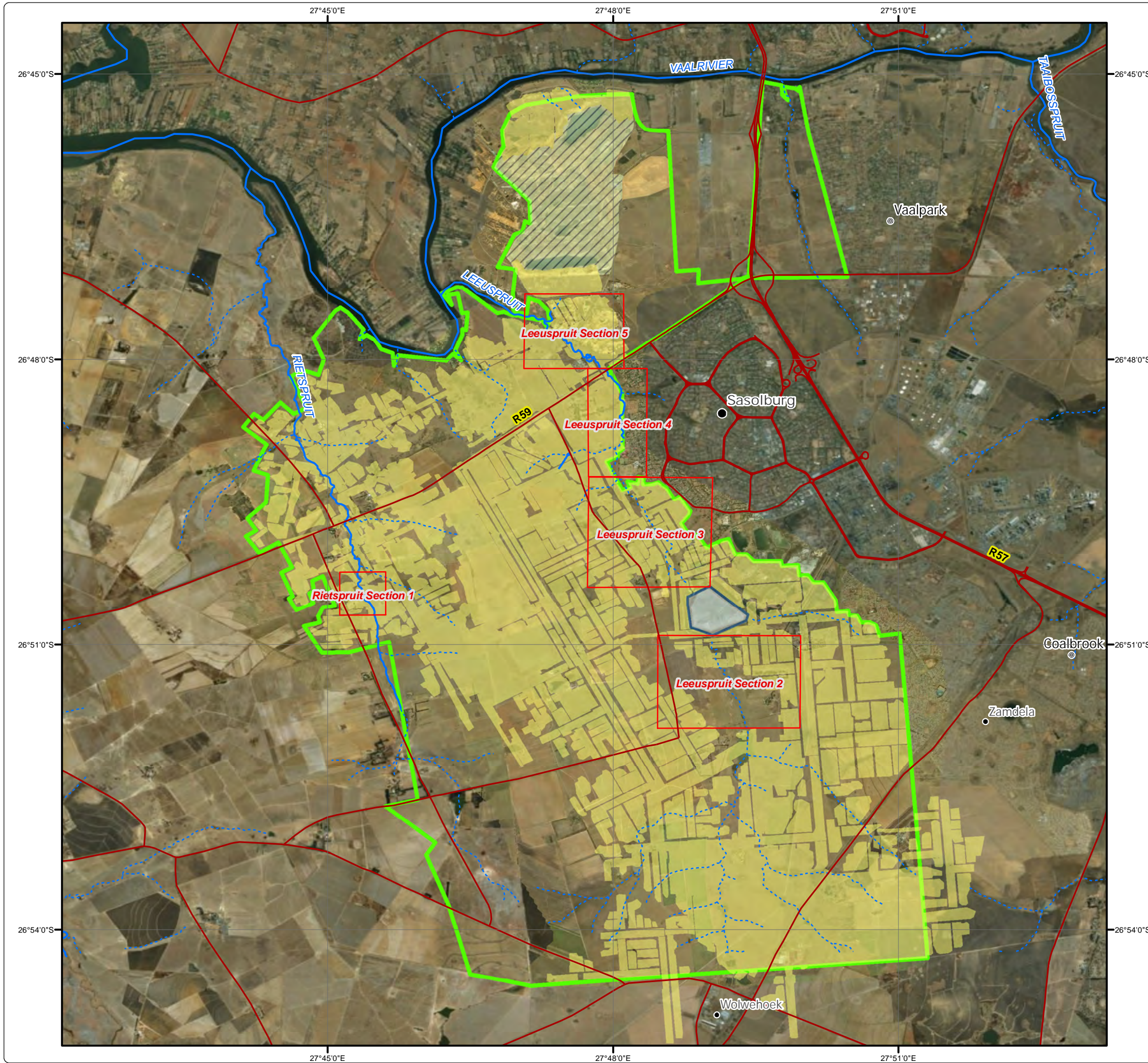


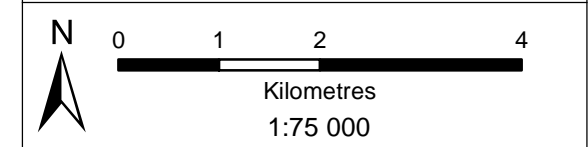
Sasol Sigma River Diversion Mining Layout

Legend

- Defunct Sigma Mining Right Boundary
- Major Town
- ⦿ Other Town
- Settlement
- Main Road
- National Road
- Perennial River
- - - Non-Perennial River
- Dam
- Historic Mining Areas**
- Eastern Discard Dump
- Fine Ash Dump
- Underground Mining
- Open Cast Area
- River Diversion Section



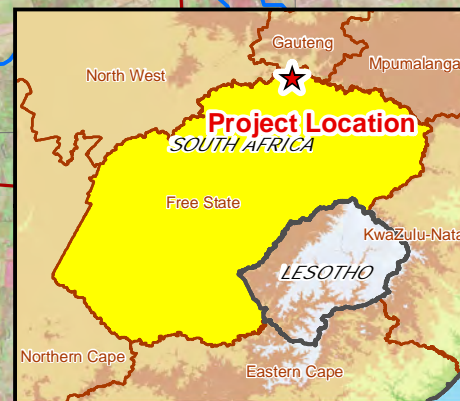
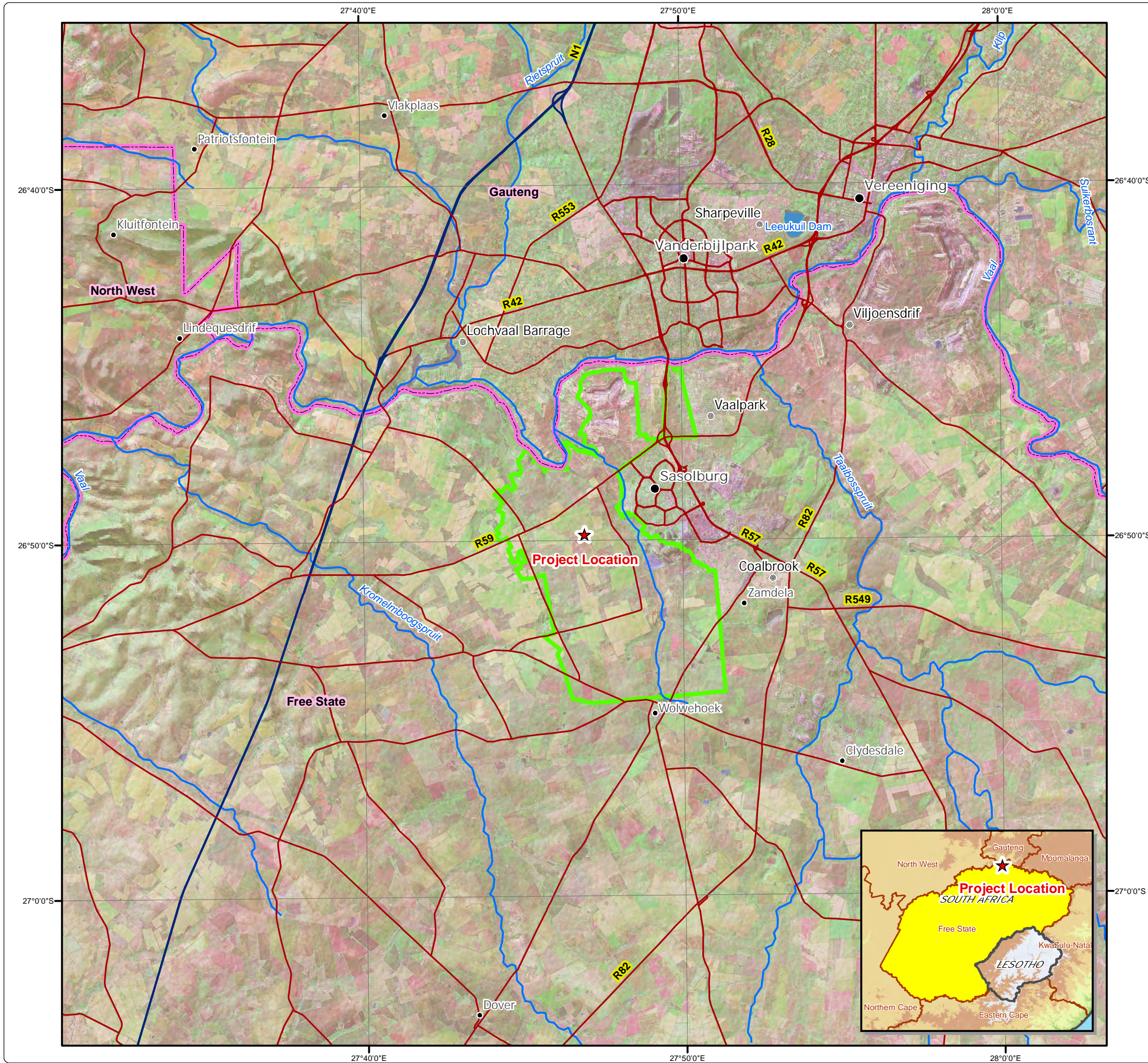
Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.127
 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 10/10/2018



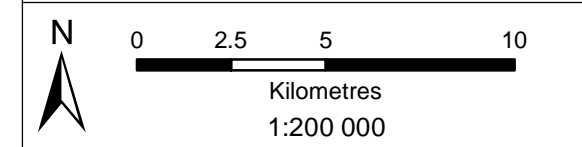
Sasol Sigma River Diversion Regional Setting

Legend

-  Defunct Sigma Mining Right Boundary
-  Sigma Colliery
-  Major Town
-  Other Town
-  Settlement
-  Main Road
-  National Road
-  River
-  Dam
-  Provincial Boundary














Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.128
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 27°E Date: 10/10/2018

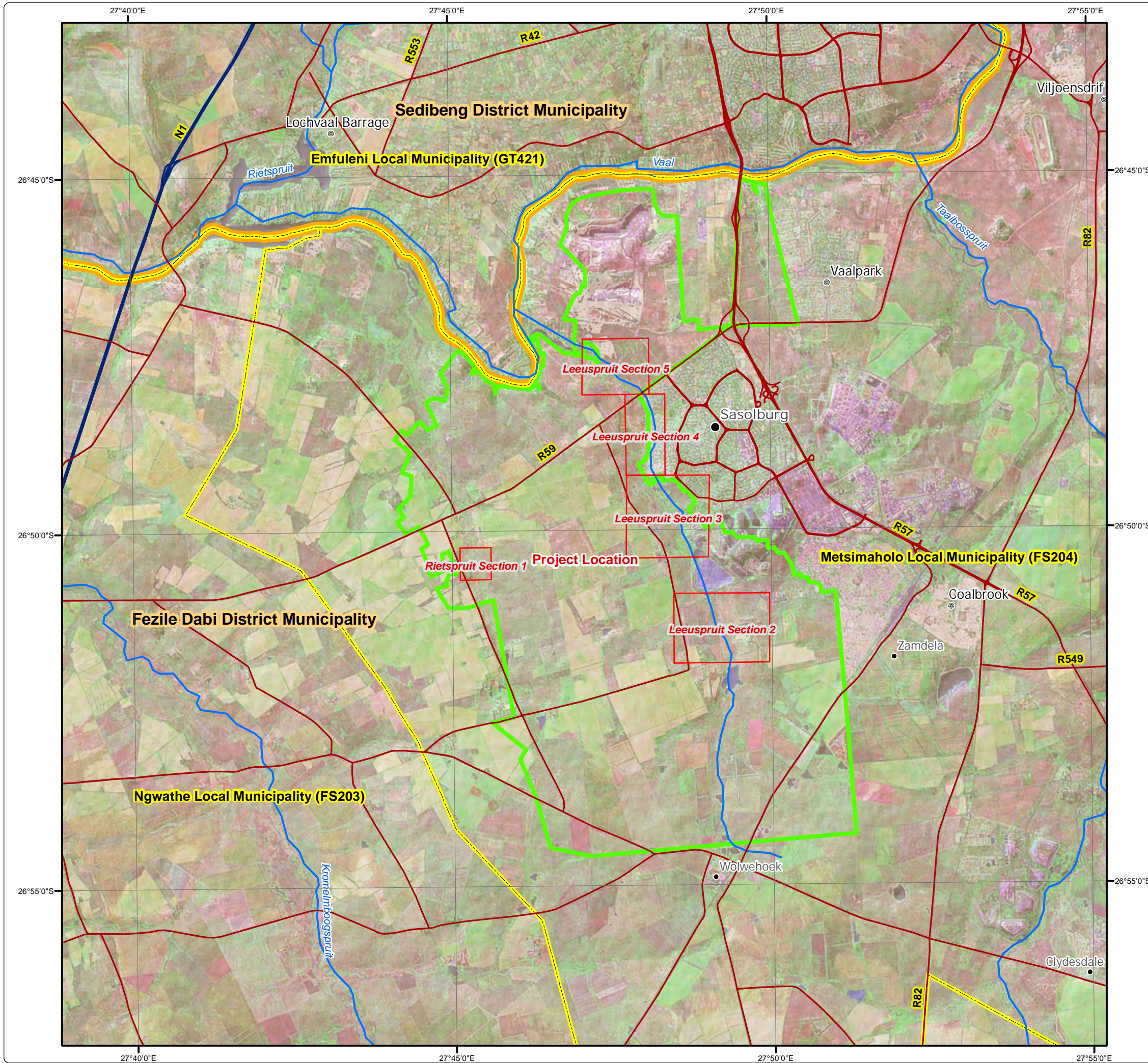


Sasol Sigma River Diversion

Local Setting

Legend

-  Defunct Sigma Mining Right Boundary
-  Major Town
-  Other Town
-  Settlement
-  Main Road
-  National Road
-  River
-  Dam
-  River Diversion Sections
-  Local Municipality
-  District Municipality



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Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.129
 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 10/10/2018



Sasol Sigma River Diversion

Land Tenure

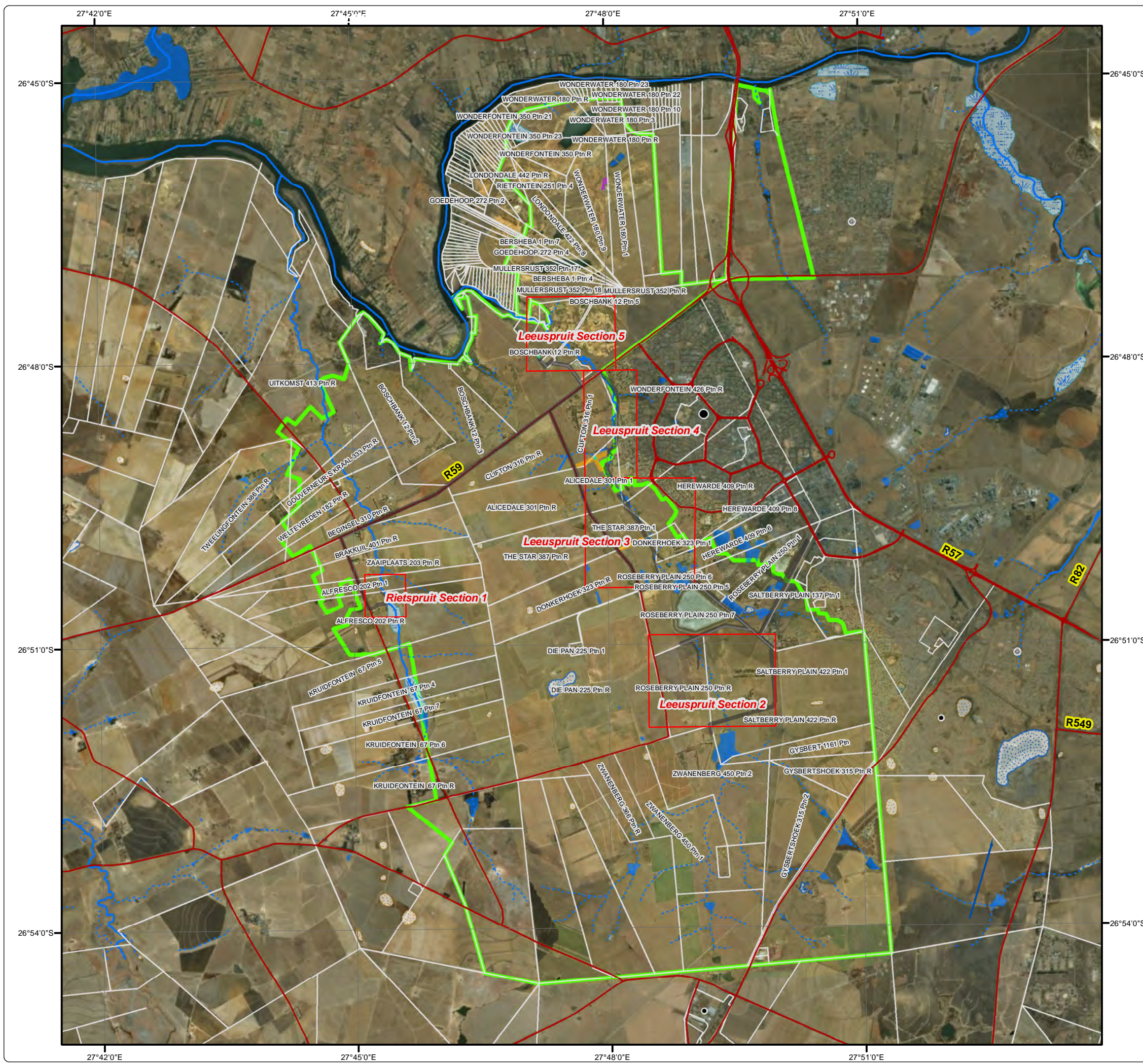
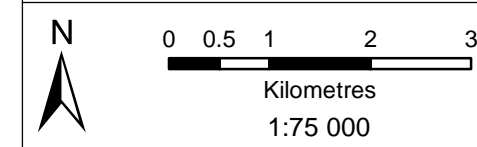
Legend

-  Defunct Sigma Mining Right Boundary
-  Major Town
-  Other Town
-  Settlement
-  Main Road
-  Perennial River
-  Non-Perennial River
-  Dam
-  Wetland
-  Perennial Pan
-  Non-Perennial Pan
-  Farm Portion
- Existing Infrastructure**
-  Existing Road
- Proposed Infrastructure**
-  New Road
-  Surface Mitigation Infrastructure
-  Batching Plant
-  Laydown Area
-  River Diversion Section



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Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.096
 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 12/10/2018



