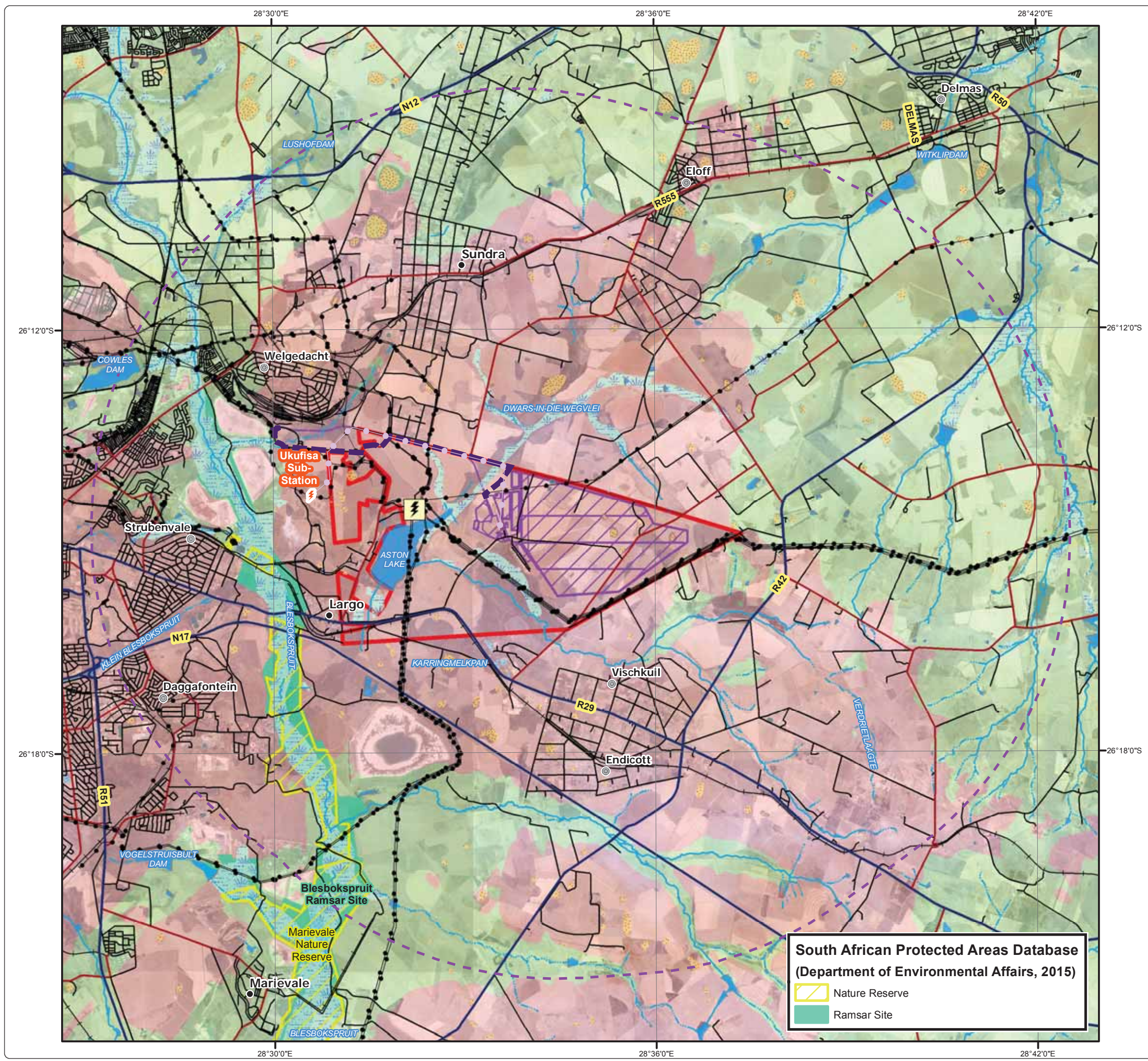


# Palmietkuilen Project EIA Theoretical Viewshed Model

### Legend

- Mining Right Boundary
  - Preferred Power Line Route
  - Preferred Access Road Route
  - Proposed Infrastructure
  - 10km Buffer of Proposed Infrastructure
  - Other Town
  - Settlement
  - Sub-Station
  - Ukufisa Sub-Station
  - Power Line
  - Arterial / National Route
  - Main Road
  - Minor Road
  - Railway Line
  - Non-Perennial Stream
  - Perennial Stream
  - Dam Wall
  - Dam / Lake
  - Wetland
  - Perennial Pan
  - Non-Perennial Pan / Stream
- Theoretical Viewshed Model**
- Not Visible
  - Potentially Visible



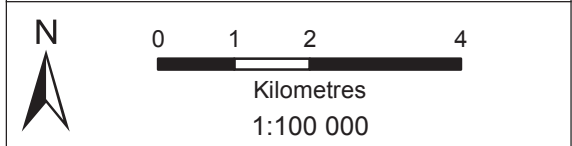
**South African Protected Areas Database  
(Department of Environmental Affairs, 2015)**

- Nature Reserve
- Ramsar Site



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Projection: Transverse Mercator Ref #: meg.CNC4065.201612.089  
 Datum: WGS 1984 Revision Number: 2  
 Central Meridian: 29°E Date: 27/03/2017





# Palmietkuilen Project EIA

## Daytime Practical Viewshed Model

**Receptor Points**

- Very High (57)
- High (497)
- Moderate (944)
- Low (344)
- Very Low (180)

**Receptor Polygons**

- Very High
- High
- Moderate
- Low
- Very Low

Palmetkuil South War Cemetery Memorial

**Legend**

- Mining Right Boundary
- Preferred Power Line Route
- Preferred Access Road Route
- Proposed Infrastructure
- 10km Buffer of Proposed Infrastructure
- Other Town
- Settlement
- Sub-Station
- Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream

**Daytime Practical Viewshed Model**

- 0 - 2 km: Potentially Very High Visual Exposure
- 2 - 4 km: Potentially High Visual Exposure
- 4 - 6 km: Potentially Moderate Visual Exposure
- 6 - 8 km: Potentially Low Visual Exposure
- 8 - 10 km: Potentially Very Low Visual Exposure

**South African Protected Areas Database (Department of Environmental Affairs, 2015)**

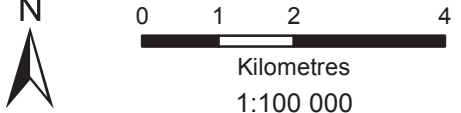
- Nature Reserve
- Ramsar Site



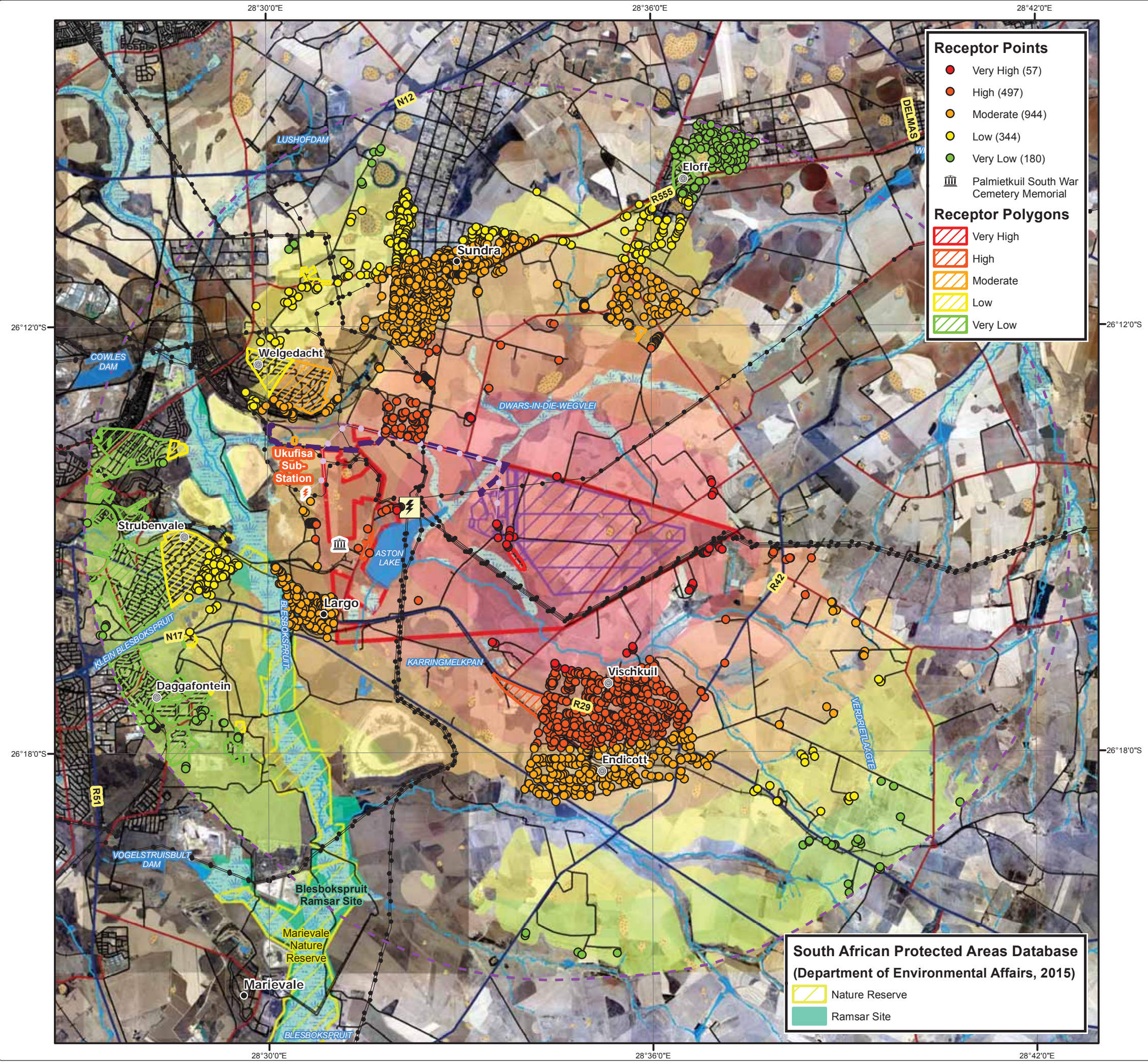
**DIGBY WELLS ENVIRONMENTAL**

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Projection: Transverse Mercator Ref #: meg.CNC4065.201612.090  
 Datum: WGS 1984 Revision Number: 2  
 Central Meridian: 29°E Date: 27/03/2017



Kilometres  
1:100 000





# Palmietkuilen Project EIA

## Night Time Practical Viewshed Model

**Receptor Points**

- High (554)
- Moderate (1288)
- Low (180)
- Palmietkuil South War Cemetery Memorial

**Receptor Polygons**

- High
- Moderate
- Low

**Legend**

- Mining Right Boundary
- Preferred Power Line Route
- Preferred Access Road Route
- Proposed Infrastructure
- 10km Buffer of Proposed Infrastructure
- Other Town
- Settlement
- Sub-Station
- Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream

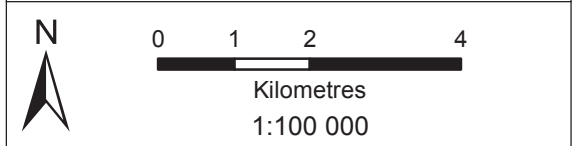
**Night Time Practical Viewshed Model**

- 0 - 4 km: Potentially High Visual Exposure
- 4 - 8 km: Potentially Moderate Visual Exposure
- 8 - 10 km: Potentially Low Visual Exposure



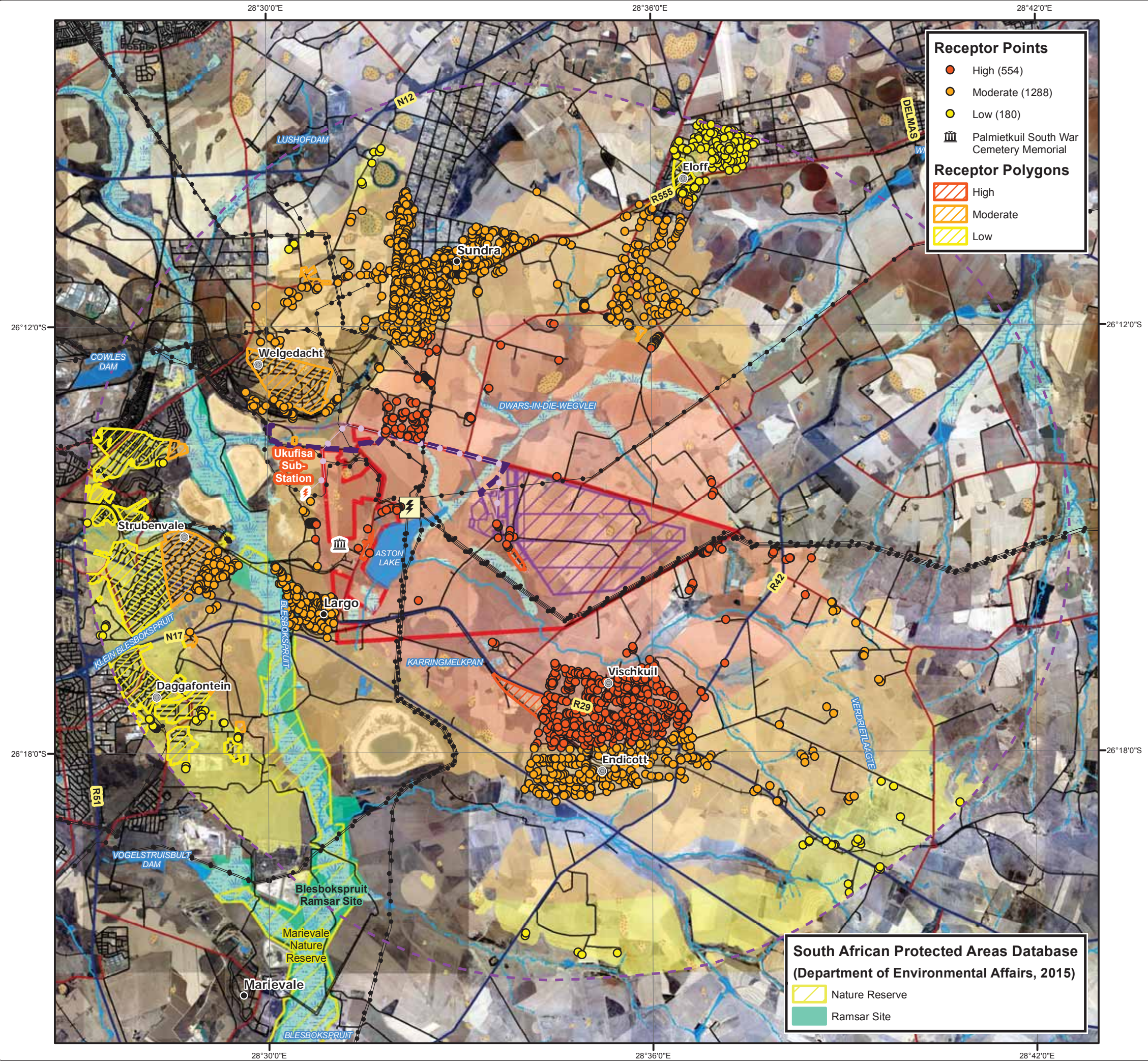
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Projection: Transverse Mercator Ref #: meg.CNC4065.201612.126  
 Datum: WGS 1984 Revision Number: 2  
 Central Meridian: 29°E Date: 27/03/2017



**South African Protected Areas Database (Department of Environmental Affairs, 2015)**

- Nature Reserve
- Ramsar Site





# Palmietkuilen Project EIA

## Identified Heritage Resources

### Legend

- Mining Right Boundary
- Other Town
- Settlement
- ⚡ Sub-Station
- ⚡ Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Track
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall

- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream

### Identified Heritage Resource

- Archaeological - LFC
- ⦿ Burial Grounds & Graves
- Historical Built Environment
- Public Monument and Memorial
- Historical Built Environment

### Proposed Infrastructure

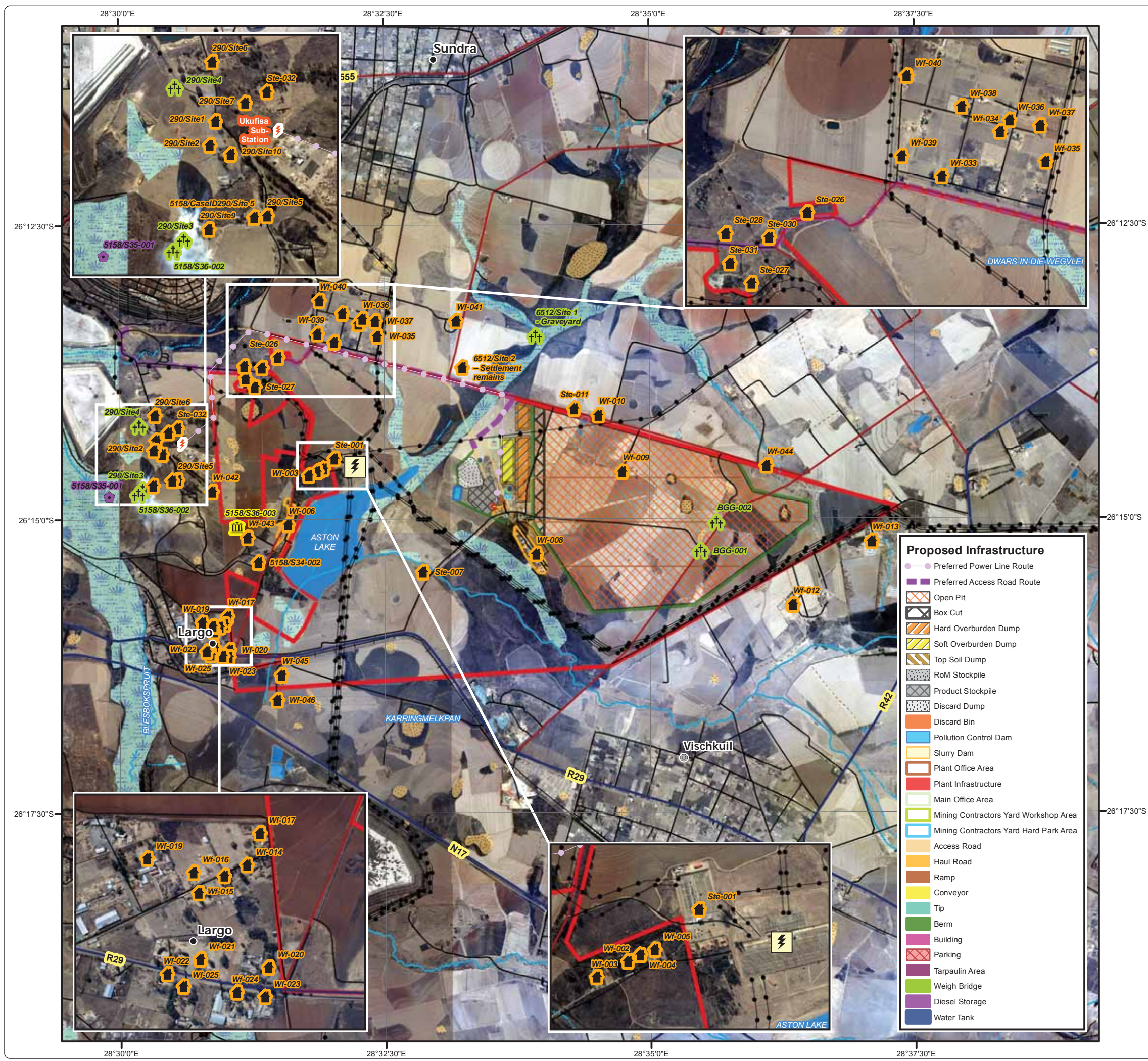
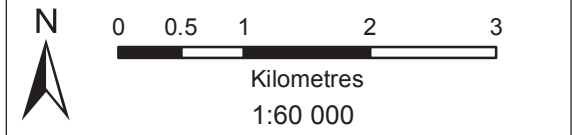
- Preferred Power Line Route
- Preferred Access Road Route
- Open Pit
- Box Cut
- Hard Overburden Dump
- Soft Overburden Dump
- Top Soil Dump
- RoM Stockpile
- Product Stockpile
- Discard Dump
- Discard Bin
- Pollution Control Dam
- Slurry Dam
- Plant Office Area
- Plant Infrastructure
- Main Office Area
- Mining Contractors Yard Workshop Area
- Mining Contractors Yard Hard Park Area
- Access Road
- Haul Road
- Ramp
- Conveyor
- Tip
- Berm
- Building
- Parking
- Tarpaulin Area
- Weigh Bridge
- Diesel Storage
- Water Tank



