














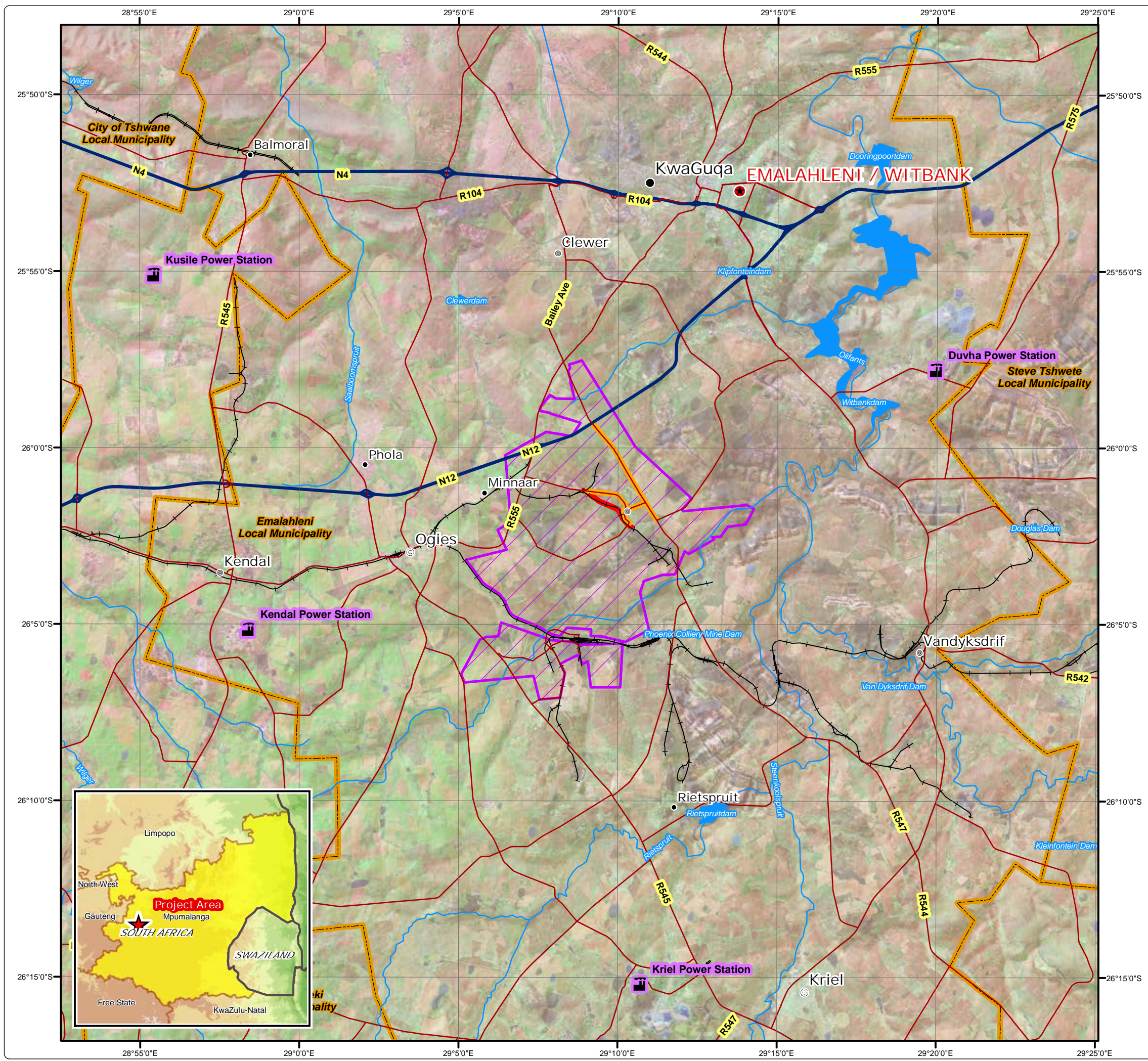


Glencore Tweefontein Road Re-alignment Phase 2 Regional Locality

Legend

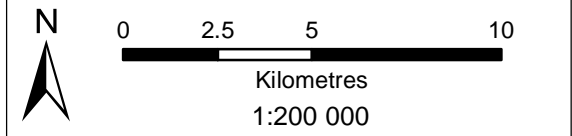
-  Tweefontein Complex Mining Area
-  Phase 2 - This Application
-  Roads to be closed (R547 (P141-1))
-  City
-  Major Town
-  Secondary Town
-  Other Town
-  Settlement
-  Power Station
-  Main Road
-  National Road
-  Railway Line
-  River
-  Dam
-  Local Municipal Boundary




DIGBY WELLS
ENVIRONMENTAL




















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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.004
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015