Sasol Sigma River Diversion

Proposed Surface Mitigation Infrastructure

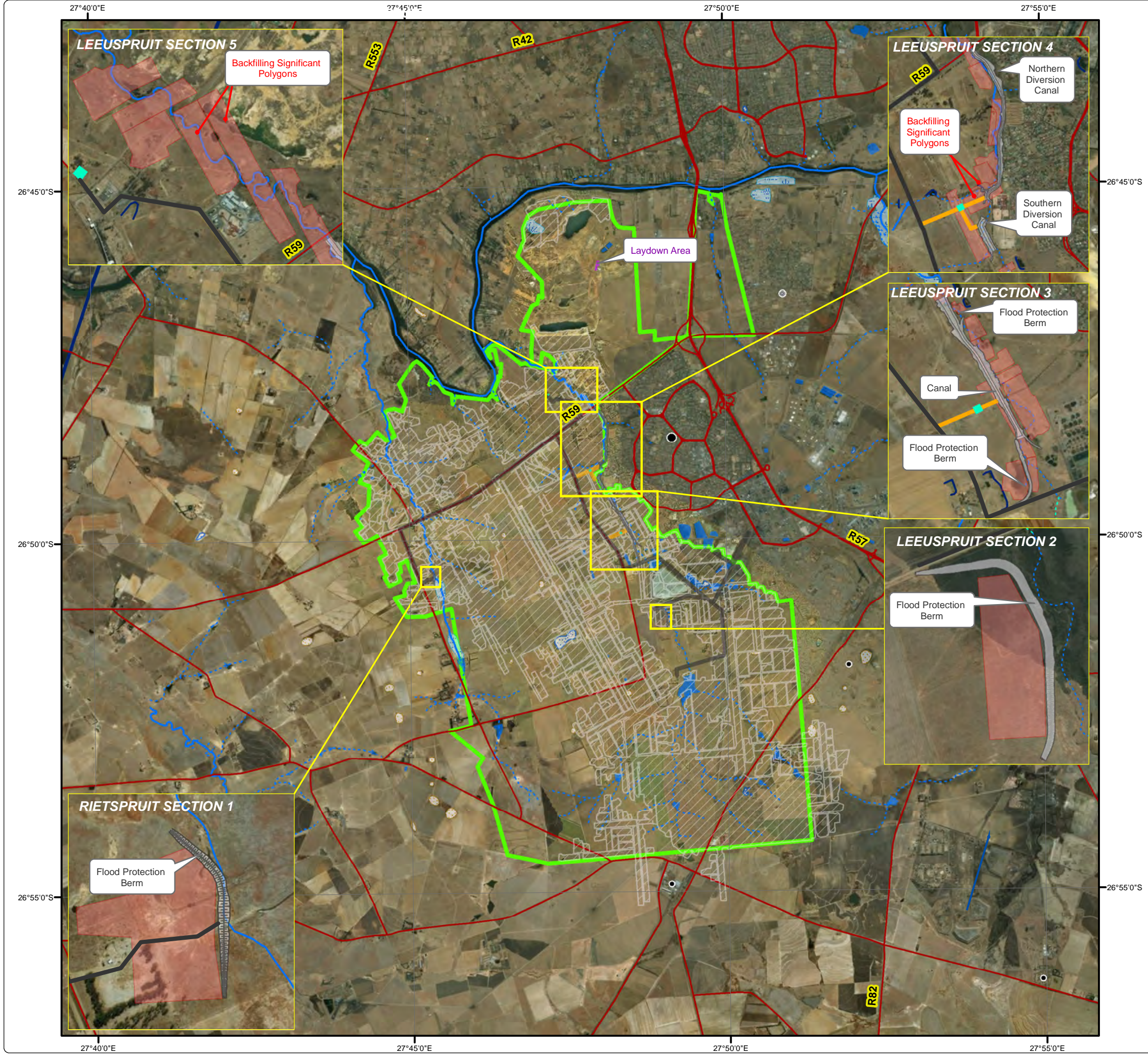
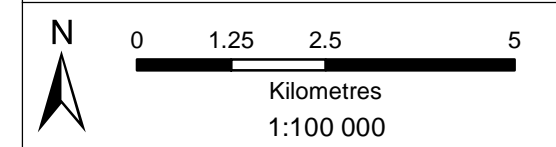
Legend

-  Defunct Sigma Mining Right Boundary
-  Major Town
-  Other Town
-  Settlement
-  Main Road
-  National Road
-  Perennial River
-  Non-Perennial River
-  Dam
-  Wetland
-  Perennial Pan
-  Non-Perennial Pan
- Existing Infrastructure**
-  Existing Road
- Proposed Infrastructure**
-  New Road
-  Surface Mitigation Infrastructure
-  Batch Plant
-  Laydown Area
- Historic Mining Areas**
-  Underground Mining



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Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.131
Datum: Cape Revision Number: 1
Central Meridian: 27°E Date: 10/10/2018



Sasol Sigma River Diversion

Probability of Pillar Failure

Probability of Pillar Failure

- P1 - P6
- P7 - Definite Pillar Failure

Legend

- Defunct Sigma Mining Right Boundary
- Major Town
- Other Town
- Settlement
- Main Road
- Perennial River
- Non-Perennial River
- Dam
- Wetland
- Perennial Pan
- Non-Perennial Pan
- Existing Infrastructure**
 - Existing road
- Proposed Infrastructure**
 - New Road
 - Surface Mitigation Infrastructure
 - Batching Plant
 - Laydown Area
 - River Diversion Section

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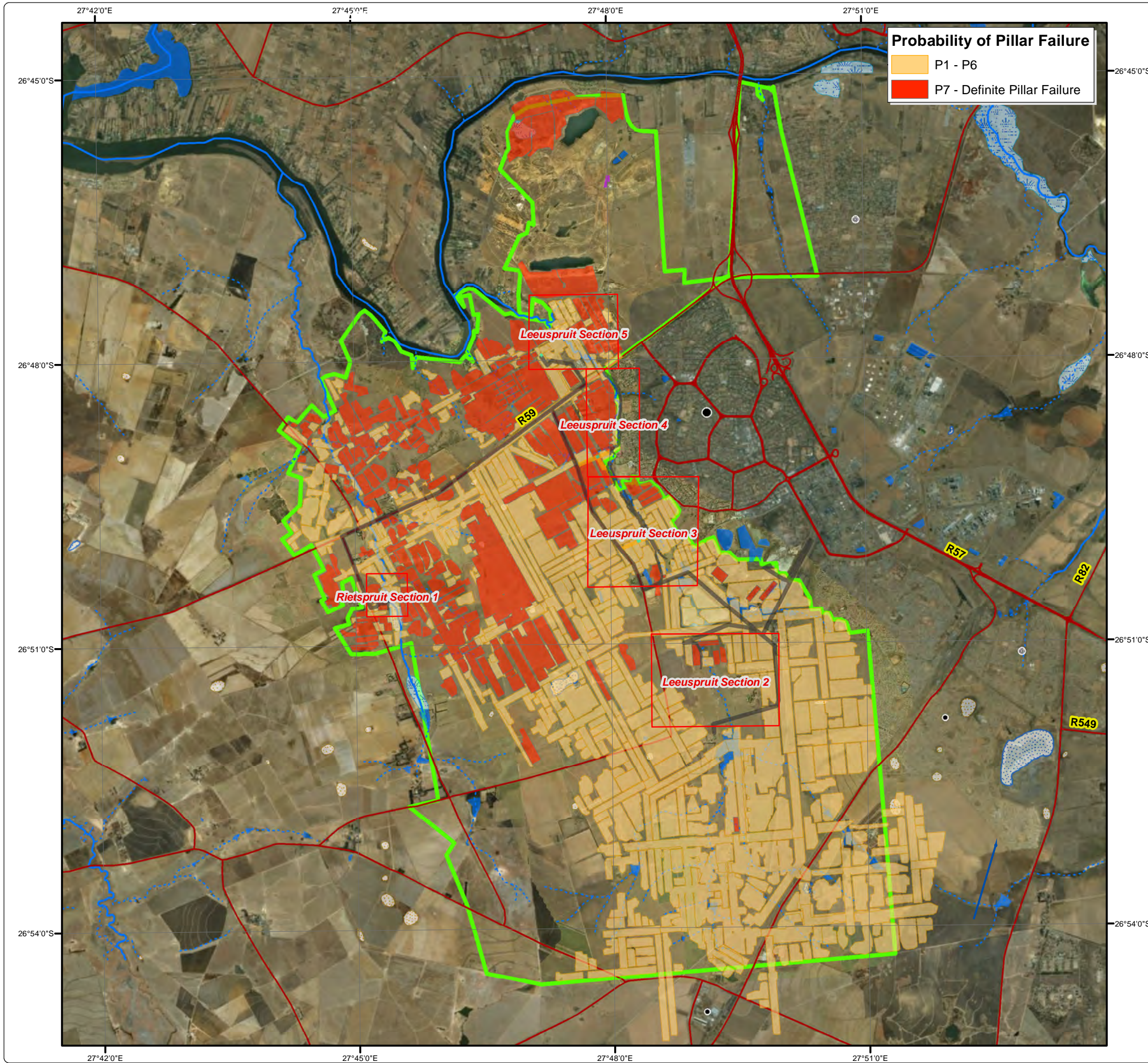
Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.132
 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 10/10/2018

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


Kilometres

1:75 000



Sasol Sigma River Diversion Surface Mitigation Measure Leeuspruit Section 2

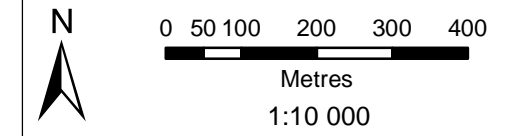
Legend

-  Defunct Sigma Mining Right Boundary
-  Main Road
-  Non-Perennial River
- Existing Infrastructure**
-  Existing road
- Proposed Surface Infrastructure**
-  Flood Protection Berm
- Historic Mining Areas**
-  Underground Mining
-  Significant Areas of Probable Pillar Failure