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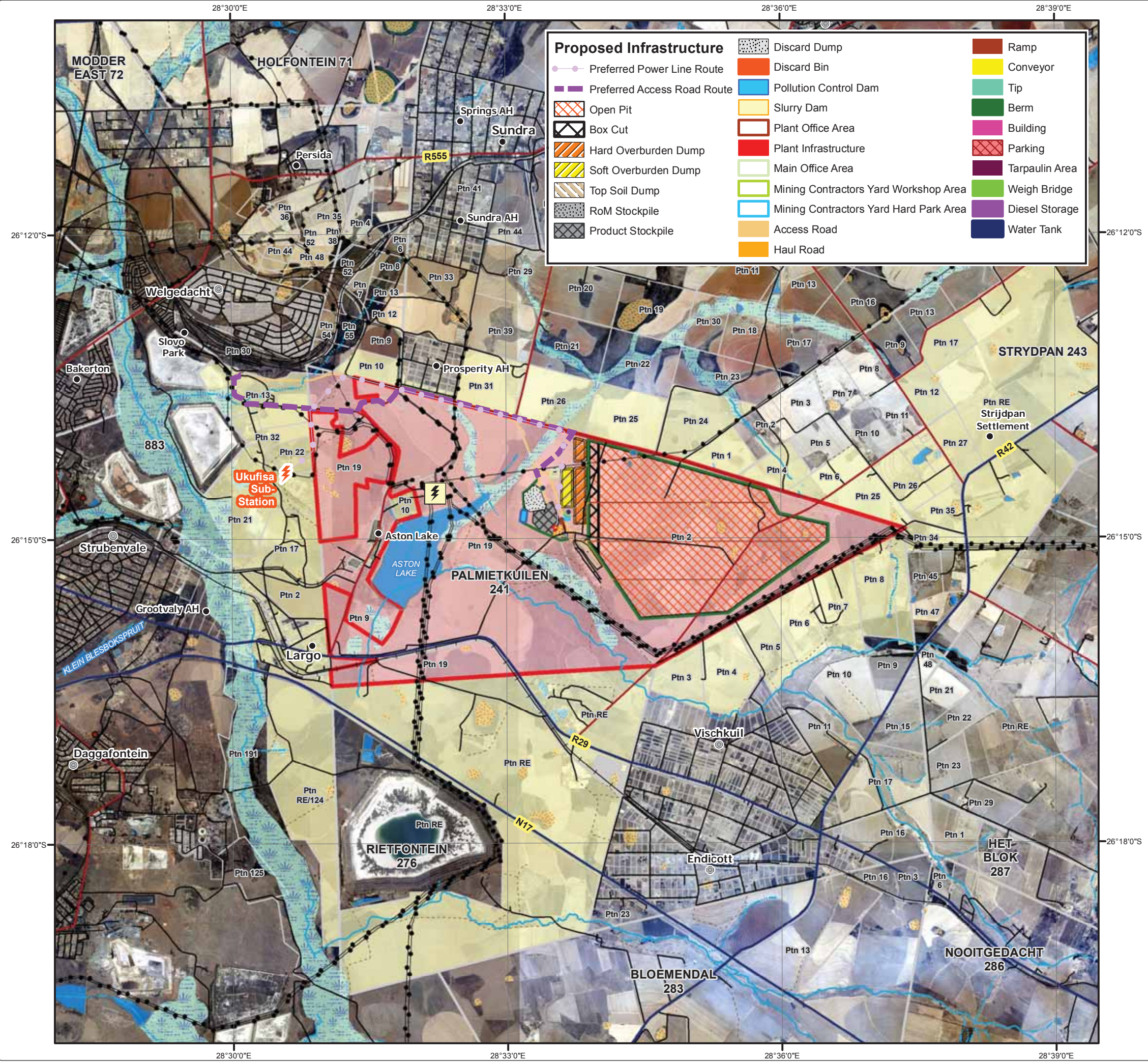
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 Datum: WGS 1984      Revision Number: 5  
 Central Meridian: 29°E      Date: 24/03/2017





# Palmietkuilen Project EIA

## Primary Study Area



Proposed Infrastructure	
Preferred Power Line Route	Discard Dump
Preferred Access Road Route	Discard Bin
Open Pit	Pollution Control Dam
Box Cut	Slurry Dam
Hard Overburden Dump	Plant Office Area
Soft Overburden Dump	Plant Infrastructure
Top Soil Dump	Main Office Area
RoM Stockpile	Mining Contractors Yard Workshop Area
Product Stockpile	Mining Contractors Yard Hard Park Area
	Access Road
	Haul Road
	Ramp
	Conveyor
	Tip
	Berm
	Building
	Parking
	Tarpaulin Area
	Weigh Bridge
	Diesel Storage
	Water Tank

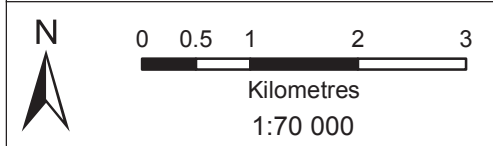
### Legend

- Mining Right Boundary
- Other Town
- Settlement
- Sub-Station
- Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Track
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream
- Farm Boundary
- Farm Portion
- Affected Farm Portions**
- Directly Affected
- Indirectly Affected



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Projection: Transverse Mercator Ref #: meg.CNC4065.201610.176  
 Datum: WGS 1984 Revision Number: 2  
 Central Meridian: 29°E Date: 28/03/2017

















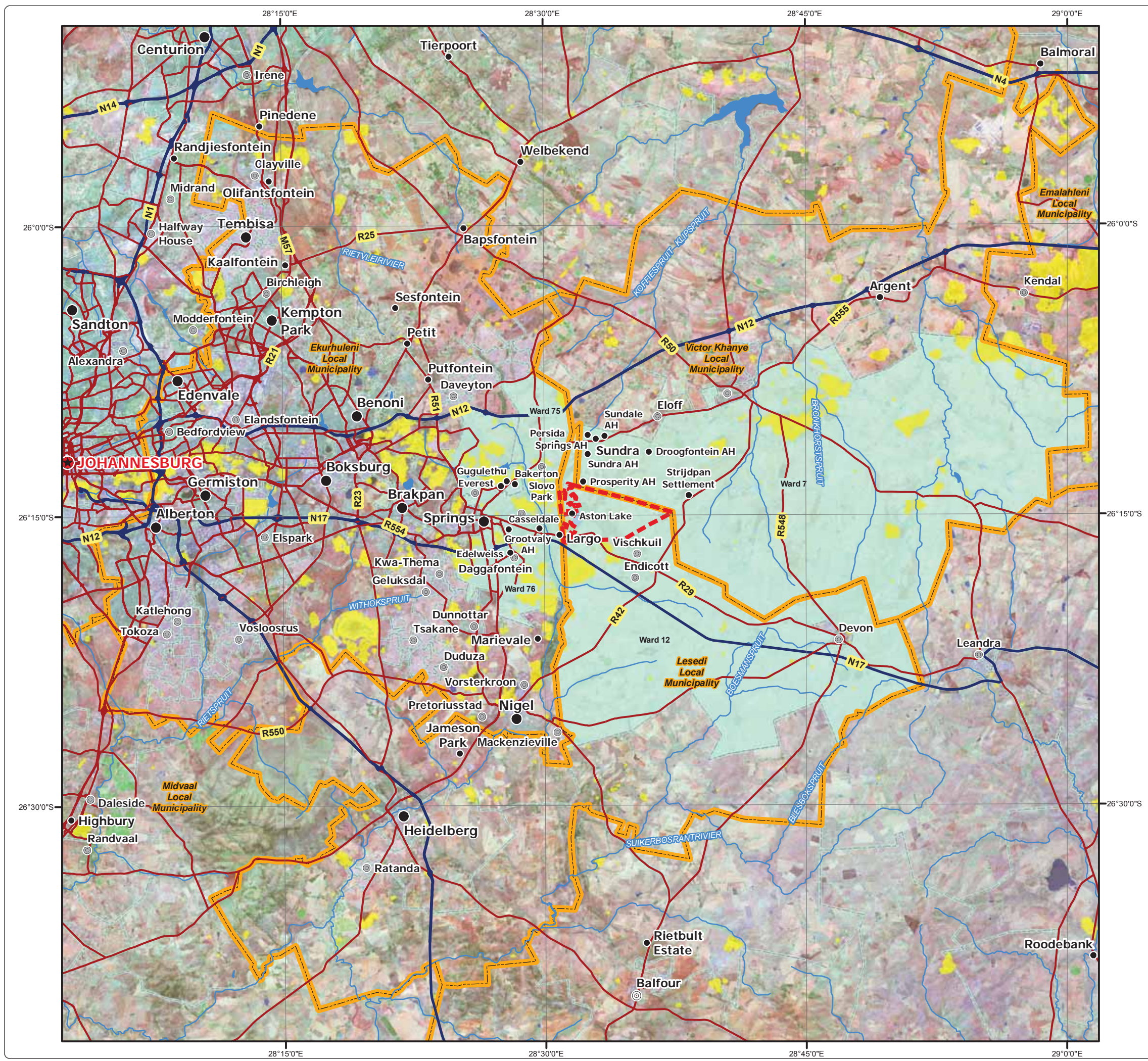


# Palmietkuilen Project EIA

## Secondary Study Area

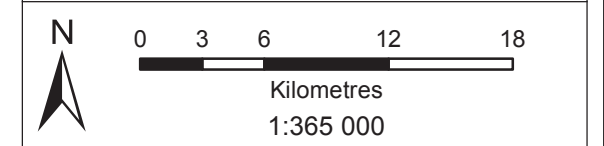
### Legend

-  Mining Right Boundary
-  City
-  Major Town
-  Secondary Town
-  Other Town
-  Settlement
-  Main Road
-  Arterial / National Route
-  Perennial Stream
-  Dam
-  Local Municipal Boundary (2016)
-  Ward Boundary (2016)
-  Secondary Study Area
-  Mining Infrastructure



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Projection: Transverse Mercator Ref #: meg.CNC4065.201610.175  
 Datum: WGS 1984 Revision Number: 2  
 Central Meridian: 29°E Date: 28/03/2017





# Palmietkuilen Project EIA

## Land Ownership Plan

### Proposed Infrastructure

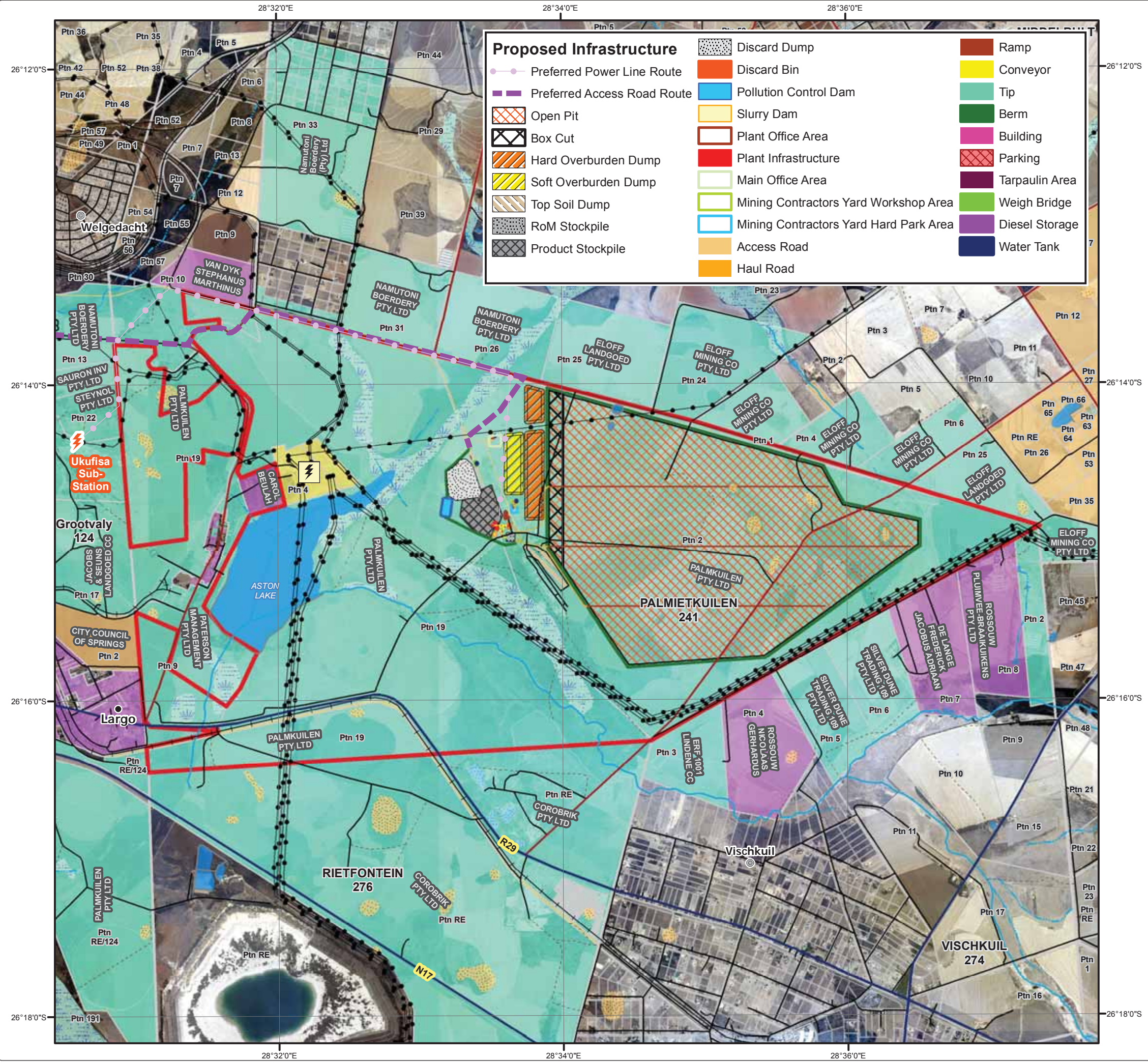
	Preferred Power Line Route		Discard Dump		Ramp
	Preferred Access Road Route		Discard Bin		Conveyor
	Open Pit		Pollution Control Dam		Tip
	Box Cut		Slurry Dam		Berm
	Hard Overburden Dump		Plant Office Area		Building
	Soft Overburden Dump		Plant Infrastructure		Parking
	Top Soil Dump		Main Office Area		Tarpaulin Area
	RoM Stockpile		Mining Contractors Yard Workshop Area		Weigh Bridge
	Product Stockpile		Mining Contractors Yard Hard Park Area		Diesel Storage
			Access Road		Water Tank
			Haul Road		

### Legend

- Mining Right Boundary
- Other Town
- Settlement
- Sub-Station
- Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Track
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream
- Farm Boundary
- Farm Portion

### Land Ownership

- Government Entity
- Parastatal Entity
- Private Company
- Private Person



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Projection: Transverse Mercator      Ref #: meg.CNC4065.201607.013  
 Datum: WGS 1984      Revision Number: 2  
 Central Meridian: 29°E      Date: 28/03/2017

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# Palmietkuilen Project EIA Groundwater Sensitivity Plan

**Groundwater Sensitivity**

- 5 m Drawdown Limit
- 1 % Contamination Limit

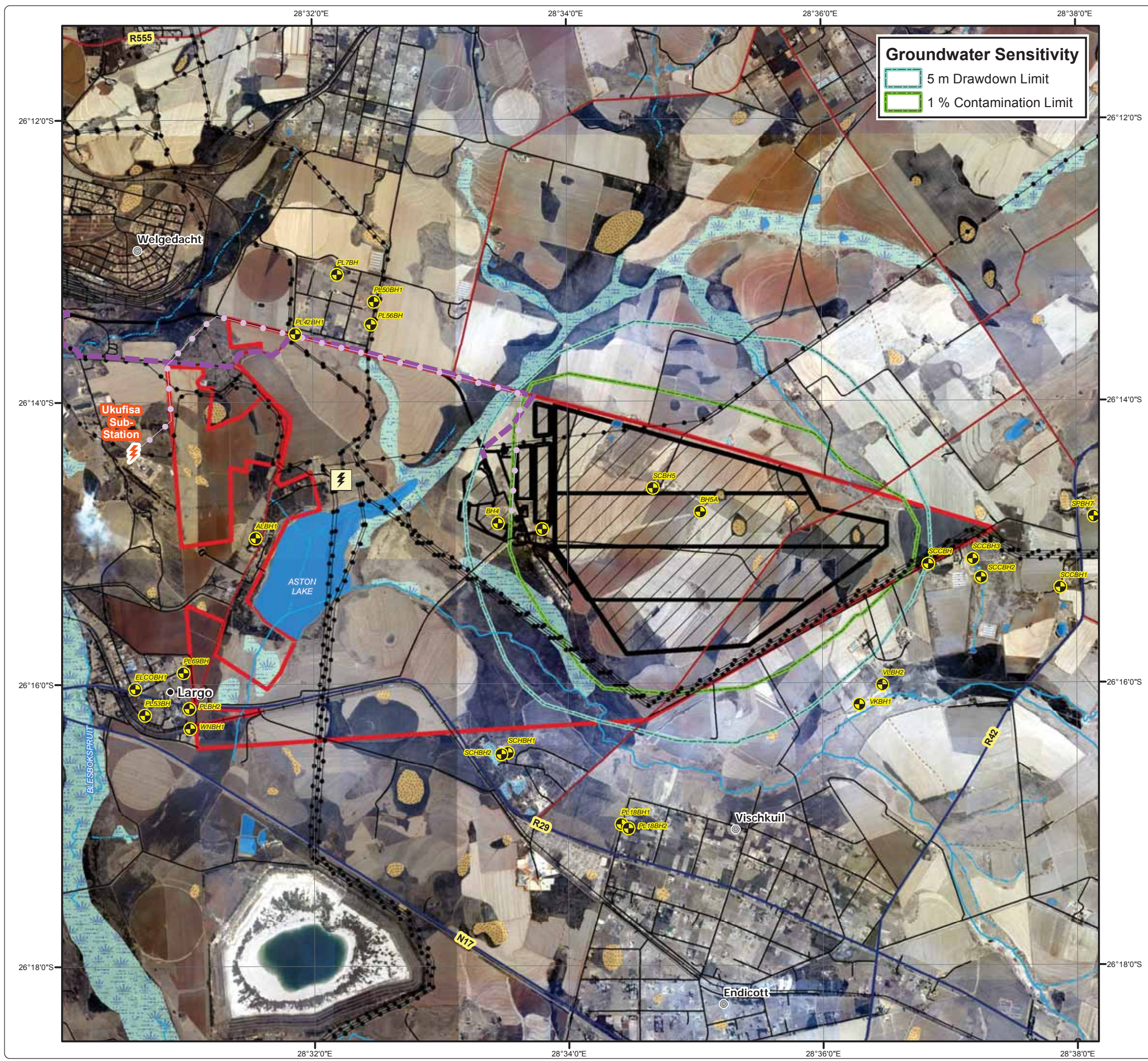
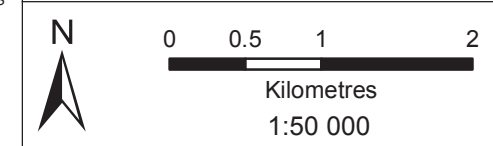
### Legend

- Mining Right Boundary
- Preferred Power Line Route
- Preferred Access Road Route
- Infrastructure Footprint
- Receptor
- Other Town
- Settlement
- Sub-Station
- Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Track
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream



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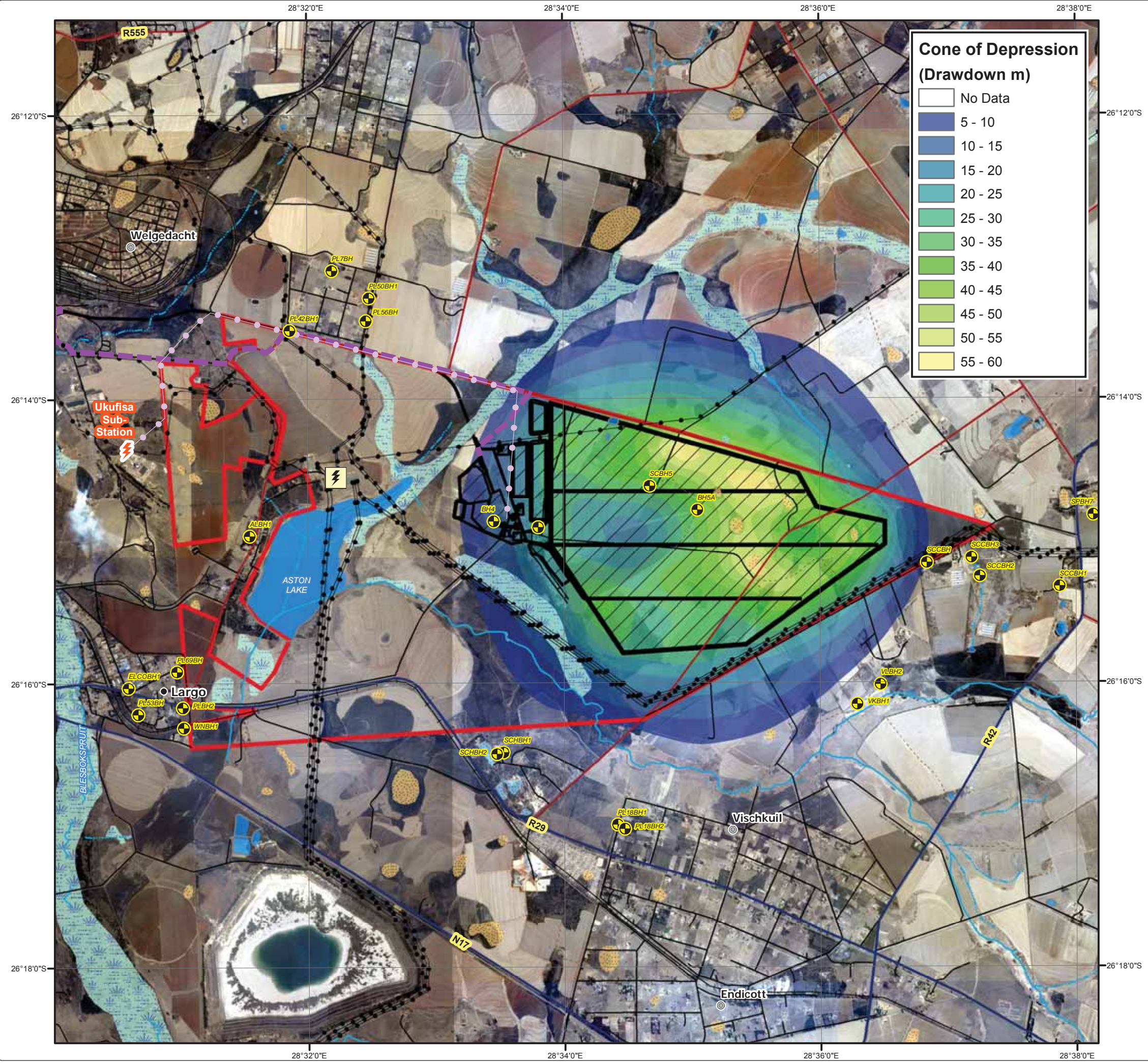
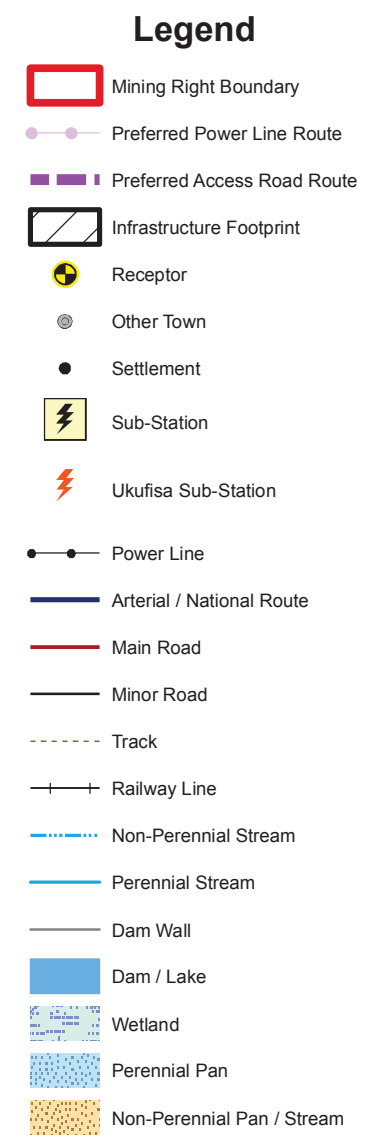
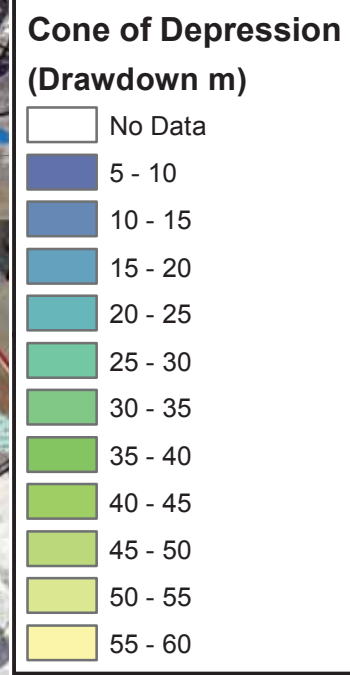
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 Datum: WGS 1984      Revision Number: 1  
 Central Meridian: 29°E      Date: 28/03/2017



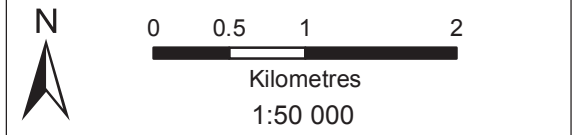


# Palmietkuilen Project EIA

## Cone of Depression (End of Operation)

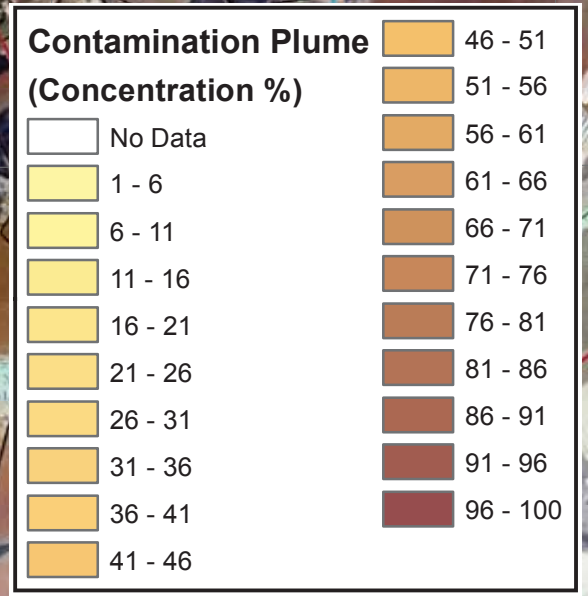


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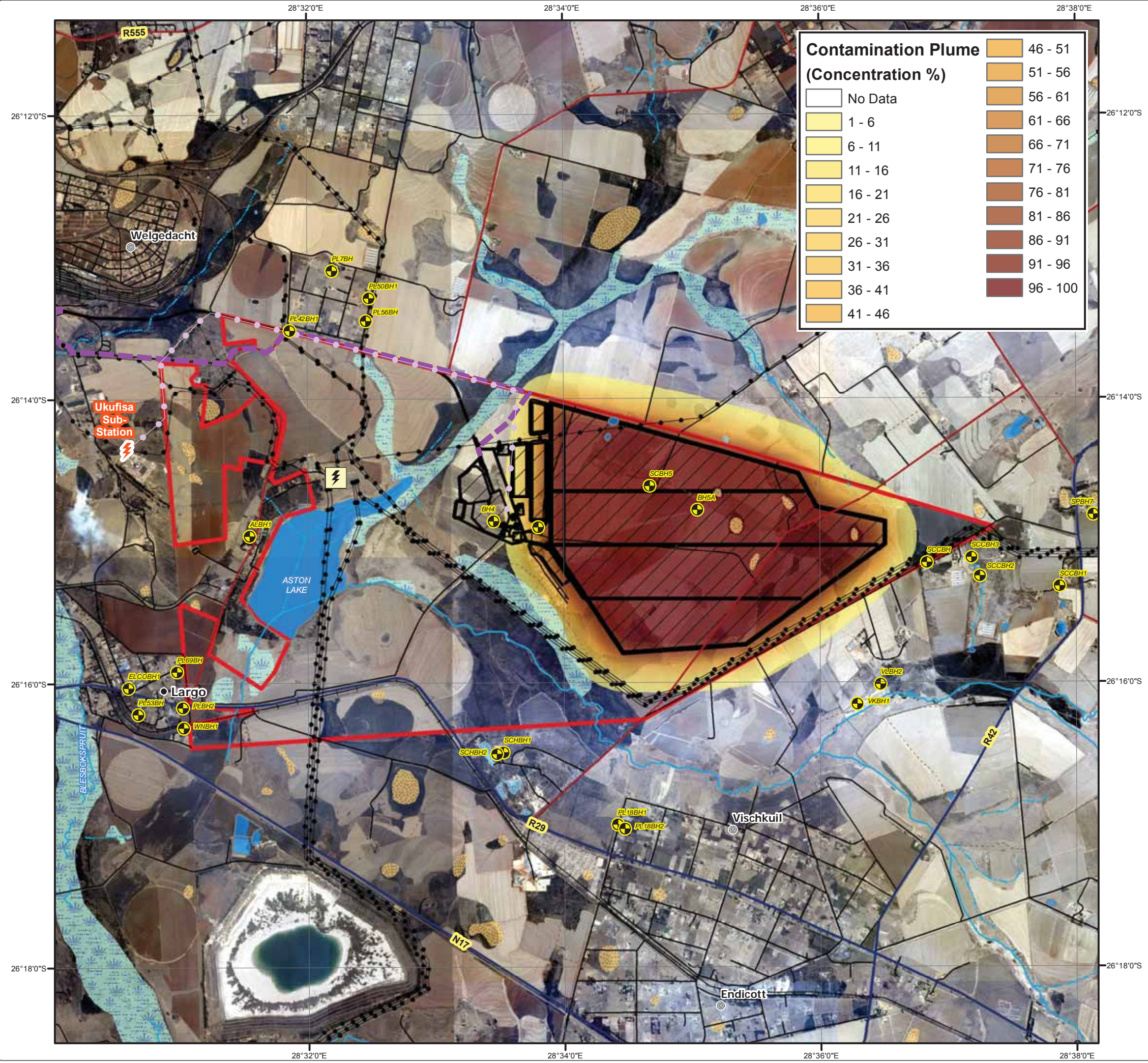




# Palmietkuilen Project EIA Contamination Plume (100 Years After Closure)

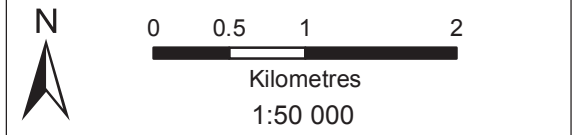


- ### Legend
- Mining Right Boundary
  - Preferred Power Line Route
  - Preferred Access Road Route
  - Infrastructure Footprint
  - Receptor
  - Other Town
  - Settlement
  - Sub-Station
  - Ukufisa Sub-Station
  - Power Line
  - Arterial / National Route
  - Main Road
  - Minor Road
  - Track
  - Railway Line
  - Non-Perennial Stream
  - Perennial Stream
  - Dam / Lake
  - Wetland
  - Perennial Pan
  - Non-Perennial Pan / Stream



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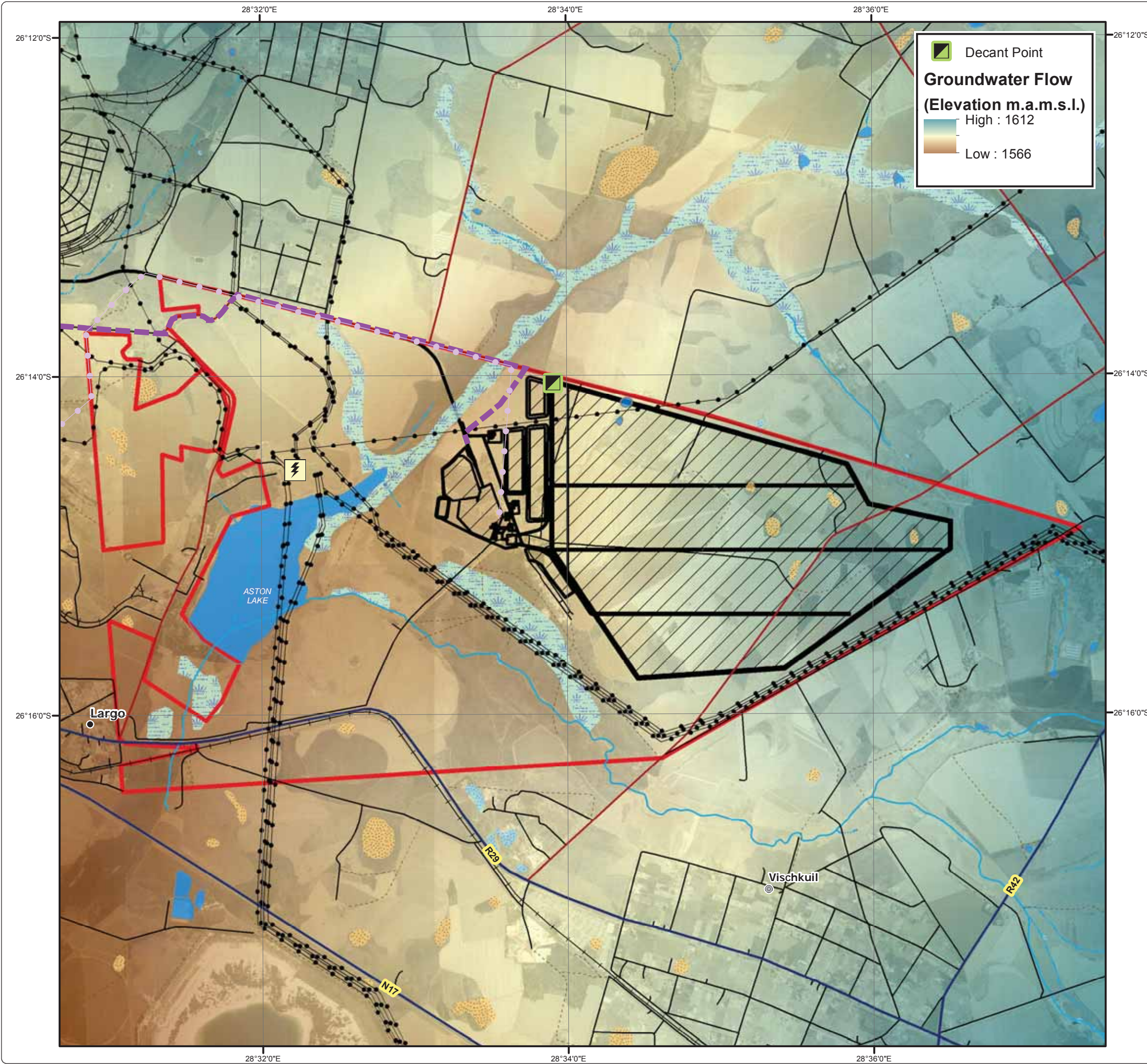
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 Datum: WGS 1984      Revision Number: 1  
 Central Meridian: 29°E      Date: 28/03/2017