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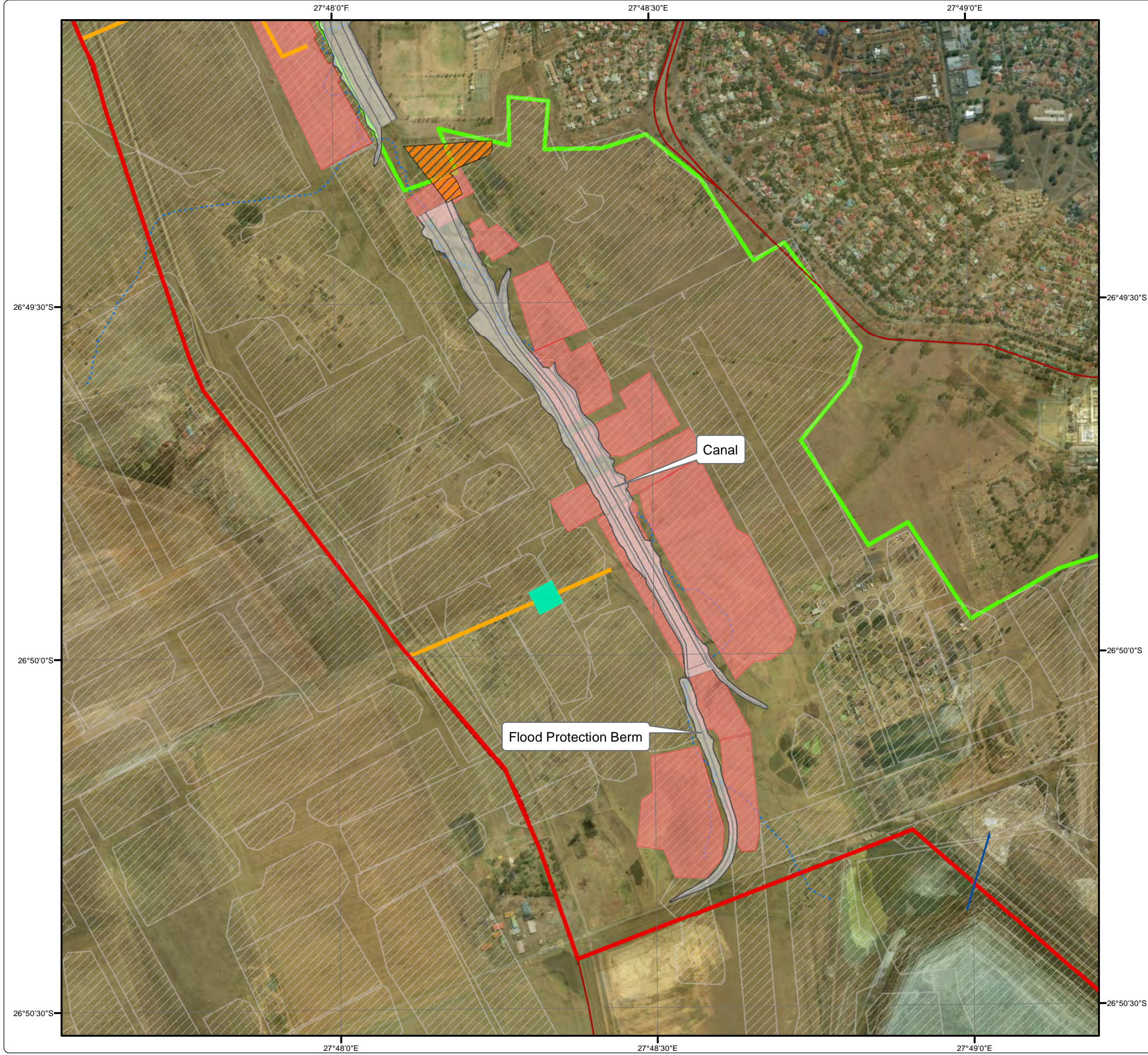
Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.132
 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 10/10/2018



Sasol Sigma River Diversion Surface Mitigation Measure Leeuspruit Section 3

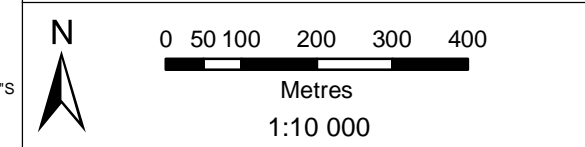
Legend

-  Defunct Sigma Mining Right Boundary
-  Main Road
-  Non-Perennial River
-  No Go Area
- Existing Infrastructure**
-  Existing road
- Proposed Surface Infrastructure**
-  New Road
-  Canal and Flood Protection Berm
-  Batching Plant
- Historic Mining Areas**
-  Underground Mining
-  Significant Areas of Probable Pillar Failure

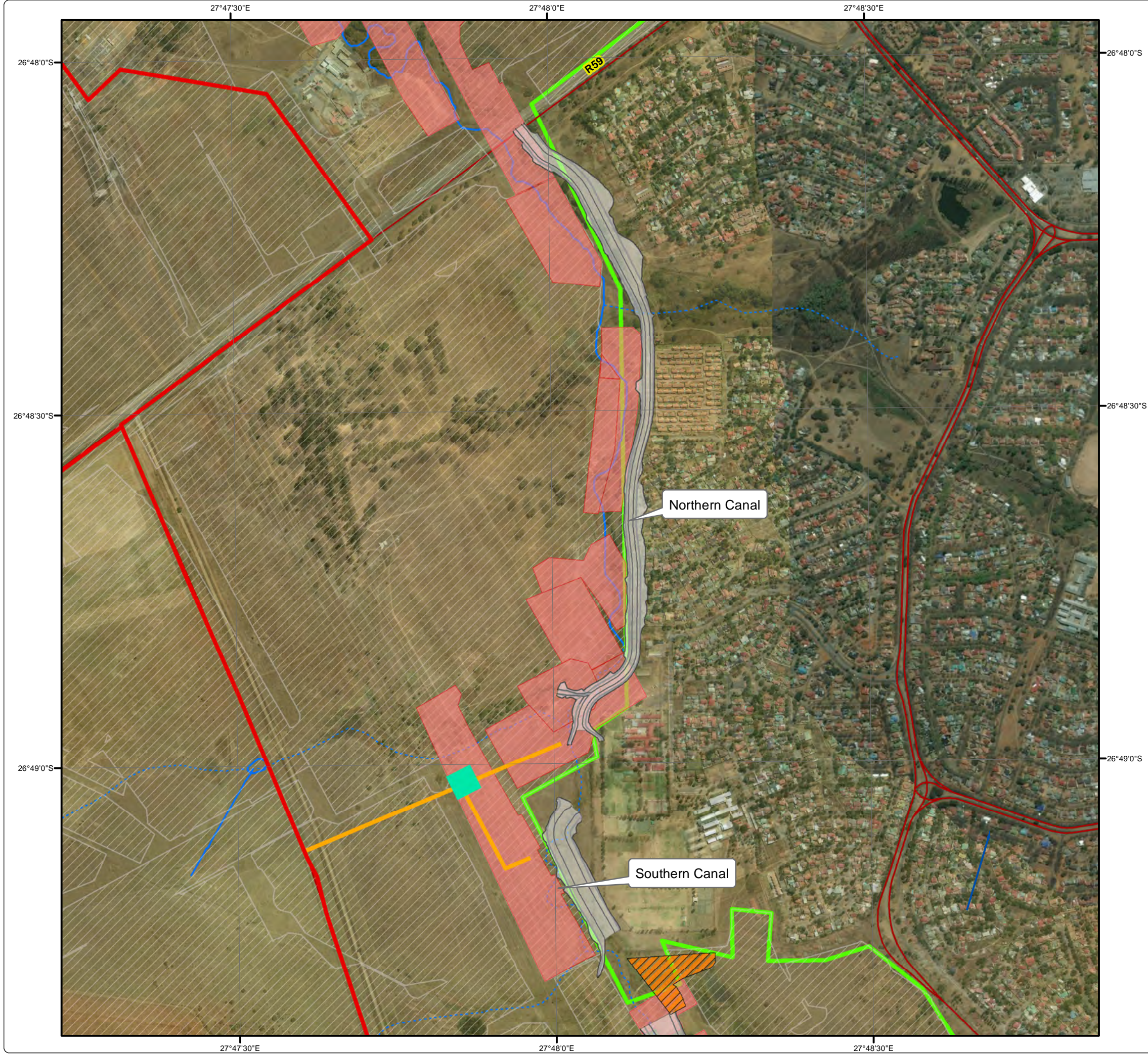


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Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.133
 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 10/10/2018



Sasol Sigma River Diversion Surface Mitigation Measure Leeuspruit Section 4



Legend

- Defunct Sigma Mining Right Boundary
- Main Road
- Perennial River
- Non-Perennial River
- No Go Area
- Existing Infrastructure**
- Existing road
- Proposed Surface Infrastructure**
- New Road
- Canal
- Batching Plant
- Historic Mining Areas**
- Underground Mining
- Significant Areas of Probable Pillar Failure