# Palmietkuilen Project EIA

## Decant Point



**Decant Point**

**Groundwater Flow**  
(Elevation m.a.m.s.l.)

High : 1612

Low : 1566

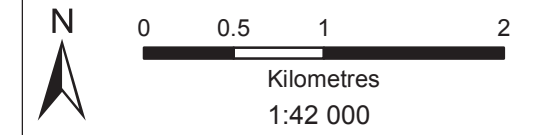
### Legend

- Mining Right Boundary
- Preferred Power Line Route
- Preferred Access Road Route
- Infrastructure Footprint
- Other Town
- Settlement
- Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Track
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream



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Projection: Transverse Mercator      Ref #: meg.CNC4065.201702.159  
 Datum: WGS 1984                              Revision Number: 1  
 Central Meridian: 29°E                        Date: 28/03/2017





# Palmietkuilen Project EIA Wetland Impact Assessment

## Legend

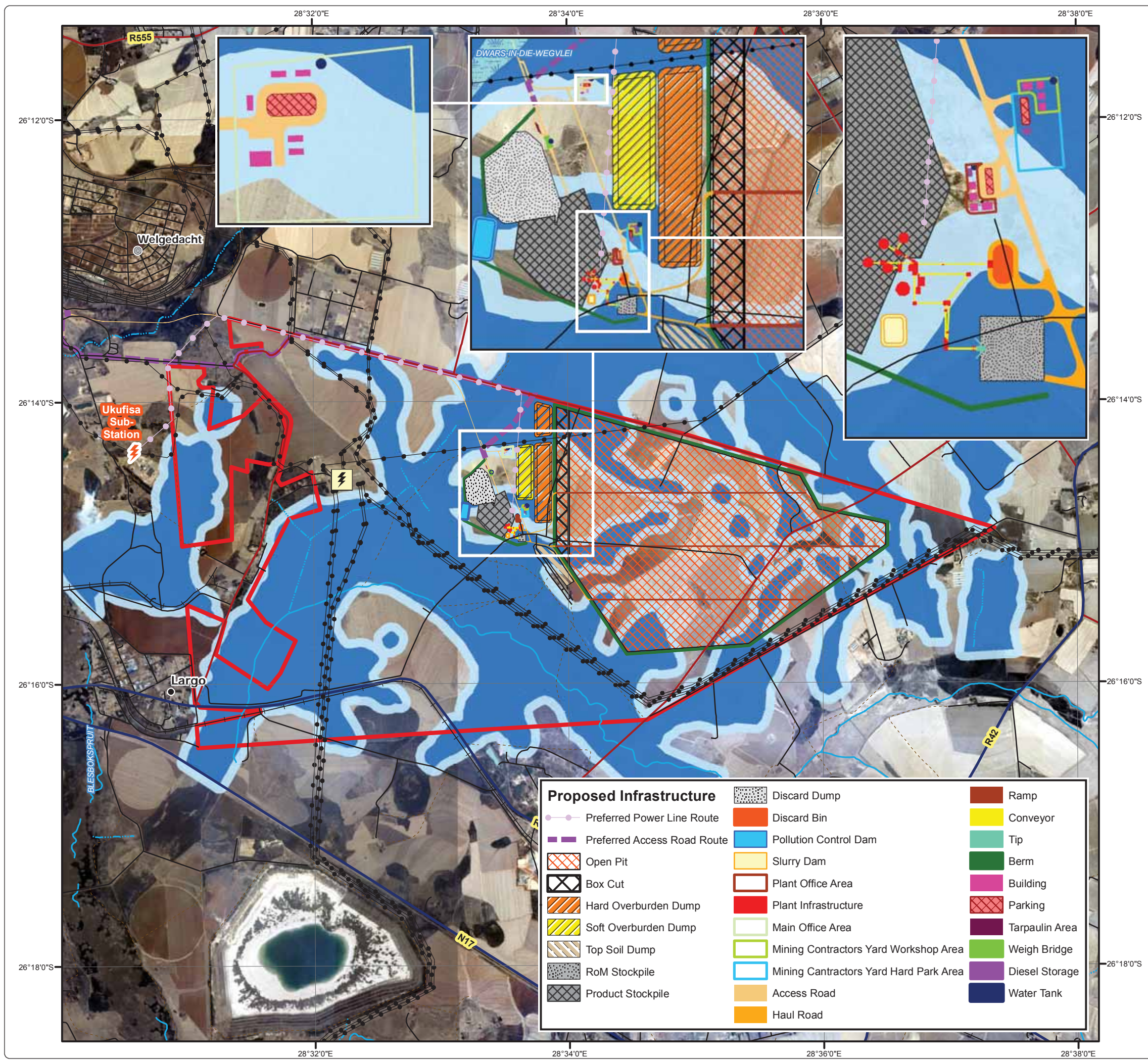
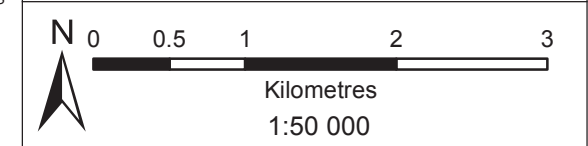
- Mining Right Boundary
- Other Town
- Settlement
- ⚡ Sub-Station
- ⚡ Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Track
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Wetland Delineation
- 100 m Wetland Buffer

Proposed Infrastructure		
<span style="border-bottom: 1px dashed purple; width: 20px; margin-right: 5px;"></span> Preferred Power Line Route	<span style="background-color: grey; width: 20px; height: 10px; margin-right: 5px;"></span> Discard Dump	<span style="background-color: brown; width: 20px; height: 10px; margin-right: 5px;"></span> Ramp
<span style="border-bottom: 1px dashed purple; width: 20px; margin-right: 5px;"></span> Preferred Access Road Route	<span style="background-color: orange; width: 20px; height: 10px; margin-right: 5px;"></span> Discard Bin	<span style="background-color: yellow; width: 20px; height: 10px; margin-right: 5px;"></span> Conveyor
<span style="border: 1px dashed orange; width: 20px; height: 10px; margin-right: 5px;"></span> Open Pit	<span style="background-color: cyan; width: 20px; height: 10px; margin-right: 5px;"></span> Pollution Control Dam	<span style="background-color: lightgreen; width: 20px; height: 10px; margin-right: 5px;"></span> Tip
<span style="border: 1px dashed black; width: 20px; height: 10px; margin-right: 5px;"></span> Box Cut	<span style="background-color: yellow; width: 20px; height: 10px; margin-right: 5px;"></span> Slurry Dam	<span style="background-color: green; width: 20px; height: 10px; margin-right: 5px;"></span> Berm
<span style="background-color: orange; width: 20px; height: 10px; margin-right: 5px;"></span> Hard Overburden Dump	<span style="border: 1px solid red; width: 20px; height: 10px; margin-right: 5px;"></span> Plant Office Area	<span style="background-color: pink; width: 20px; height: 10px; margin-right: 5px;"></span> Building
<span style="background-color: yellow; width: 20px; height: 10px; margin-right: 5px;"></span> Soft Overburden Dump	<span style="background-color: red; width: 20px; height: 10px; margin-right: 5px;"></span> Plant Infrastructure	<span style="background-color: purple; width: 20px; height: 10px; margin-right: 5px;"></span> Parking
<span style="background-color: grey; width: 20px; height: 10px; margin-right: 5px;"></span> Top Soil Dump	<span style="border: 1px solid green; width: 20px; height: 10px; margin-right: 5px;"></span> Main Office Area	<span style="background-color: darkpurple; width: 20px; height: 10px; margin-right: 5px;"></span> Tarpaulin Area
<span style="background-color: grey; width: 20px; height: 10px; margin-right: 5px;"></span> RoM Stockpile	<span style="border: 1px solid green; width: 20px; height: 10px; margin-right: 5px;"></span> Mining Contractors Yard Workshop Area	<span style="background-color: lightgreen; width: 20px; height: 10px; margin-right: 5px;"></span> Weigh Bridge
<span style="background-color: grey; width: 20px; height: 10px; margin-right: 5px;"></span> Product Stockpile	<span style="border: 1px solid blue; width: 20px; height: 10px; margin-right: 5px;"></span> Mining Contractors Yard Hard Park Area	<span style="background-color: purple; width: 20px; height: 10px; margin-right: 5px;"></span> Diesel Storage
	<span style="background-color: orange; width: 20px; height: 10px; margin-right: 5px;"></span> Access Road	<span style="background-color: blue; width: 20px; height: 10px; margin-right: 5px;"></span> Water Tank
	<span style="background-color: yellow; width: 20px; height: 10px; margin-right: 5px;"></span> Haul Road	



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Projection: Transverse Mercator Ref #: meg.CNC4065.201611.041  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017








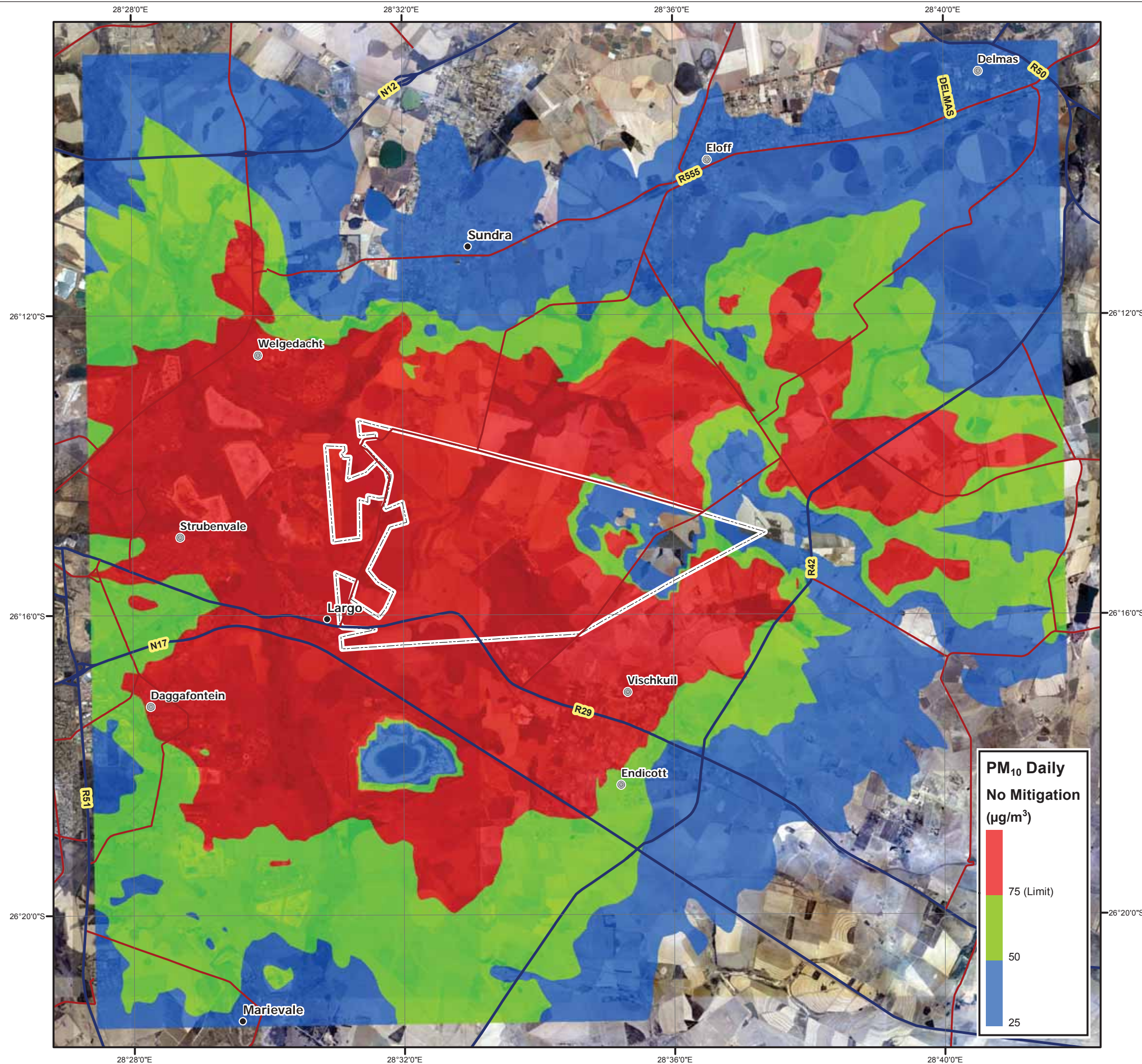


# Palmietkuilen Project EIA

## PM<sub>10</sub> Daily No Mitigation

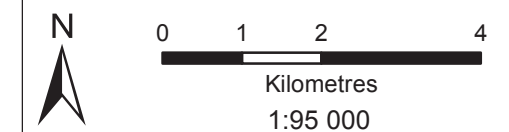
### Legend

-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road



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Projection: Transverse Mercator Ref #: meg.CNC4065.201612.114  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017












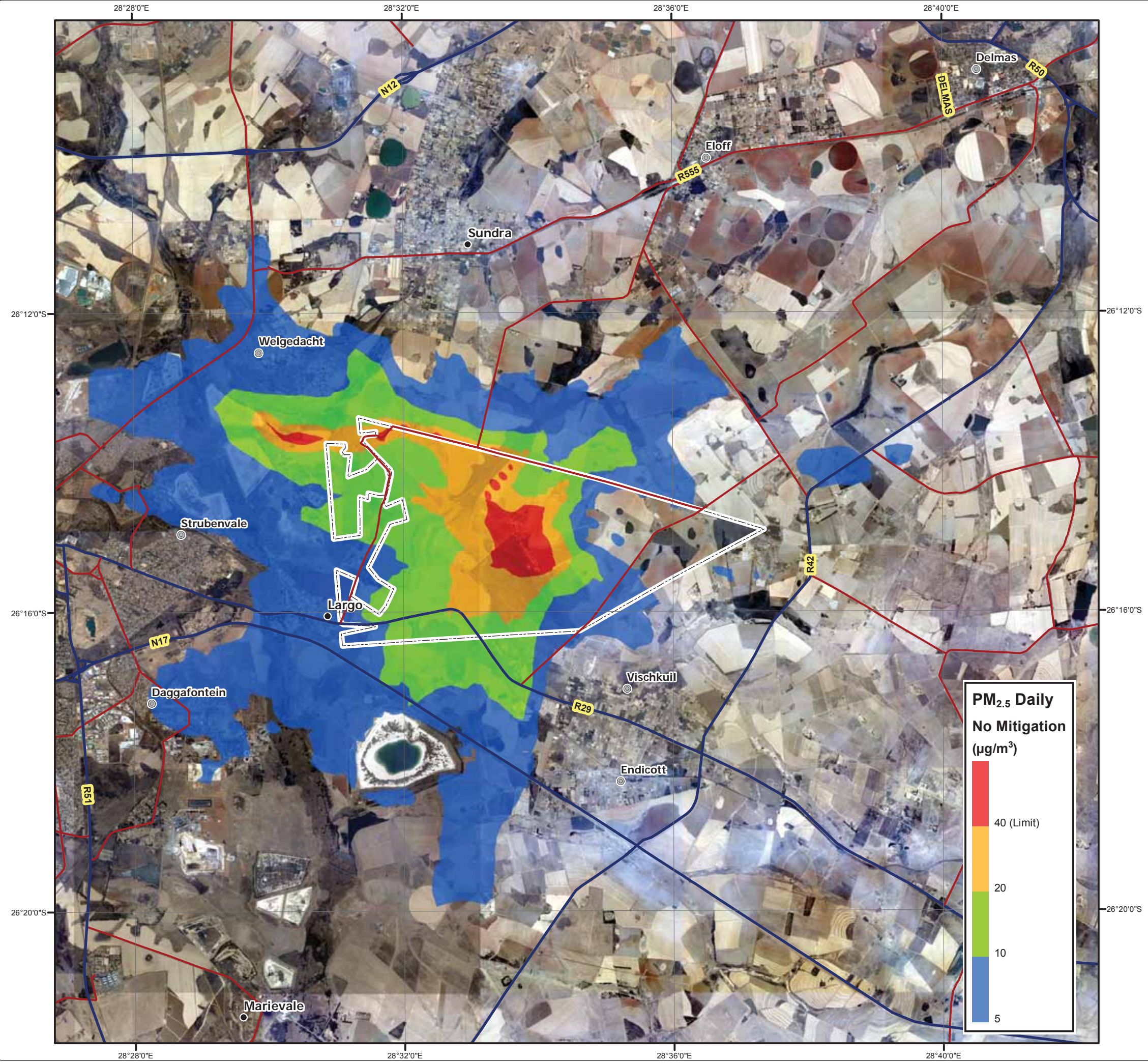
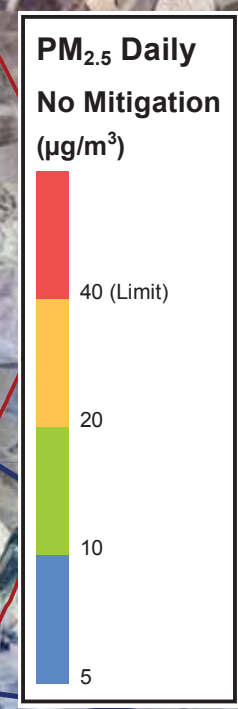


# Palmietkuilen Project EIA

## PM<sub>2.5</sub> Daily No Mitigation

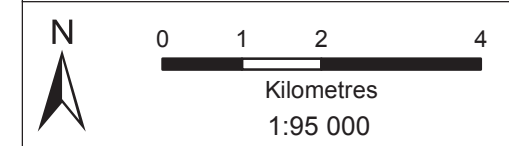
### Legend

-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road



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Projection: Transverse Mercator Ref #: meg.CNC4065.201612.121  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017








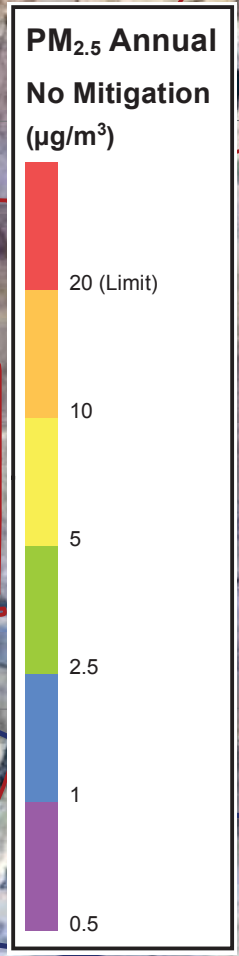
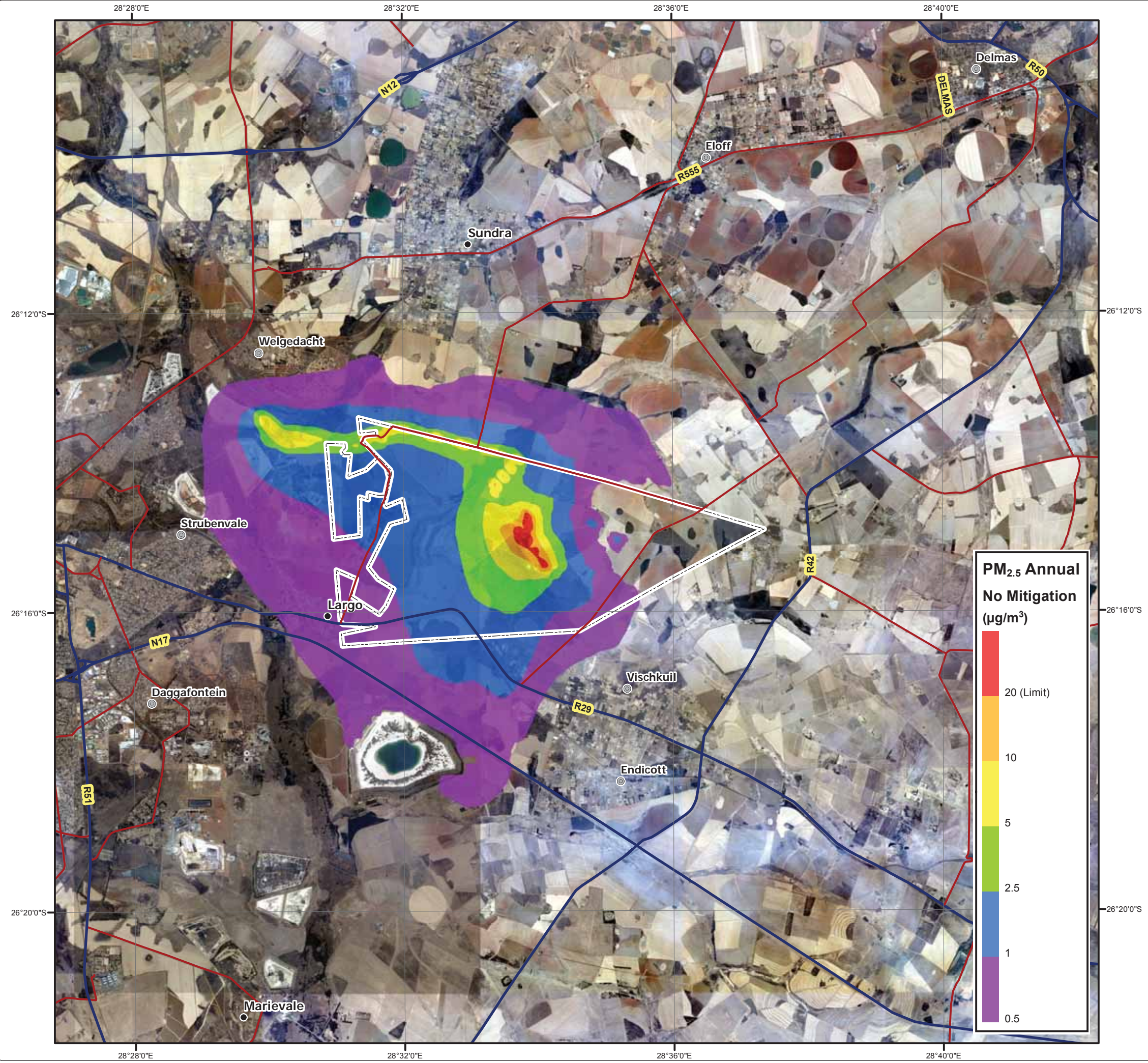


# Palmietkuilen Project EIA

## PM<sub>2.5</sub> Annual No Mitigation

### Legend

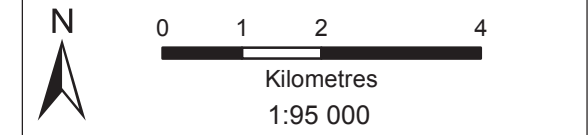
-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road



  
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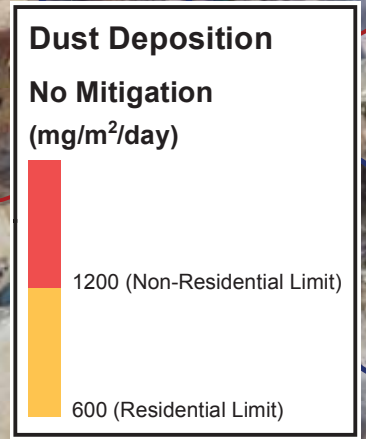
• Sustainability • Service • Positive Change • Professionalism • Future Focused • Integrity

Projection: Transverse Mercator      Ref #: meg.CNC4065.201612.119  
 Datum: WGS 1984                              Revision Number: 1  
 Central Meridian: 29°E                        Date: 28/03/2017



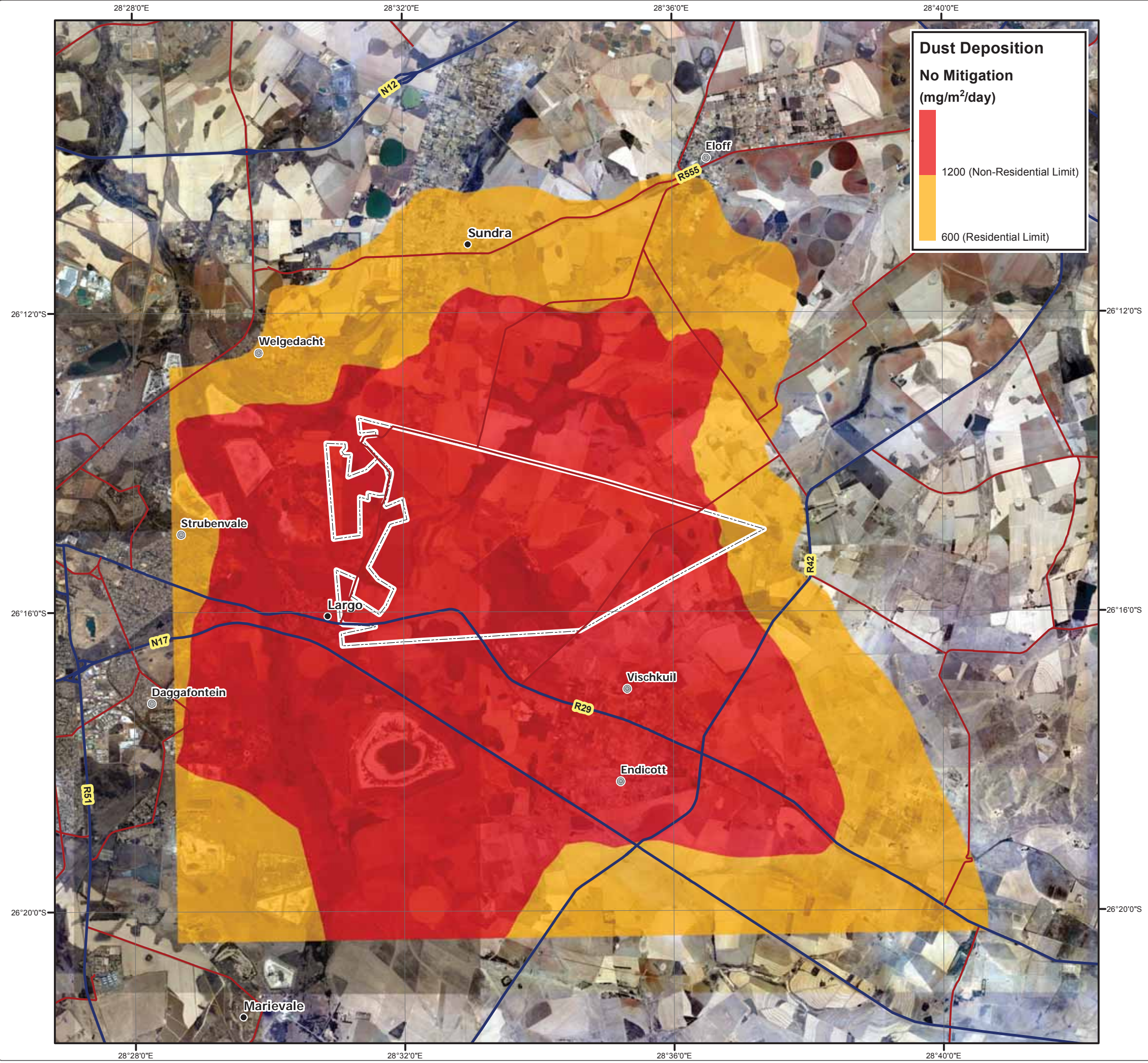


# Palmietkuilen Project EIA Dust Deposition No Mitigation



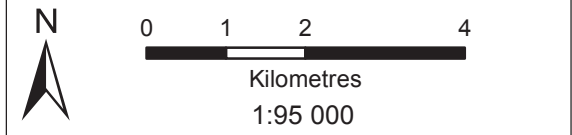
## Legend

- Mining Right Boundary
- Other Town
- Settlement
- Arterial / National Route
- Main Road



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Projection: Transverse Mercator Ref #: scm.CNC4065.201701.008  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017










# Palmietkuilen Project EIA

## PM<sub>10</sub> Daily With Mitigation

### Legend

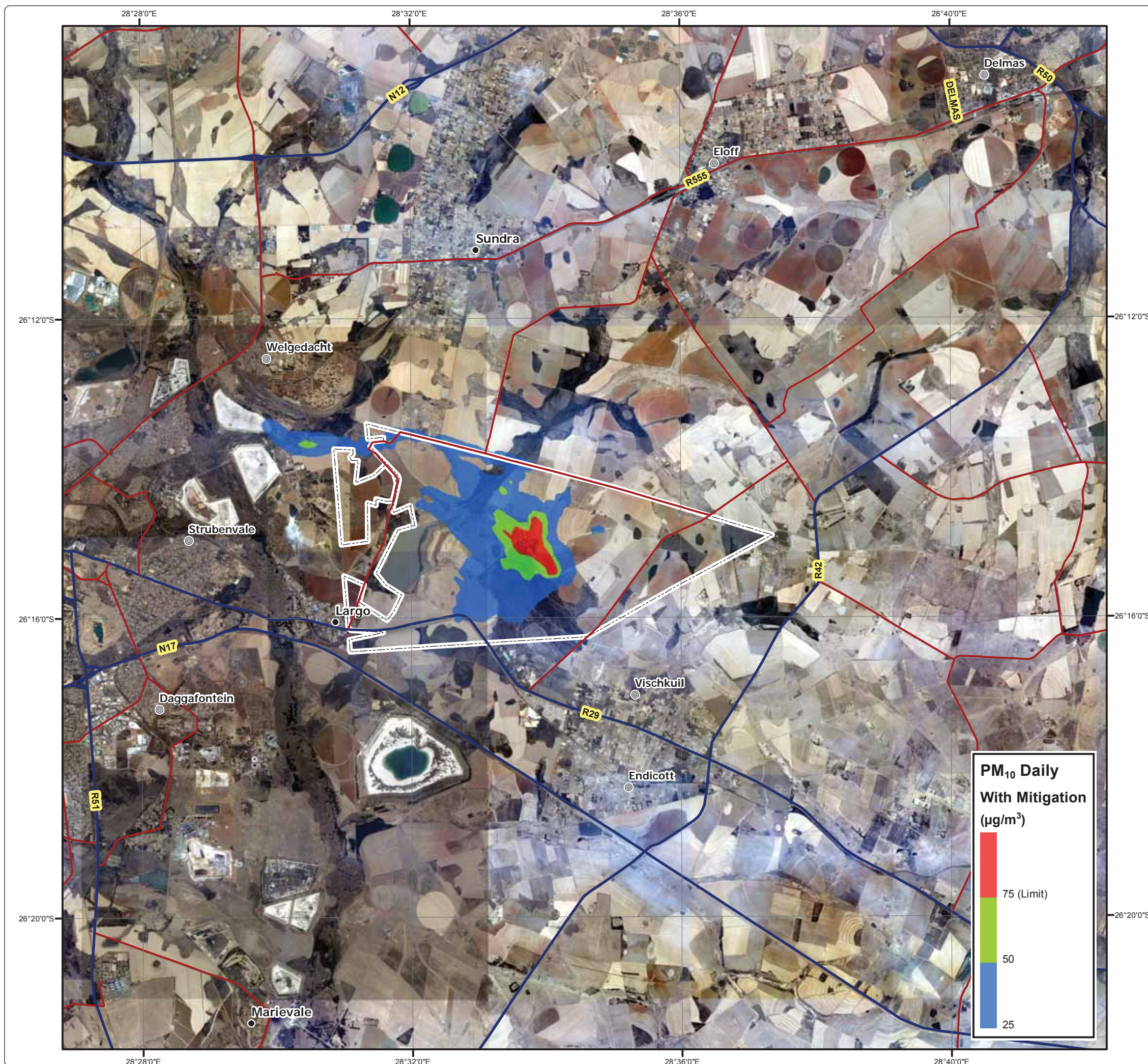
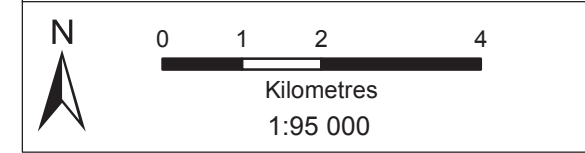
-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road




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Projection: Transverse Mercator Ref #: meg.CNC4065.201612.116  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017








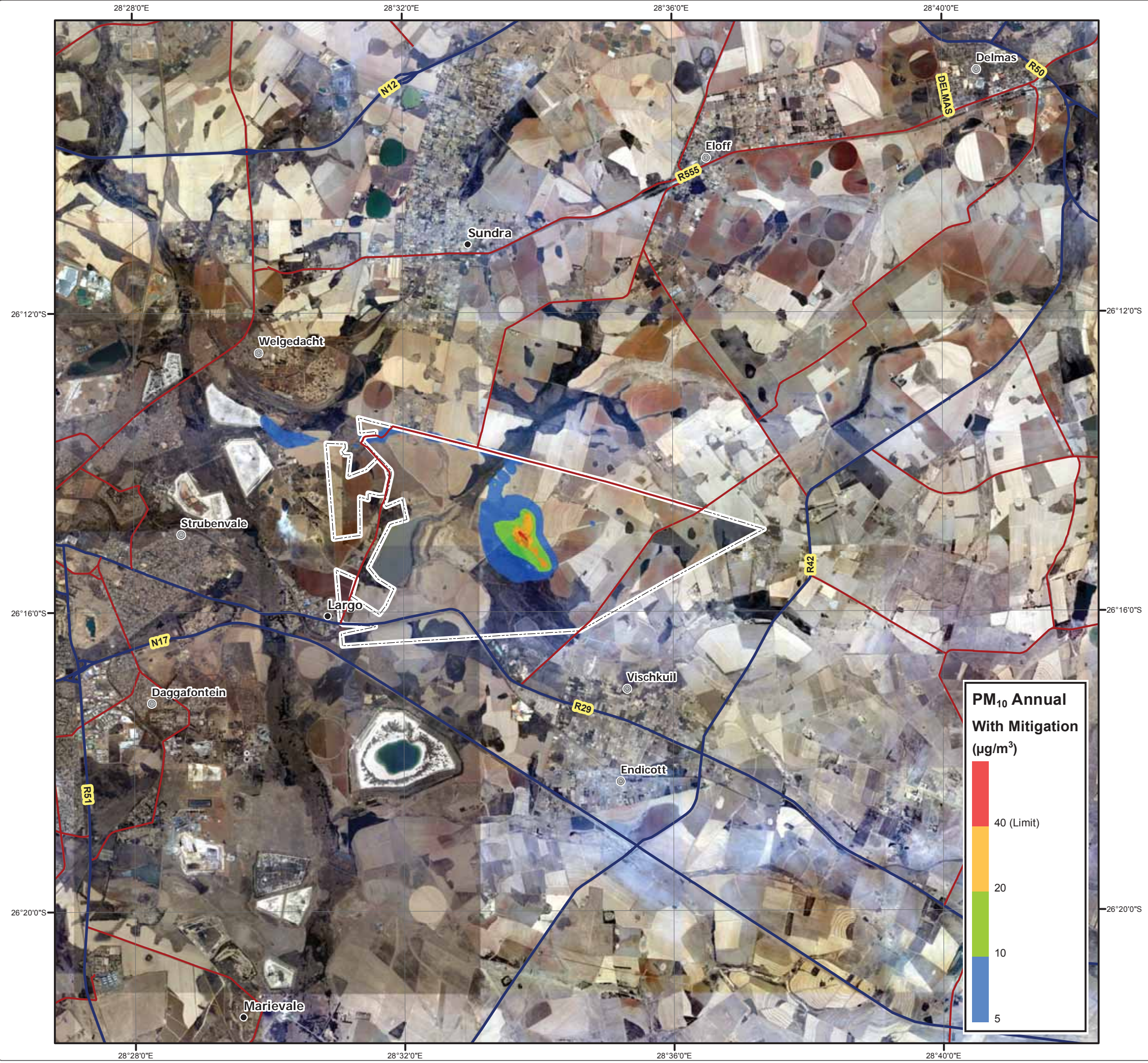
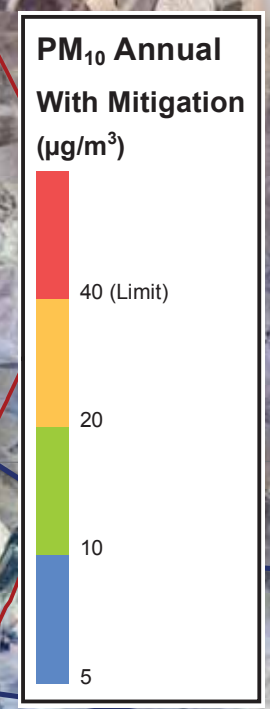


# Palmietkuilen Project EIA

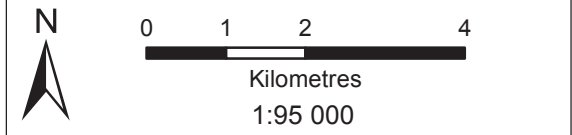
## PM<sub>10</sub> Annual With Mitigation

### Legend

-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road



Projection: Transverse Mercator Ref #: meg.CNC4065.201612.117  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017