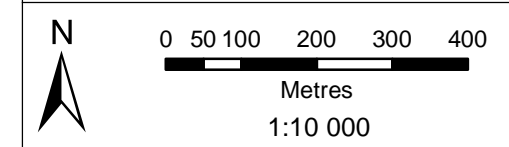
Northern Canal

Southern Canal












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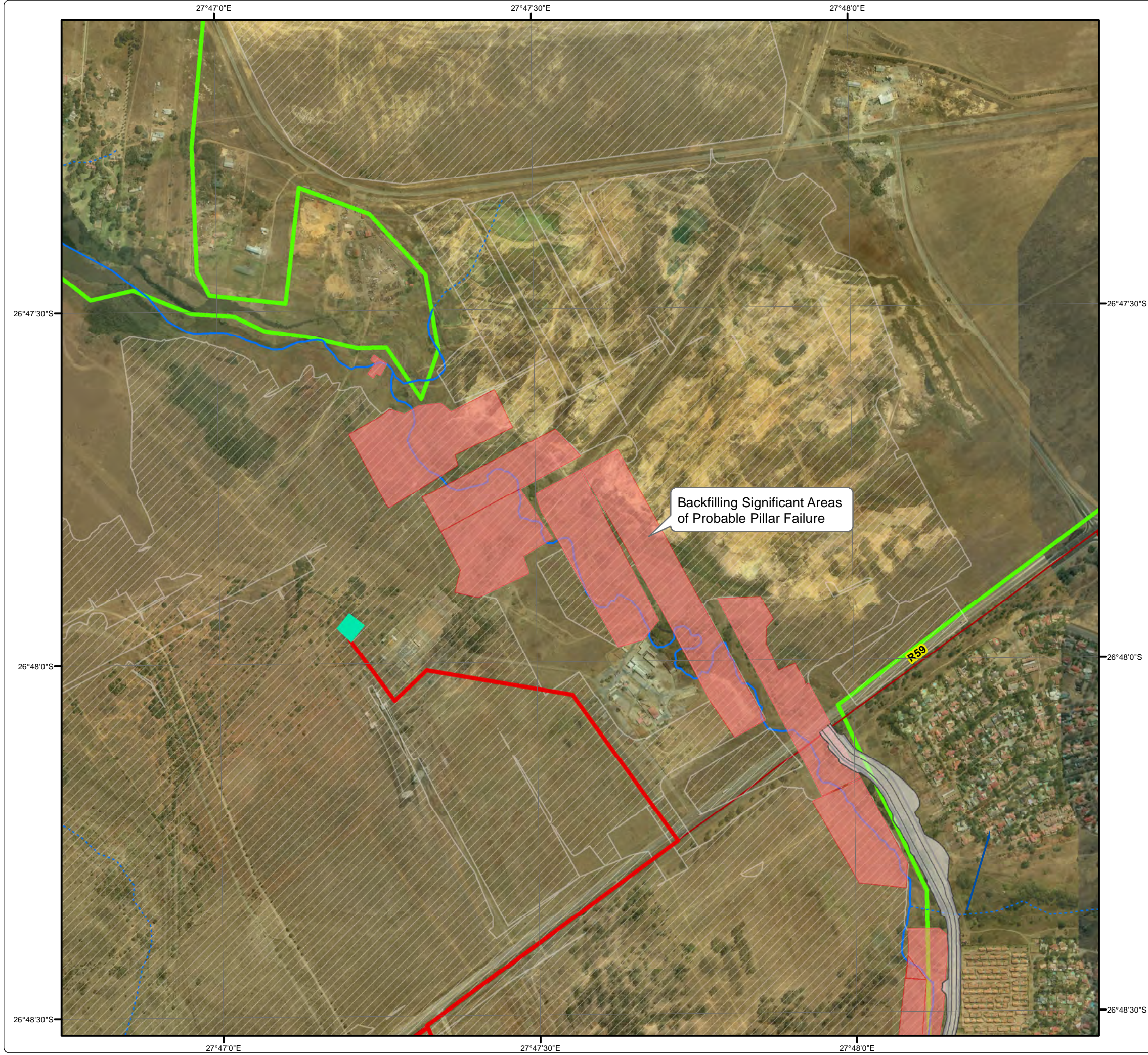
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 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 10/10/2018



Sasol Sigma River Diversion Surface Mitigation Measure Leeuspruit Section 5

Legend

-  Defunct Sigma Mining Right Boundary
-  Main Road
-  Perennial River
-  Non-Perennial River
- Existing Infrastructure**
-  Existing road
- Proposed Surface Infrastructure**
-  Flood Protection Berm and Canal
-  Batching Plant
- Historic Mining Areas**
-  Underground Mining
-  Significant Areas of Probable Pillar Failure



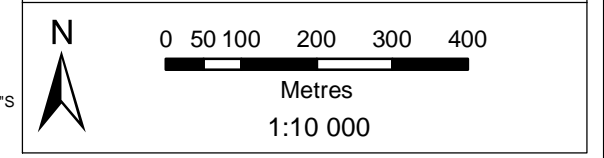
Backfilling Significant Areas of Probable Pillar Failure

R59



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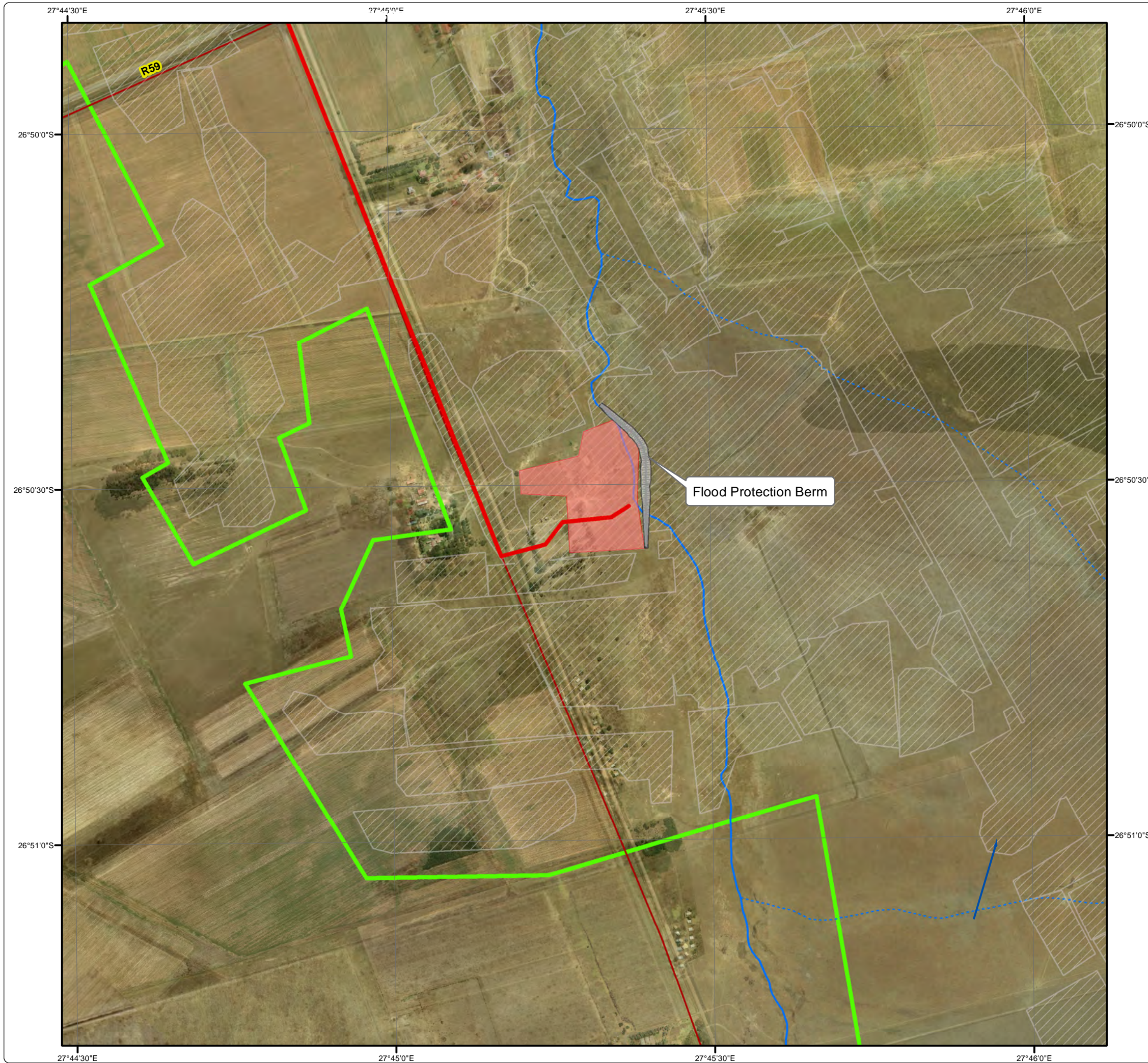
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 Central Meridian: 27°E Date: 10/10/2018



Sasol Sigma River Diversion Surface Mitigation Measure Rietspruit Section 1

Legend

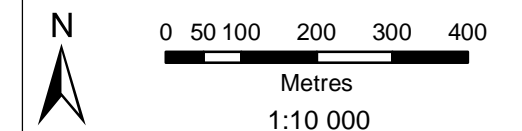
-  Defunct Sigma Mining Right Boundary
-  Main Road
-  Perennial River
-  Non-Perennial River
- Existing Infrastructure**
-  Existing Road
- Proposed Surface Infrastructure**
-  Flood Protection Berm
- Historic Mining Areas**
-  Undergrund Mining
-  Significant Areas of Probable Pillar Failure