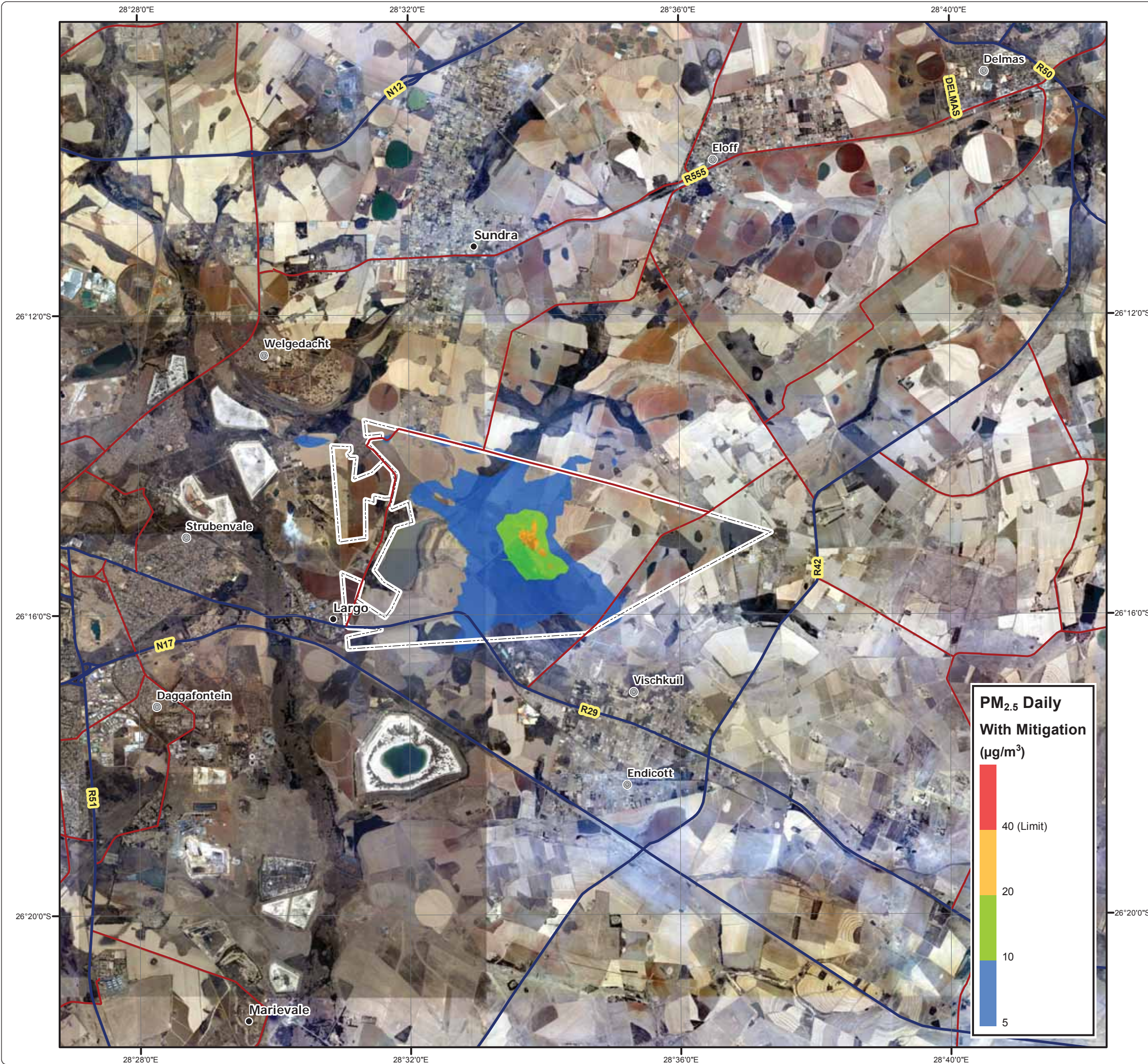
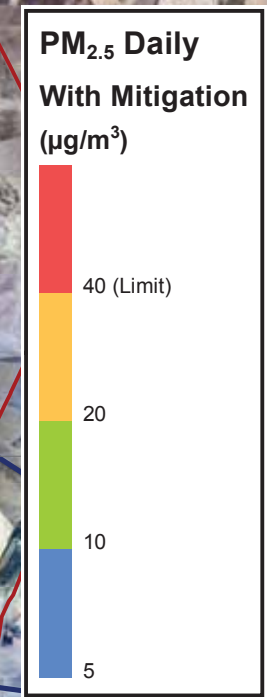


# Palmietkuilen Project EIA

## PM<sub>2.5</sub> Daily With Mitigation

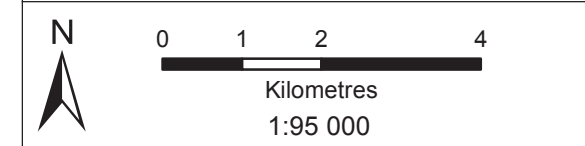
### Legend

-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road



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Projection: Transverse Mercator      Ref #: meg.CNC4065.201612.120  
 Datum: WGS 1984                              Revision Number: 1  
 Central Meridian: 29°E                        Date: 28/03/2017








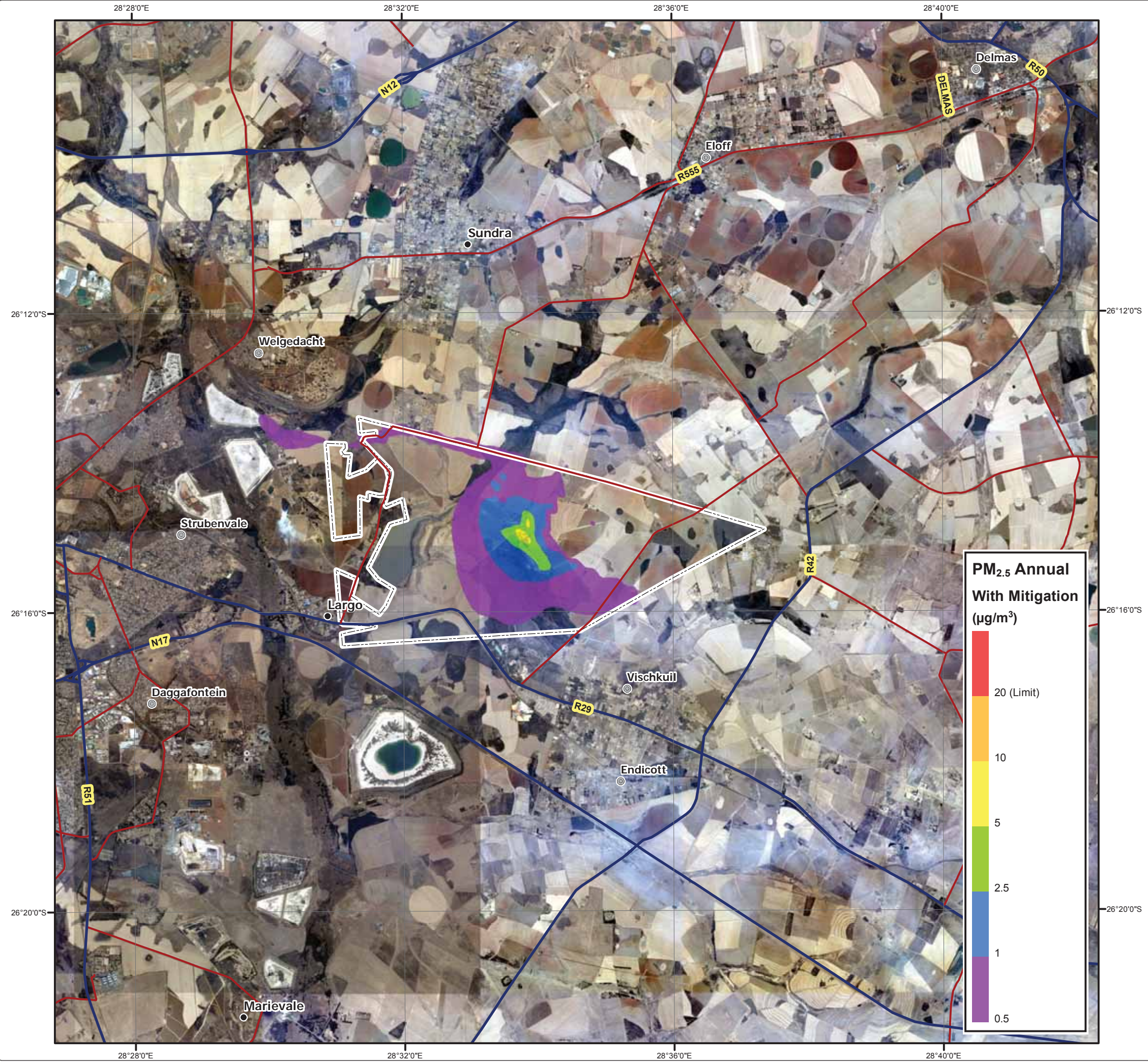
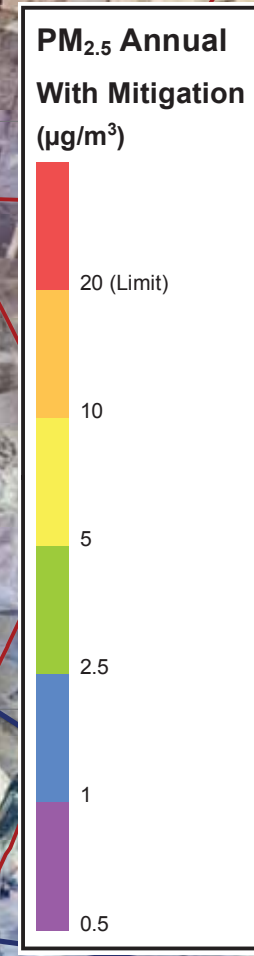


# Palmietkuilen Project EIA

## PM<sub>2.5</sub> Annual With Mitigation

### Legend

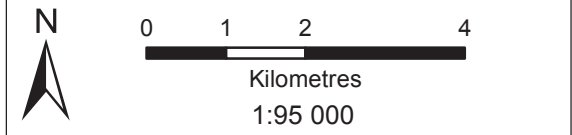
-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road




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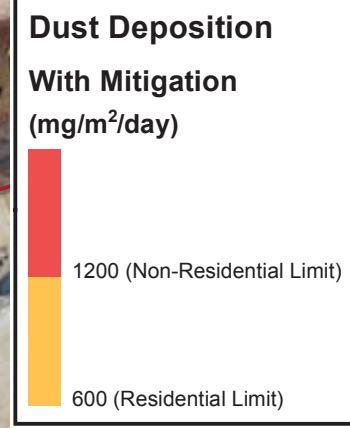
Projection: Transverse Mercator Ref #: meg.CNC4065.201612.118  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017



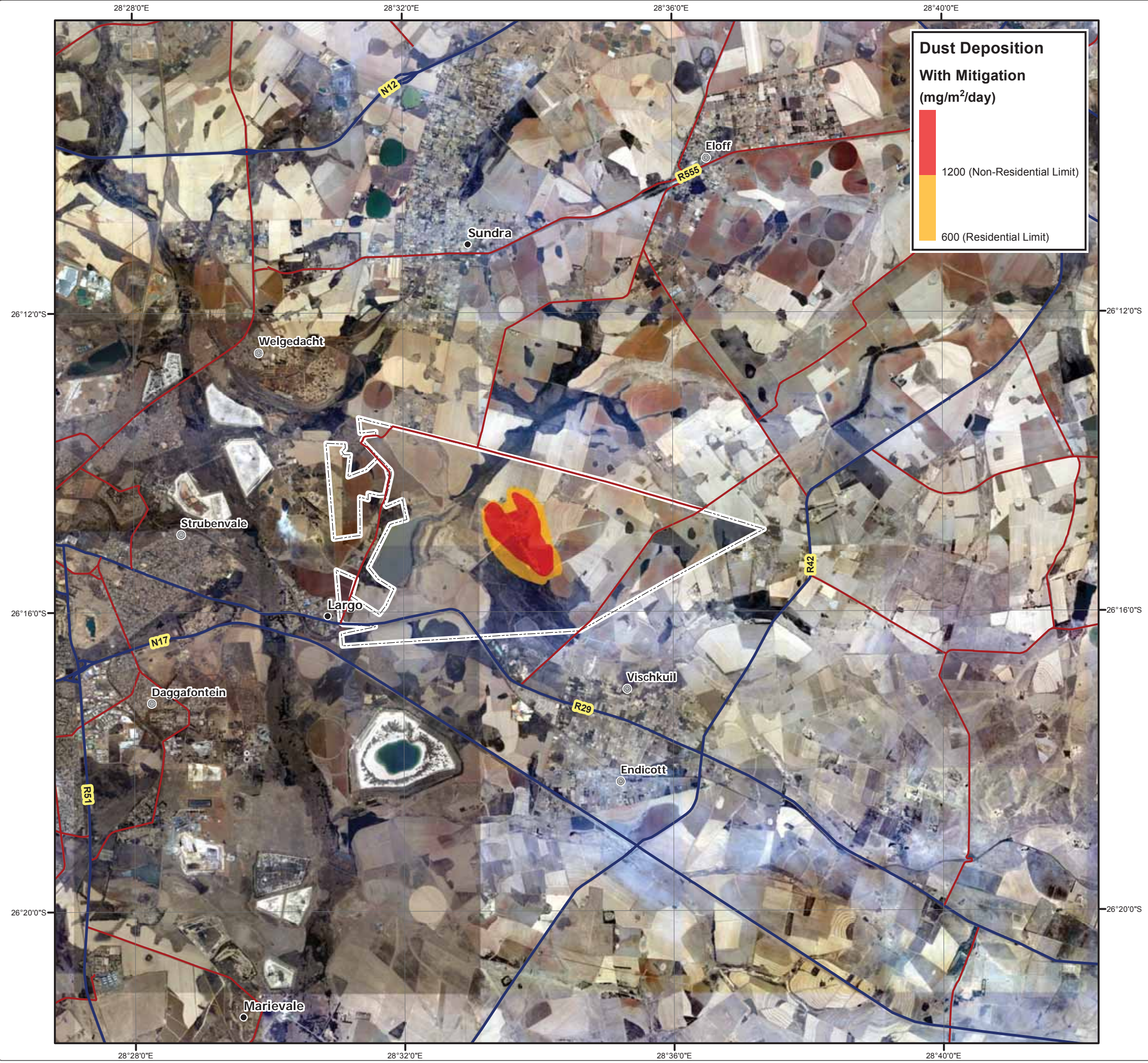


# Palmietkuilen Project EIA

## Dust Deposition With Mitigation

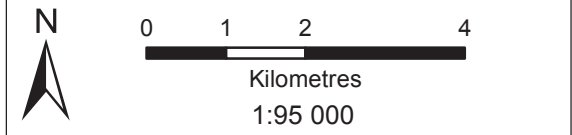


- ### Legend
- Mining Right Boundary
  - Other Town
  - Settlement
  - Arterial / National Route
  - Main Road



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Projection: Transverse Mercator Ref #: scm.CNC4065.201701.007  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017












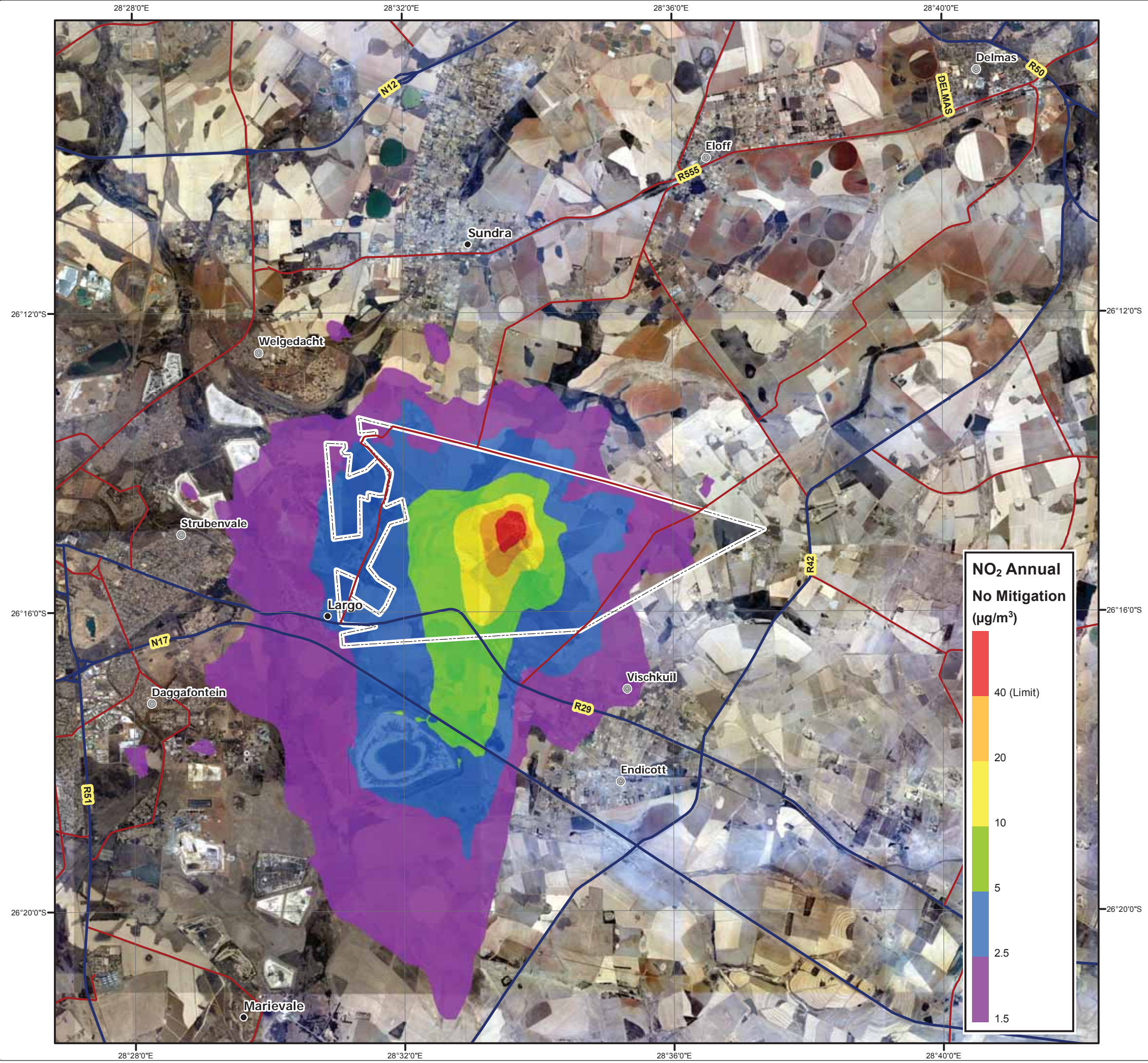
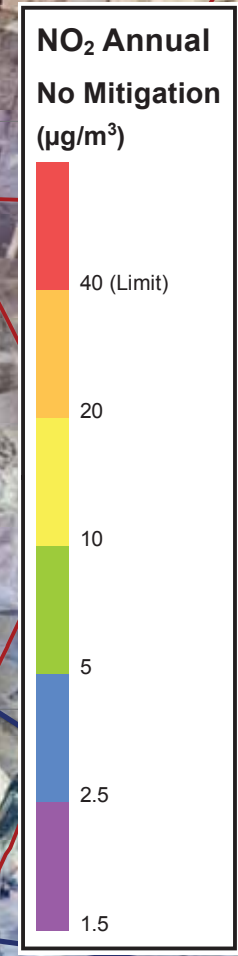