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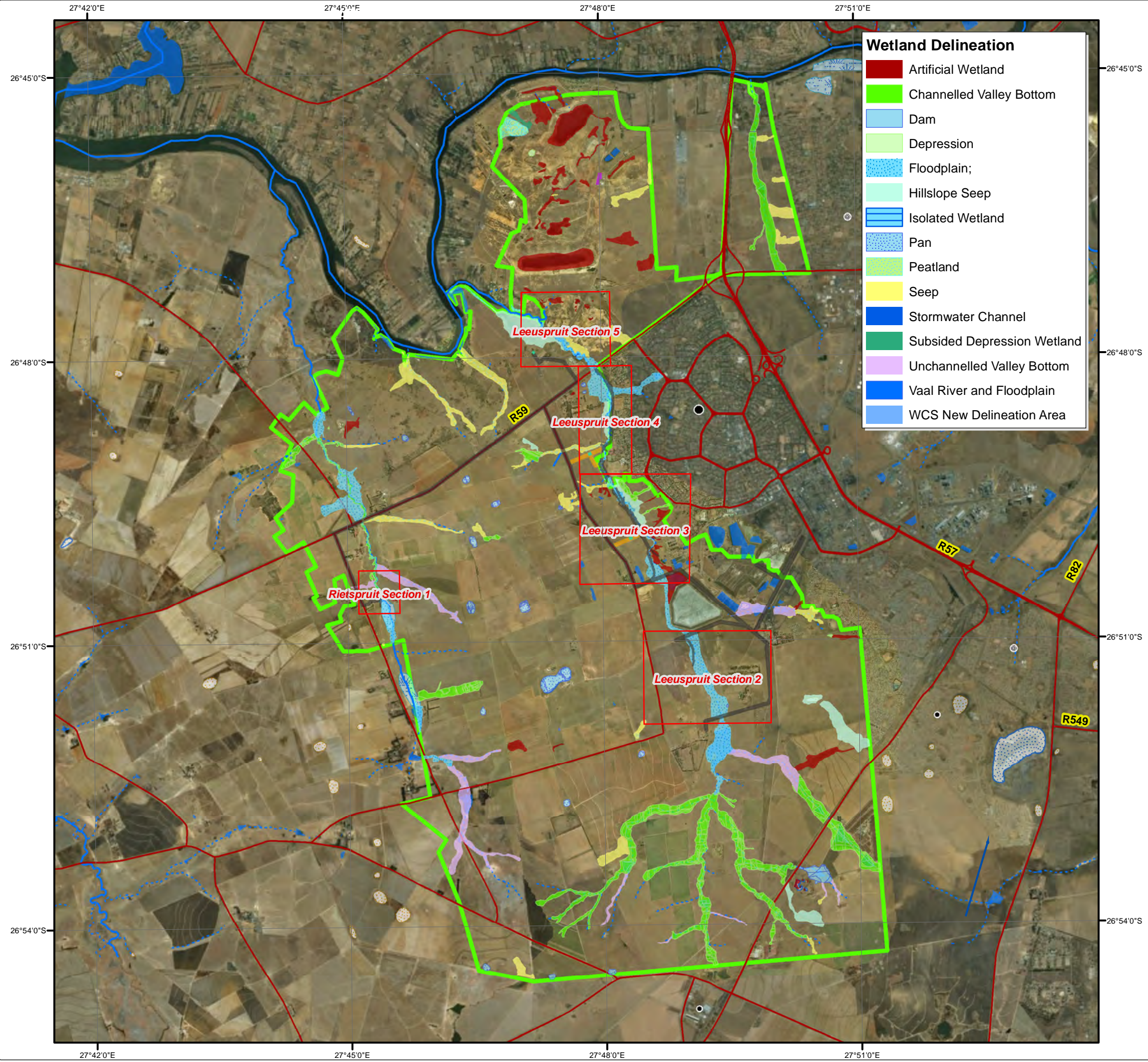
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Projection: Transverse Mercator	Ref #: ajm.SAS5250.201810.137
Datum: Cape	Revision Number: 1
Central Meridian: 27°E	Date: 10/10/2018



Sasol Sigma River Diversion

Wetland Delineation



Wetland Delineation

- Artificial Wetland
- Channelled Valley Bottom
- Dam
- Depression
- Floodplain;
- Hillslope Seep
- Isolated Wetland
- Pan
- Peatland
- Seep
- Stormwater Channel
- Subsided Depression Wetland
- Unchannelled Valley Bottom
- Vaal River and Floodplain
- WCS New Delineation Area

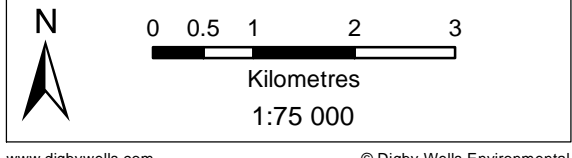
Legend

- Defunct Sigma Mining Right Boundary
- Major Town
- Other Town
- Settlement
- Main Road
- Perennial River
- Non-Perennial River
- Dam
- Wetland
- Perennial Pan
- Non-Perennial Pan
- Existing Infrastructure**
- Existing Road
- Proposed Infrastructure**
- New Road
- Surface Mitigation Infrastructure
- Batching Plant
- Laydown Area
- River Diversion Section


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Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.144
Datum: Cape Revision Number: 1
Central Meridian: 27°E Date: 12/10/2018

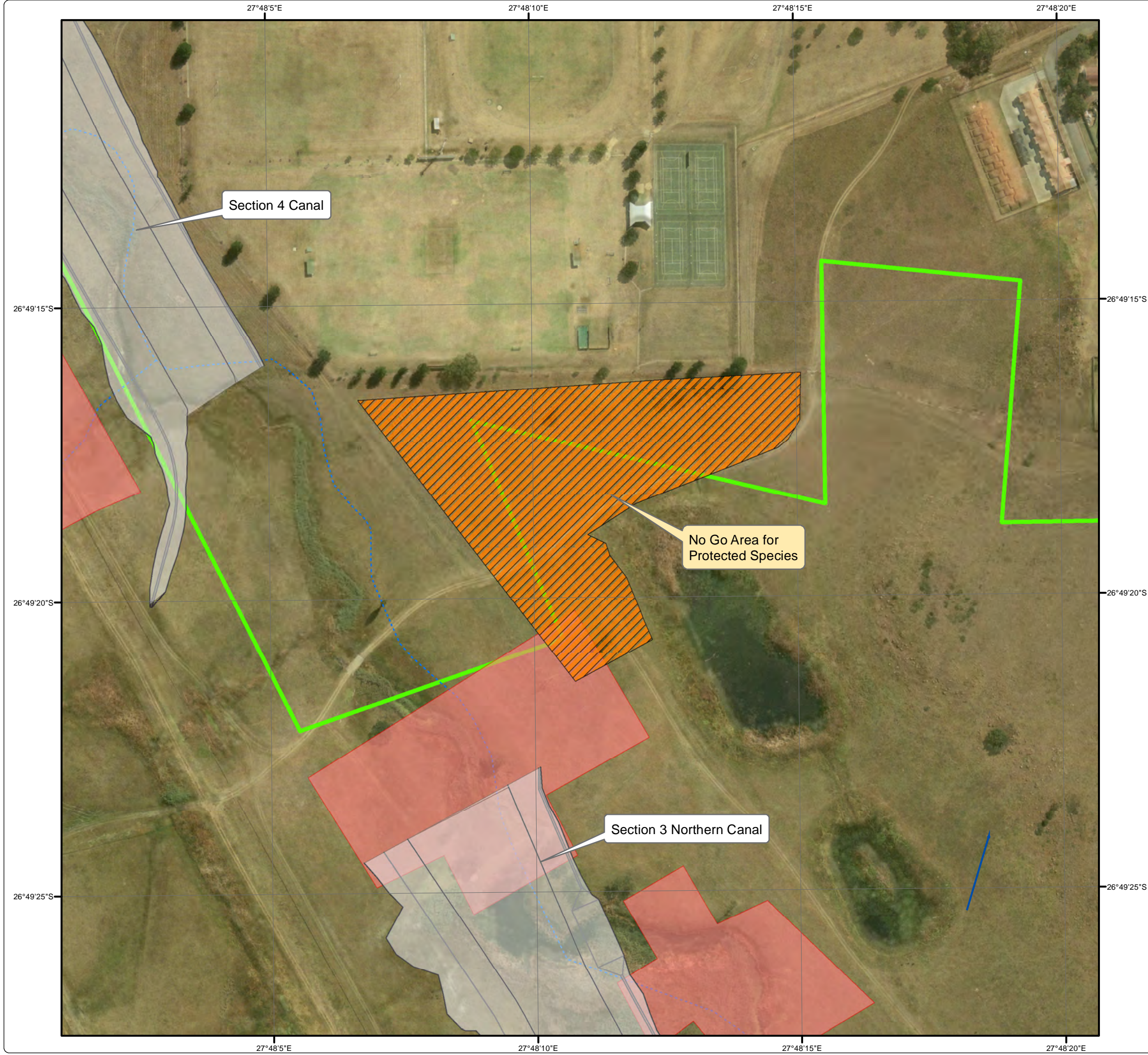


Sasol Sigma River Diversion

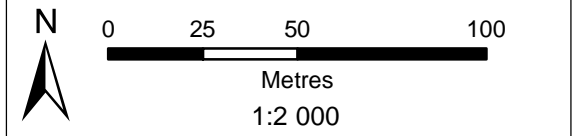
No Go Area for Protected Species

Legend

-  Defunct Sigma Mining Right Boundary
 -  Non-Perennial River
 -  No Go Area
 -  Significant Areas of Probable Pillar Failure
- Proposed Surface Infrastructure**
-  Canal



Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.145
 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 12/10/2018