# Palmietkuilen Project EIA

## NO<sub>2</sub> Annual No Mitigation

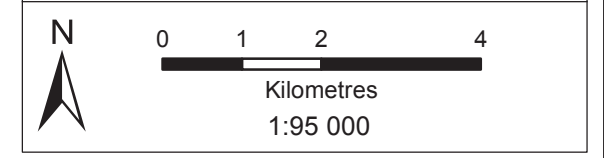
### Legend

-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road



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Projection: Transverse Mercator      Ref #: meg.CNC4065.201612.123  
 Datum: WGS 1984                              Revision Number: 1  
 Central Meridian: 29°E                        Date: 28/03/2017








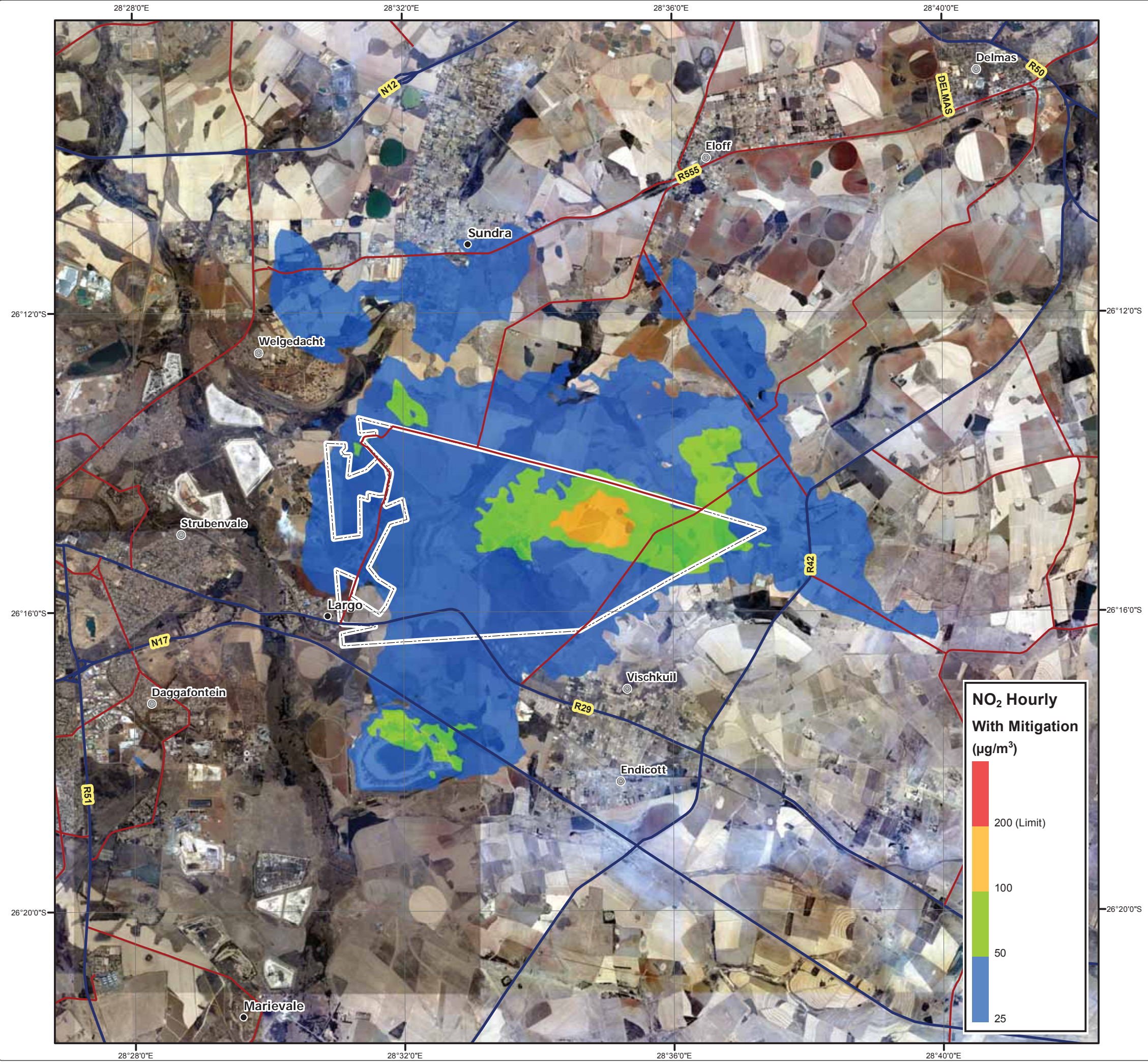


# Palmietkuilen Project EIA

## NO<sub>2</sub> Hourly With Mitigation

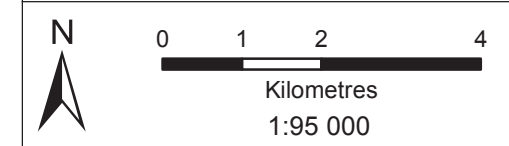
### Legend

-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road



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Projection: Transverse Mercator Ref #: meg.CNC4065.201612.124  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017








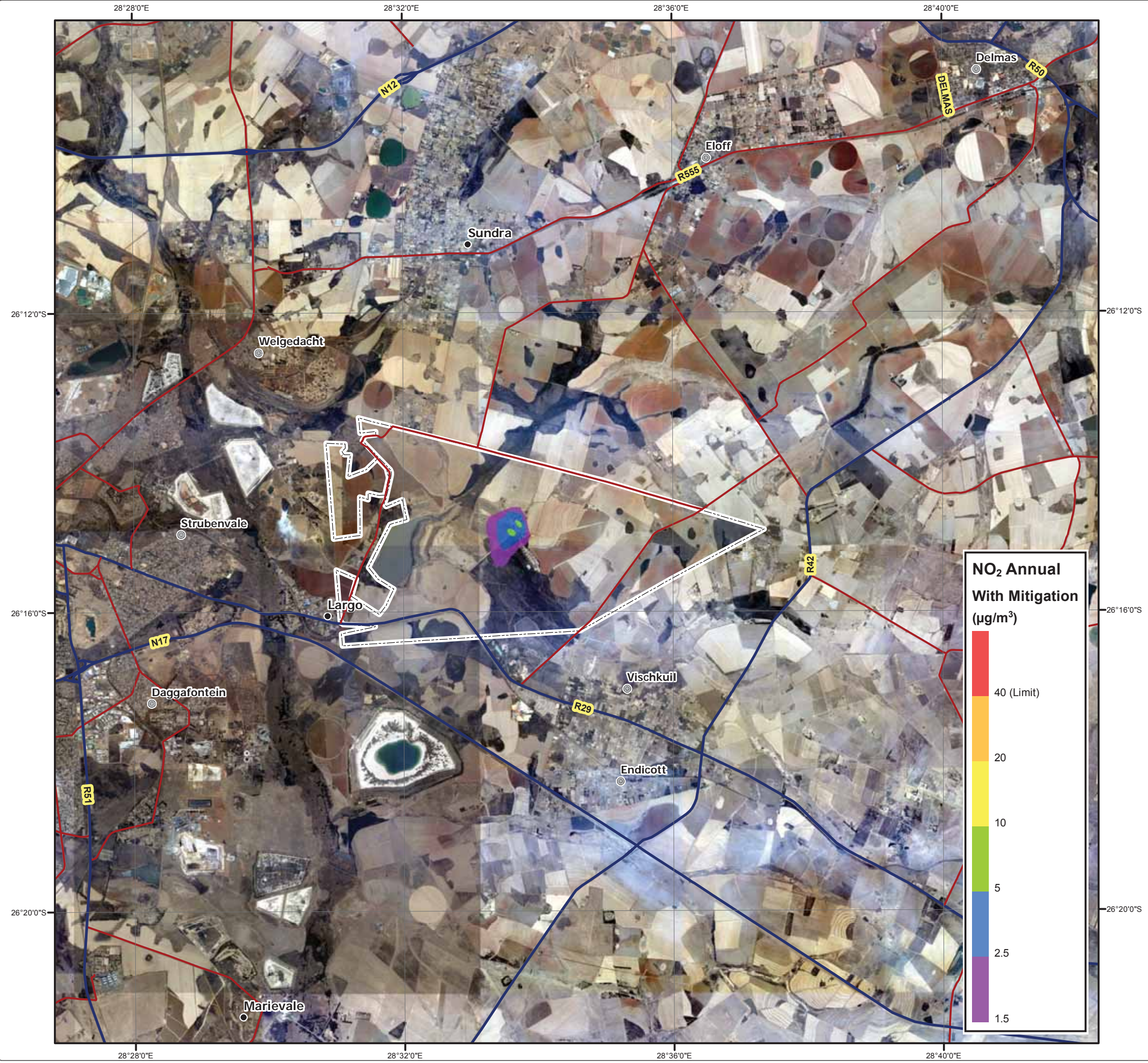
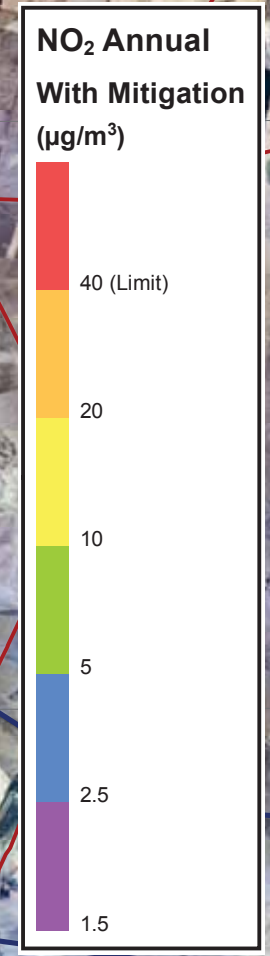


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## NO<sub>2</sub> Annual With Mitigation

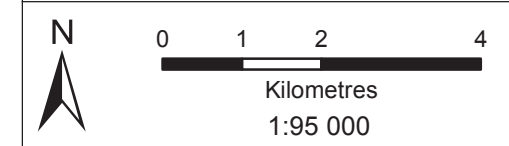
### Legend

-  Mining Right Boundary
-  Other Town
-  Settlement
-  Arterial / National Route
-  Main Road



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Projection: Transverse Mercator Ref #: meg.CNC4065.201612.122  
 Datum: WGS 1984 Revision Number: 1  
 Central Meridian: 29°E Date: 28/03/2017
































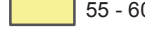







# Palmietkuilen Project EIA

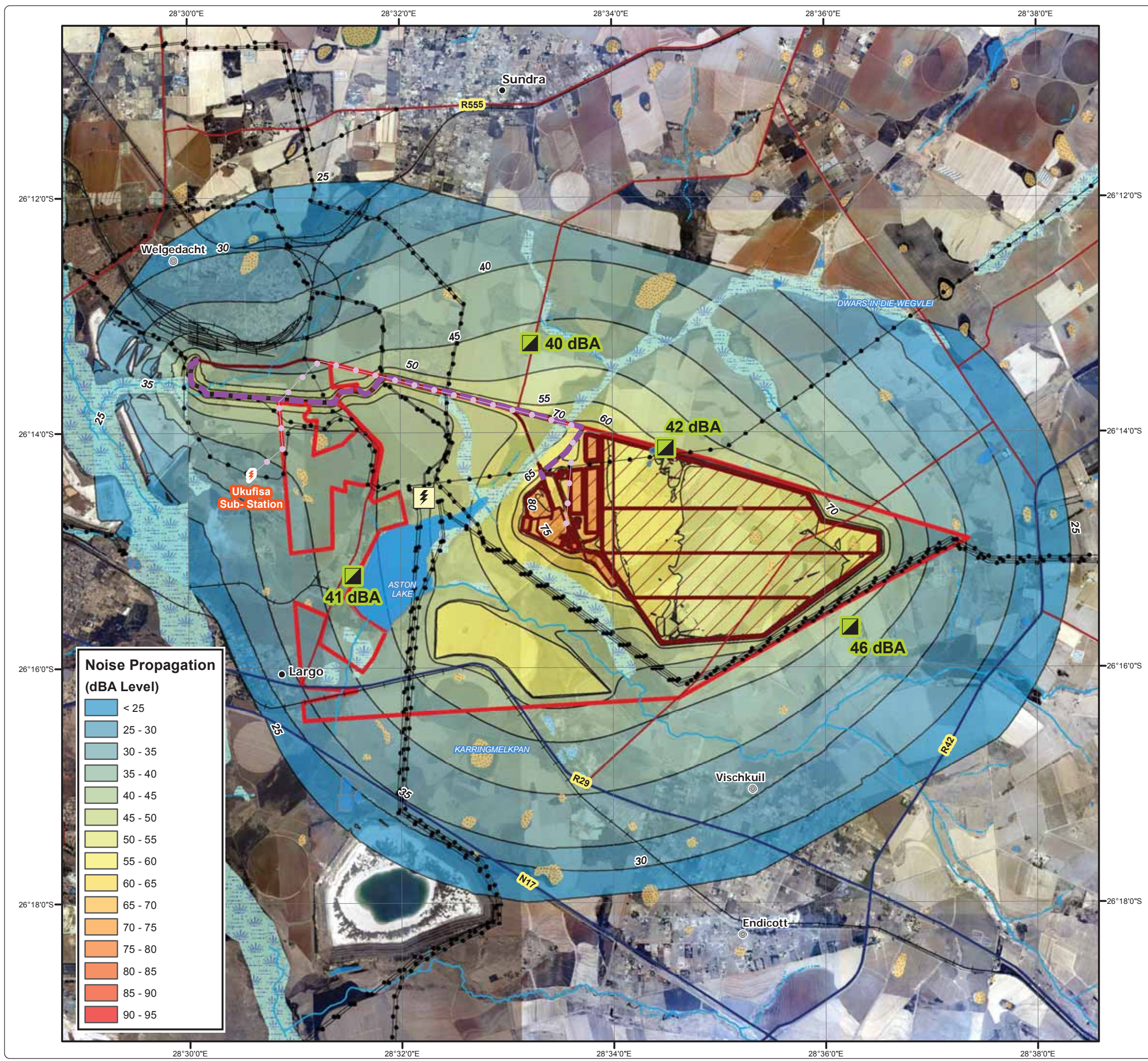
## Construction Noise Propagation

### Legend

-  Mining Right Boundary
-  Preferred Power Line Route
-  Preferred Access Road Route
-  Infrastructure Footprint
-  Noise Monitoring Location
-  Other Town
-  Settlement
-  Sub-Station
-  Ukufisa Sub-Station
-  Power Line
-  Arterial / National Route
-  Main Road
-  Railway Line
-  Non-Perennial Stream
-  Perennial Stream
-  Dam Wall
-  Dam / Lake
-  Wetland
-  Perennial Pan
-  Non-Perennial Pan / Stream

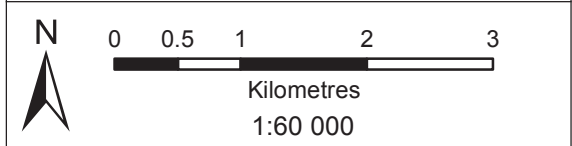
**Noise Propagation (dBA Level)**

	< 25
	25 - 30
	30 - 35
	35 - 40
	40 - 45
	45 - 50
	50 - 55
	55 - 60
	60 - 65
	65 - 70
	70 - 75
	75 - 80
	80 - 85
	85 - 90
	90 - 95



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Projection: Transverse Mercator      Ref #: meg.CNC4065.201611.043  
 Datum: WGS 1984      Revision Number: 4  
 Central Meridian: 29°E      Date: 27/03/2017





# Palmietkuilen Project EIA

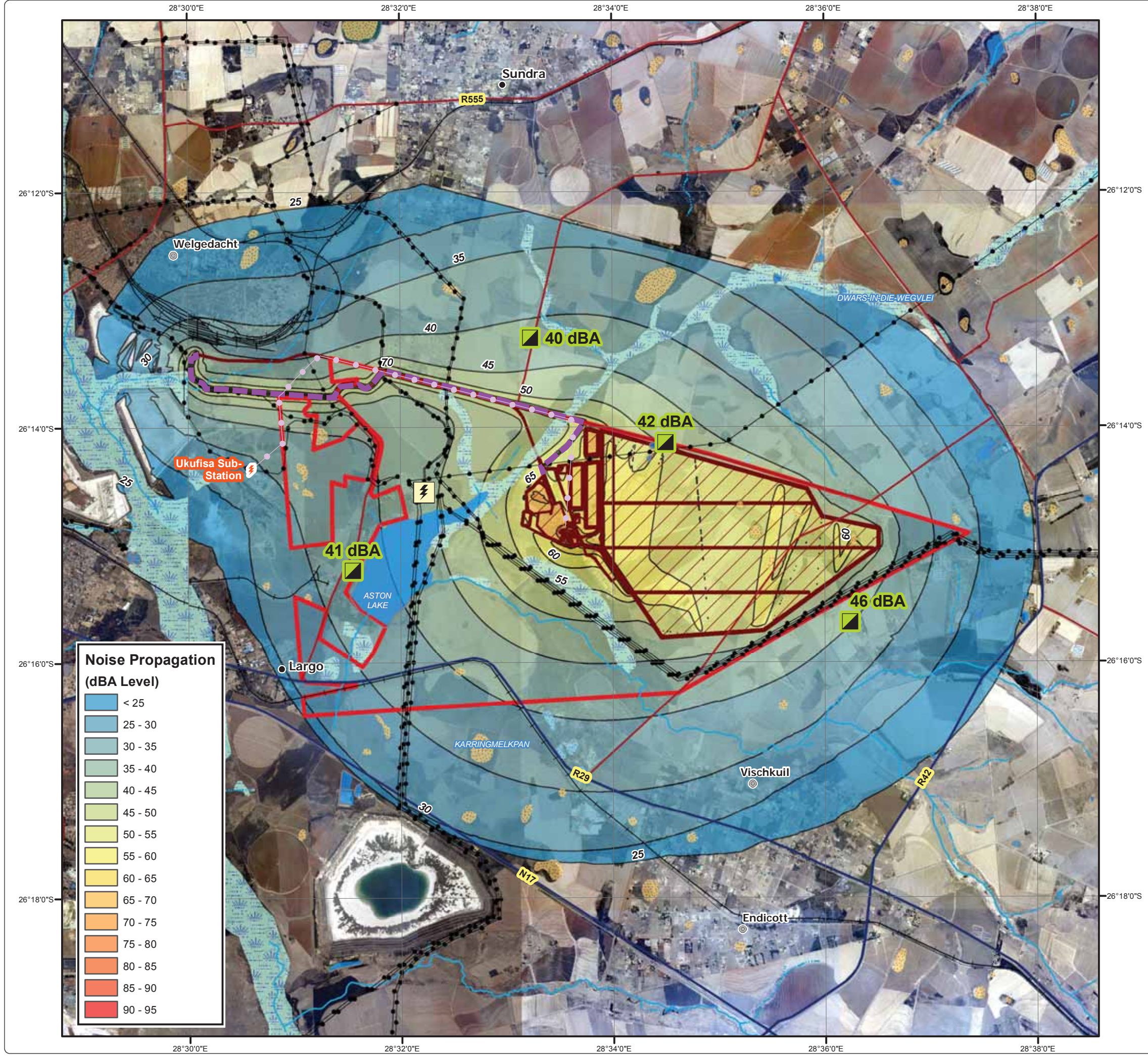
## Operational Daytime Noise Propagation