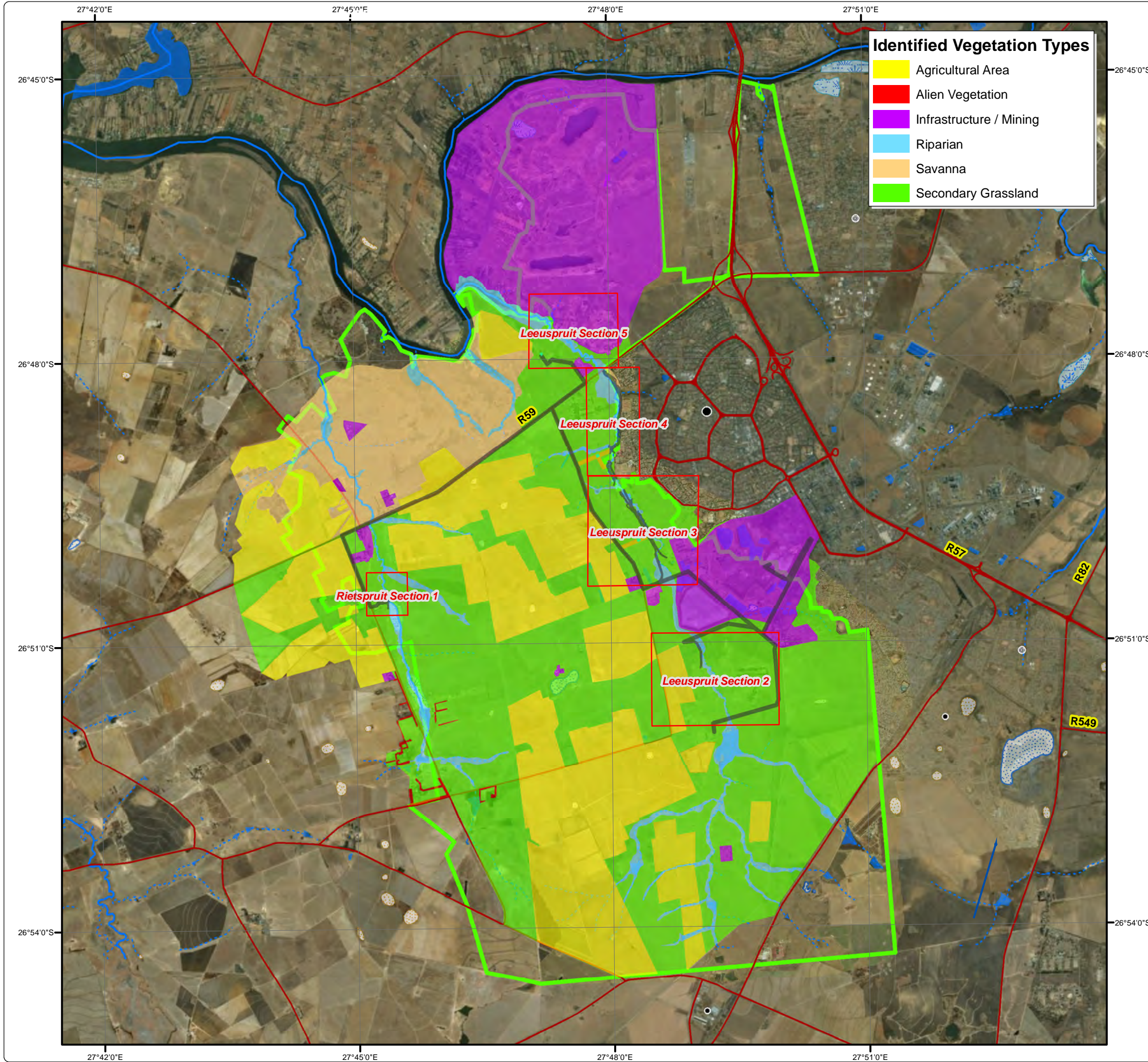
Sasol Sigma River Diversion Identified Vegetation Communities

Identified Vegetation Types

- Agricultural Area
- Alien Vegetation
- Infrastructure / Mining
- Riparian
- Savanna
- Secondary Grassland

Legend

- Defunct Sigma Mining Right Boundary
- Major Town
- Other Town
- Settlement
- Main Road
- Perennial River
- Non-Perennial River
- Dam
- Wetland
- Perennial Pan
- Non-Perennial Pan
- Existing Infrastructure**
- Existing road
- Proposed Infrastructure**
- New Road
- Surface Mitigation Infrastructure
- Batching Plant
- Laydown Area
- River Diversion Section



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Projection: Transverse Mercator	Ref #: ajm.SAS5250.201810.146
Datum: Cape	Revision Number: 1
Central Meridian: 27°E	Date: 12/10/2018

N

Kilometres
1:75 000

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Sasol Sigma River Diversion

Monitoring Locations for Environmental Aspects

Monitoring

- Surface Water Monitoring Point
- Aquatic Biomonitoring Point

Legend

- Defunct Sigma Mining Right Boundary
- Major Town
- Other Town
- Settlement
- Main Road
- Perennial River
- Non-Perennial River
- Dam
- Wetland
- Perennial Pan
- Non-Perennial Pan
- Existing Infrastructure**
 - Existing road
- Proposed Infrastructure**
 - New Road
 - Surface Mitigation Infrastructure
 - Batching Plant
 - Laydown Area
 - River Diversion Section

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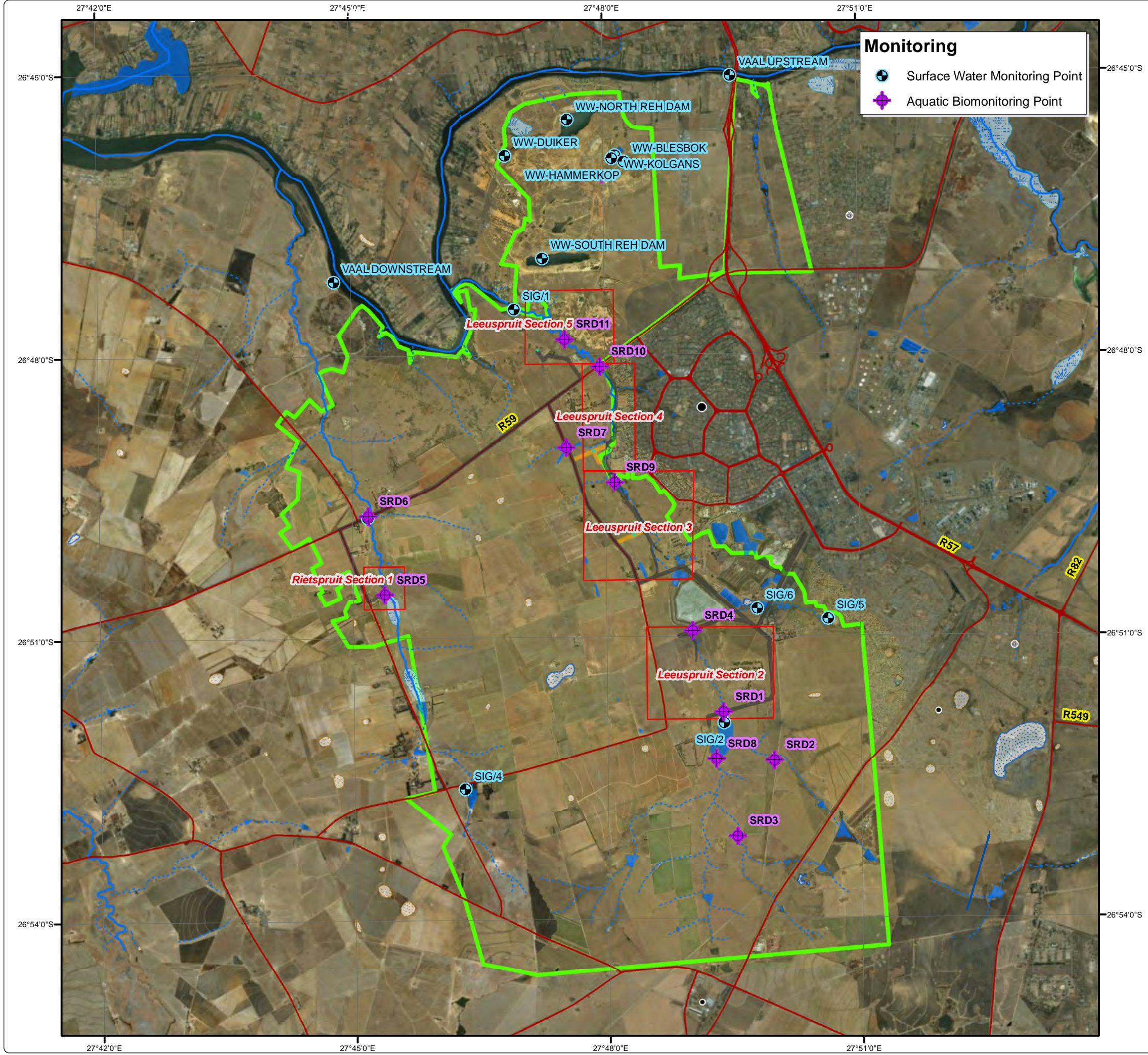
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 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 12/10/2018