### Legend

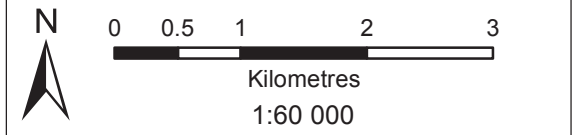
- Mining Right Boundary
- Preferred Power Line Route
- Preferred Access Road Route
- Infrastructure Footprint
- Noise Monitoring Location
- Other Town
- Settlement
- Sub-Station
- Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream

**Noise Propagation (dBA Level)**

	< 25
	25 - 30
	30 - 35
	35 - 40
	40 - 45
	45 - 50
	50 - 55
	55 - 60
	60 - 65
	65 - 70
	70 - 75
	75 - 80
	80 - 85
	85 - 90
	90 - 95



Projection: Transverse Mercator      Ref #: meg.CNC4065.201611.051  
 Datum: WGS 1984      Revision Number: 4  
 Central Meridian: 29°E      Date: 27/03/2017





# Palmietkuilen Project EIA

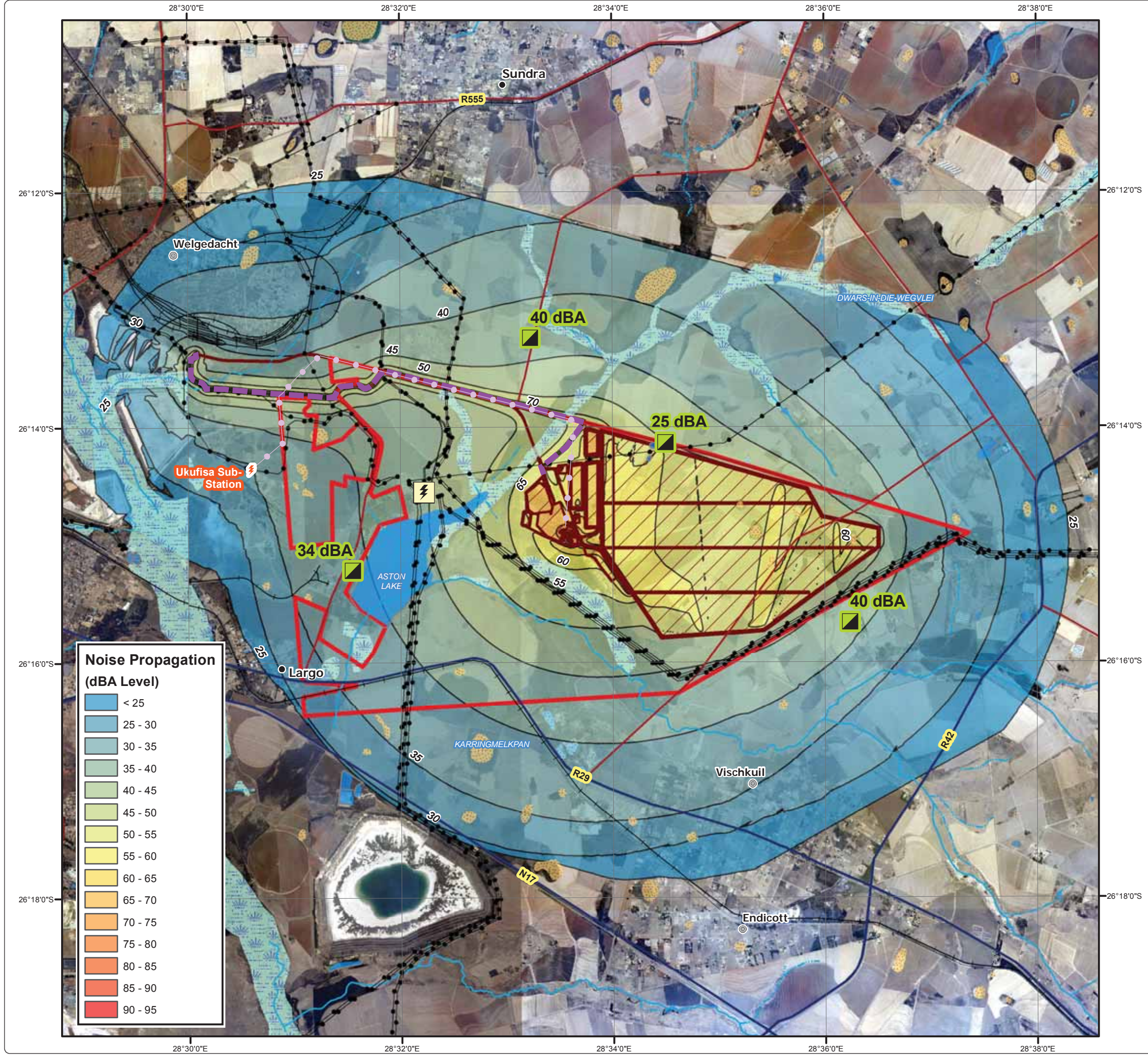
## Operational Night Time Noise Propagation

### Legend

- Mining Right Boundary
- Preferred Power Line Route
- Preferred Access Road Route
- Infrastructure Footprint
- Noise Monitoring Location
- Other Town
- Settlement
- Sub-Station
- Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream

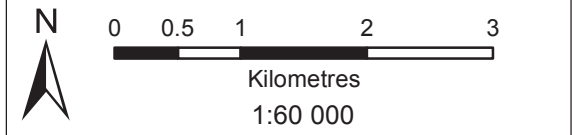
**Noise Propagation (dBA Level)**

	< 25
	25 - 30
	30 - 35
	35 - 40
	40 - 45
	45 - 50
	50 - 55
	55 - 60
	60 - 65
	65 - 70
	70 - 75
	75 - 80
	80 - 85
	85 - 90
	90 - 95



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Projection: Transverse Mercator      Ref #: meg.CNC4065.201611.052  
 Datum: WGS 1984      Revision Number: 4  
 Central Meridian: 29°E      Date: 27/03/2017





# Palmietkuilen Project EIA

## Viewpoints for Photomontages


### Legend

- Mining Right Boundary
- Other Town
- Settlement
- Sub-Station
- Ukufisa Sub-Station
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream
- Daytime Photograph
- Night Time Photograph
- Photomontage Viewpoint
- Photomontage View Direction

### Site Visit Points

- Daytime Photograph
- Night Time Photograph
- Photomontage Viewpoint
- Photomontage View Direction



Proposed Infrastructure		
<span style="display: inline-block; width: 15px; border-bottom: 1px dashed purple; margin-right: 5px;"></span>	Preferred Power Line Route	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #cccccc; margin-right: 5px;"></span> Discard Dump
<span style="display: inline-block; width: 15px; border-bottom: 1px dashed purple; margin-right: 5px;"></span>	Preferred Access Road Route	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ff9900; margin-right: 5px;"></span> Discard Bin
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>	Open Pit	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #00bfff; margin-right: 5px;"></span> Pollution Control Dam
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>	Box Cut	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffff00; margin-right: 5px;"></span> Slurry Dam
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>	Hard Overburden Dump	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ff0000; margin-right: 5px;"></span> Plant Office Area
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>	Soft Overburden Dump	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ff0000; margin-right: 5px;"></span> Plant Infrastructure
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>	Top Soil Dump	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #90ee90; margin-right: 5px;"></span> Main Office Area
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>	RoM Stockpile	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #90ee90; margin-right: 5px;"></span> Mining Contractors Yard Workshop Area
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>	Product Stockpile	<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #90ee90; margin-right: 5px;"></span> Mining Contractors Yard Hard Park Area
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span> Access Road
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span> Haul Road
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #800000; margin-right: 5px;"></span> Ramp
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffff00; margin-right: 5px;"></span> Conveyor
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #00bfff; margin-right: 5px;"></span> Tip
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #008000; margin-right: 5px;"></span> Berm
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ff00ff; margin-right: 5px;"></span> Building
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ff00ff; margin-right: 5px;"></span> Parking
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #800080; margin-right: 5px;"></span> Tarpaulin Area
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #90ee90; margin-right: 5px;"></span> Weigh Bridge
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #800080; margin-right: 5px;"></span> Diesel Storage
<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #ffcc00; margin-right: 5px;"></span>		<span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #000080; margin-right: 5px;"></span> Water Tank



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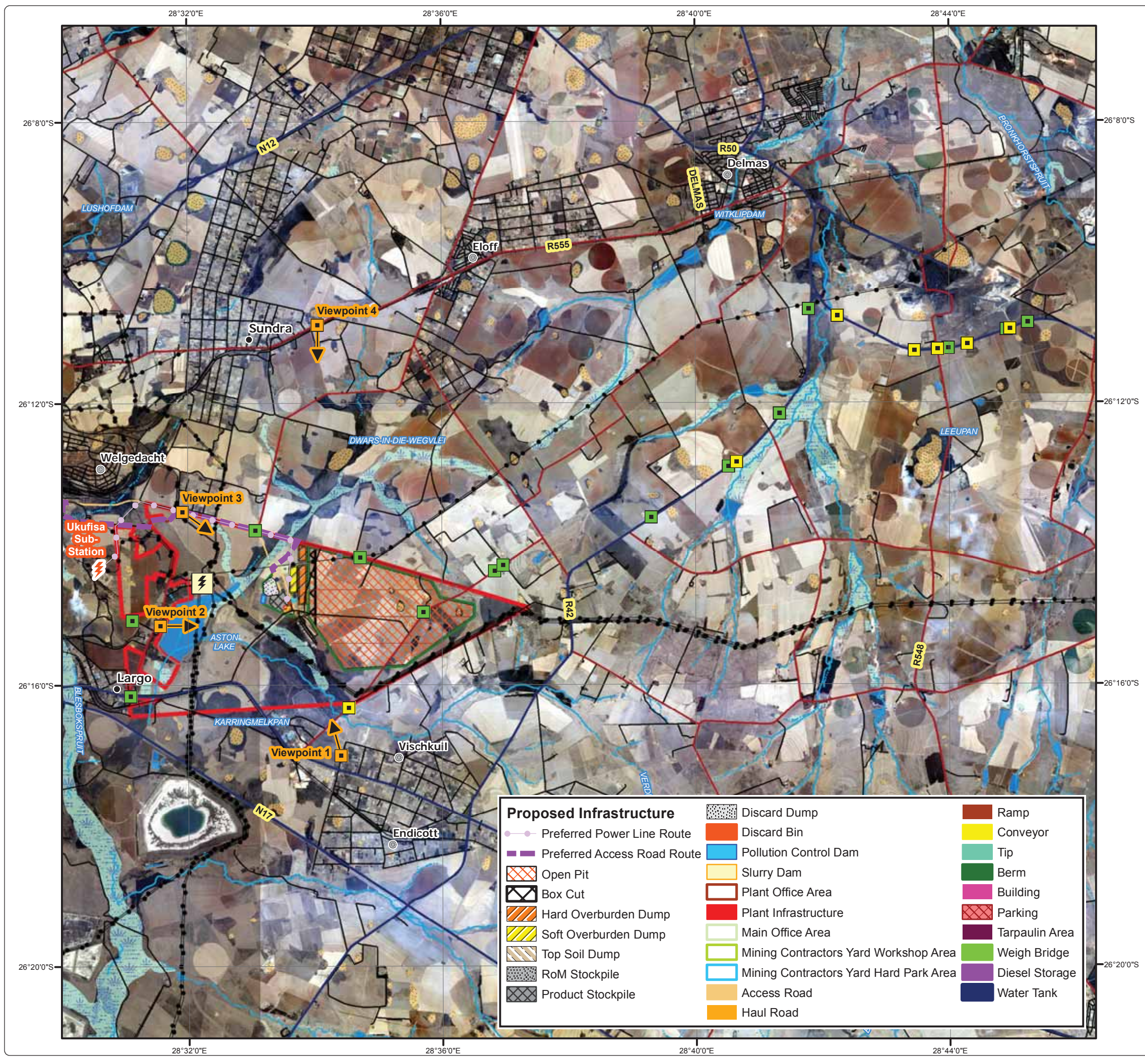
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Projection: Transverse Mercator      Ref #: meg.CNC4065.201612.091  
 Datum: WGS 1984                              Revision Number: 2  
 Central Meridian: 29°E                        Date: 28/03/2017

Kilometres  
1:100 000

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# Palmietkuilen Project EIA

## Proposed Stormwater Management Plan

### Legend

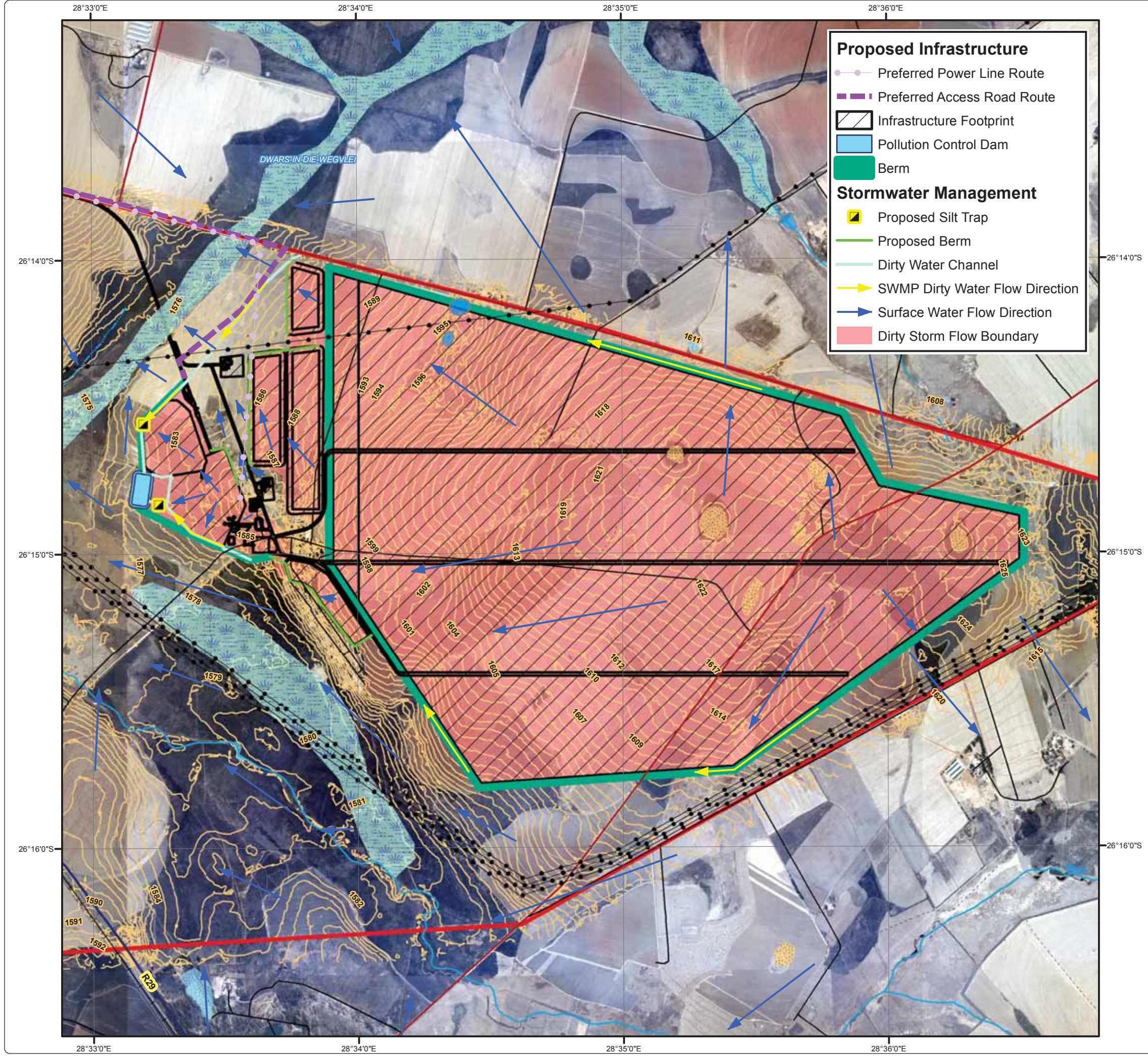
- Mining Right Boundary
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Track
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Contour (1 m Interval)
- Dam / Lake
- Wetland
- Perennial Pan
- Non-Perennial Pan / Stream

#### Proposed Infrastructure

- Preferred Power Line Route
- Preferred Access Road Route
- Infrastructure Footprint
- Pollution Control Dam
- Berm

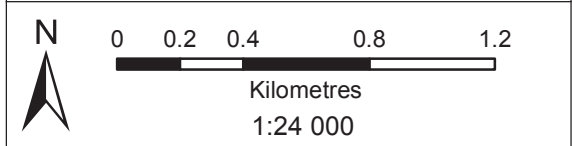
#### Stormwater Management

- Proposed Silt Trap
- Proposed Berm
- Dirty Water Channel
- SWMP Dirty Water Flow Direction
- Surface Water Flow Direction
- Dirty Storm Flow Boundary



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Projection: Transverse Mercator      Ref #: meg.CNC4065.201611.042  
 Datum: WGS 1984                              Revision Number: 2  
 Central Meridian: 29°E                        Date: 28/03/2017



























# Palmietkuilen Project EIA

## Proposed Groundwater Monitoring Boreholes

### Legend

-  Mining Right Boundary
-  Preferred Power Line Route
-  Preferred Access Road Route
-  Infrastructure Footprint
-  Proposed Groundwater Monitoring Borehole
-  Other Town
-  Settlement
-  Sub-Station
-  Ukufisa Sub-Station
-  Power Line
-  Arterial / National Route
-  Main Road
-  Minor Road
-  Track
-  Railway Line
-  Non-Perennial Stream
-  Perennial Stream
-  Dam Wall
-  Dam / Lake
-  Wetland
-  Perennial Pan
-  Non-Perennial Pan / Stream



**DIGBY WELLS**  
ENVIRONMENTAL

• Sustainability • Service • Positive Change • Professionalism • Future Focused • Integrity

Projection: Transverse Mercator      Ref #: meg.CNC4065.201702.158  
 Datum: WGS 1984                              Revision Number: 1  
 Central Meridian: 29°E                        Date: 28/03/2017