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Kilometres


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Sasol Sigma River Diversion

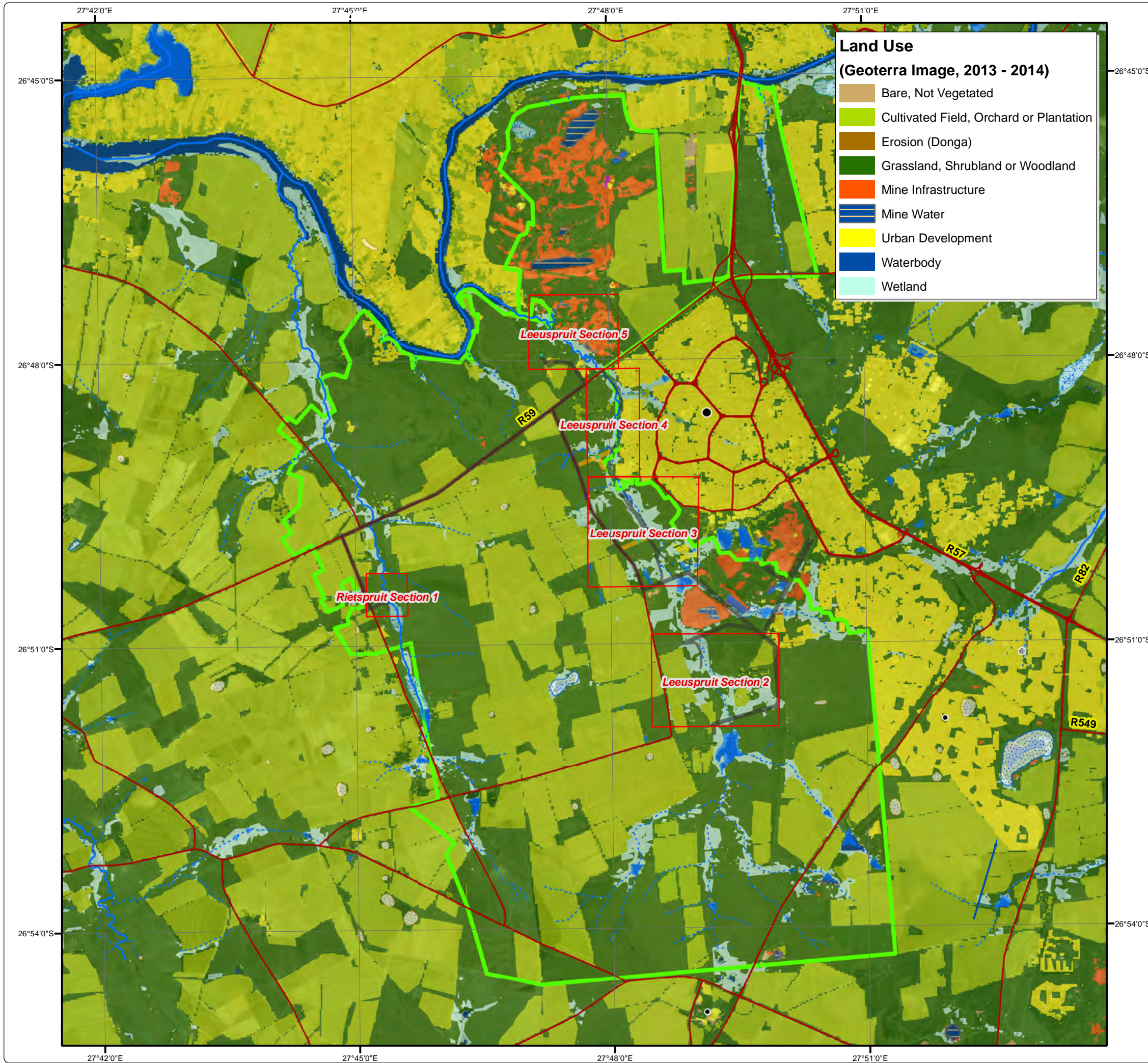
Land Use

Land Use
(Geoterra Image, 2013 - 2014)

-  Bare, Not Vegetated
-  Cultivated Field, Orchard or Plantation
-  Erosion (Donga)
-  Grassland, Shrubland or Woodland
-  Mine Infrastructure
-  Mine Water
-  Urban Development
-  Waterbody
-  Wetland

Legend

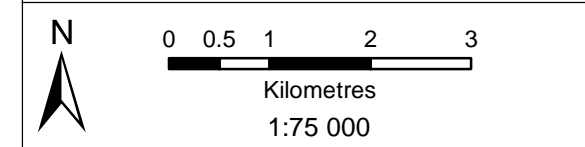
-  Defunct Sigma Mining Right Boundary
-  Major Town
-  Other Town
-  Settlement
-  Main Road
-  Perennial River
-  Non-Perennial River
-  Dam
-  Wetland
-  Perennial Pan
-  Non-Perennial Pan
- Existing Infrastructure**
-  Existing Road
- Proposed Infrastructure**
-  New Road
-  Surface Mitigation Infrastructure
-  Batching Plant
-  Laydown Area
-  River Diversion Section




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Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.149
Datum: Cape Revision Number: 1
Central Meridian: 27°E Date: 12/10/2018



Sasol Sigma River Diversion

Composite Map

Composite Layers

- Soil Sampling Location
- Aquatic Biomonitoring Point
- Surface Water Monitoring Point
- Heritage Resource

Aquatics Plant Species

- Species List A
- Species List C
- Species List B

Post Construction Floodlines

- 1:100yr
- 1:50yr

Floodlines

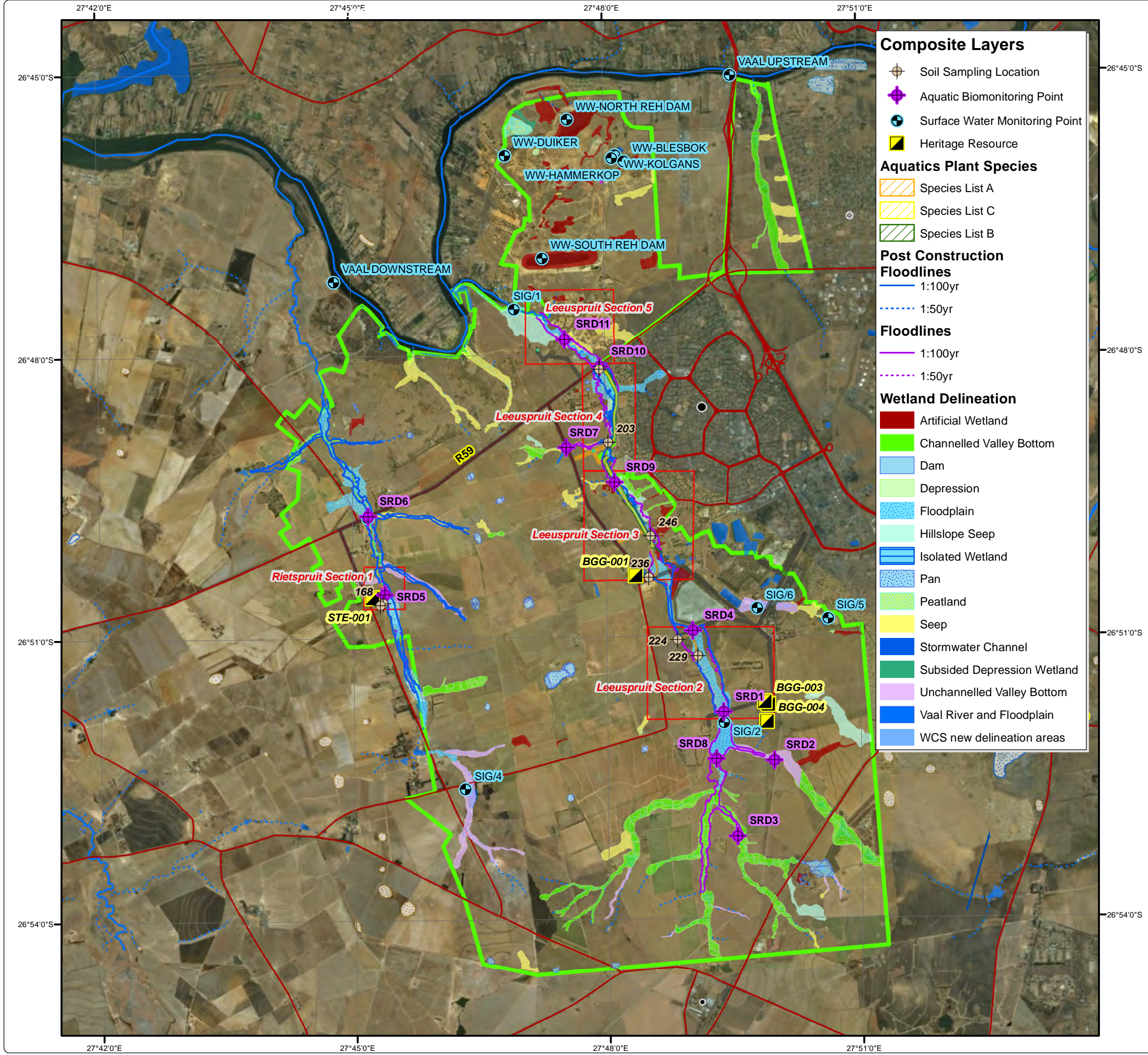
- 1:100yr
- 1:50yr

Wetland Delineation

- Artificial Wetland
- Channelled Valley Bottom
- Dam
- Depression
- Floodplain
- Hillslope Seep
- Isolated Wetland
- Pan
- Peatland
- Seep
- Stormwater Channel
- Subsided Depression Wetland
- Unchannelled Valley Bottom
- Vaal River and Floodplain
- WCS new delineation areas

Legend

- Defunct Sigma Mining Right Boundary
- Major Town
- Other Town
- Settlement
- Main Road
- Perennial River
- Non-Perennial River
- Dam
- Wetland
- Perennial Pan
- Non-Perennial Pan
- Existing Infrastructure
- Existing road
- Proposed Infrastructure
- New Road
- Surface Mitigation Infrastructure
- Batching Plant
- Laydown Area
- River Diversion Section



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Projection: Transverse Mercator Ref #: ajm.SAS5250.201810.150
 Datum: Cape Revision Number: 1
 Central Meridian: 27°E Date: 12/10/2018

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Kilometres

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