Glencore Tweefontein Road Re-alignment Phase 2 Site Locality

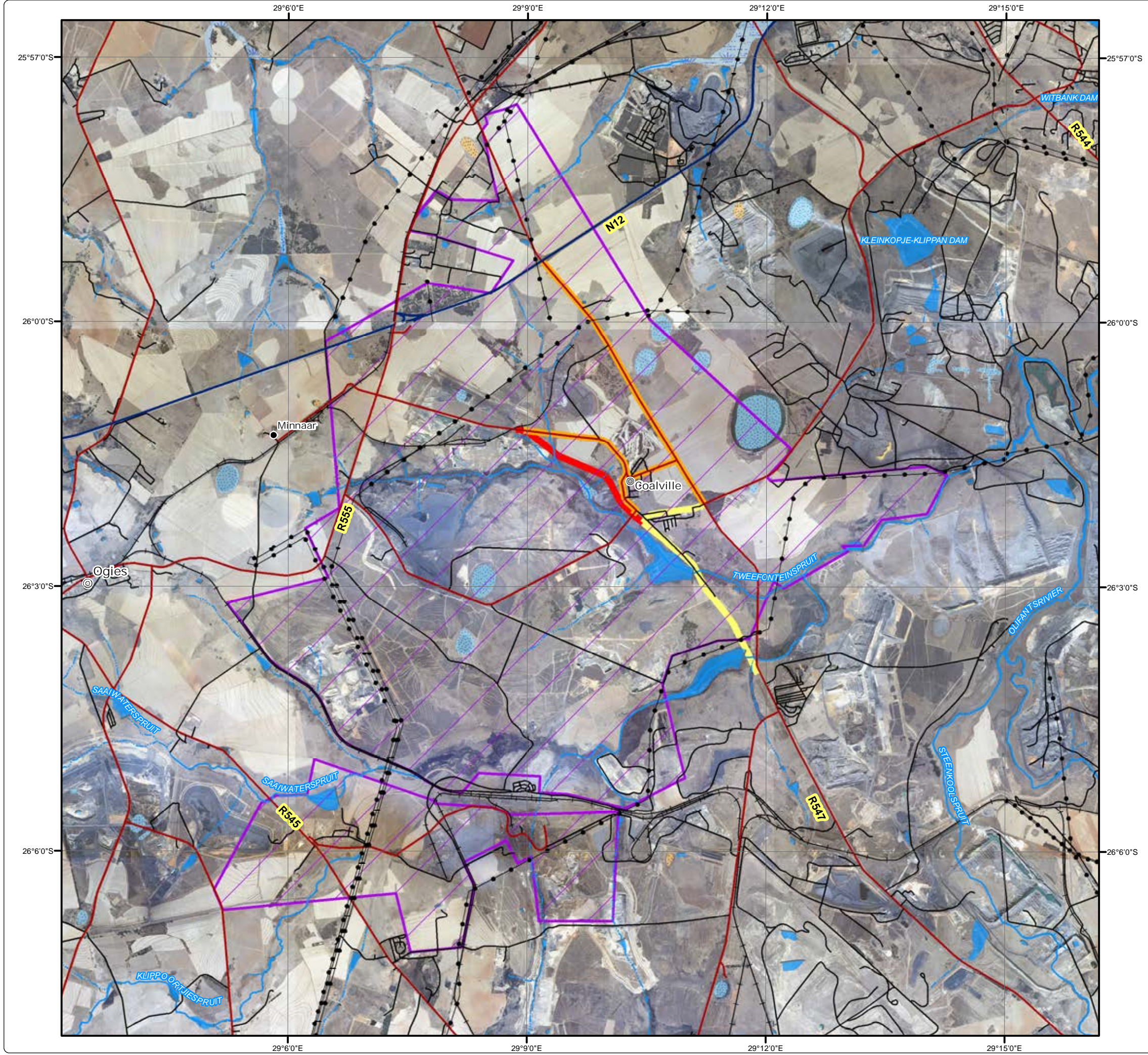
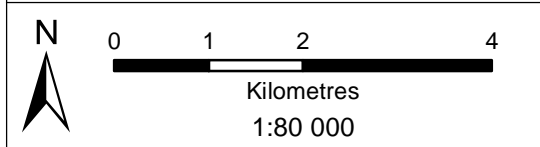
Legend

-  Tweefontein Complex Mining Area
-  Phase 2 - This Application
-  Phase 1 - Separate Application
-  Roads to be closed (R547 (P141-1))
-  Secondary Town
-  Other Town
-  Settlement
-  Power Line
-  Arterial / National Route
-  Main Road
-  Minor Road
-  Railway Line
-  Non-Perennial Stream
-  Perennial Stream
-  Dam Wall
-  Dam / Lake
-  Non-Perennial Pan / Stream
-  Perennial Pan
-  Wetland



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Projection: Transverse Mercator	Ref #: sdp.GLE3075.201509.005
Datum: WGS 1984	Revision Number: 1
Central Meridian: 29°E	Date: 01/09/2015

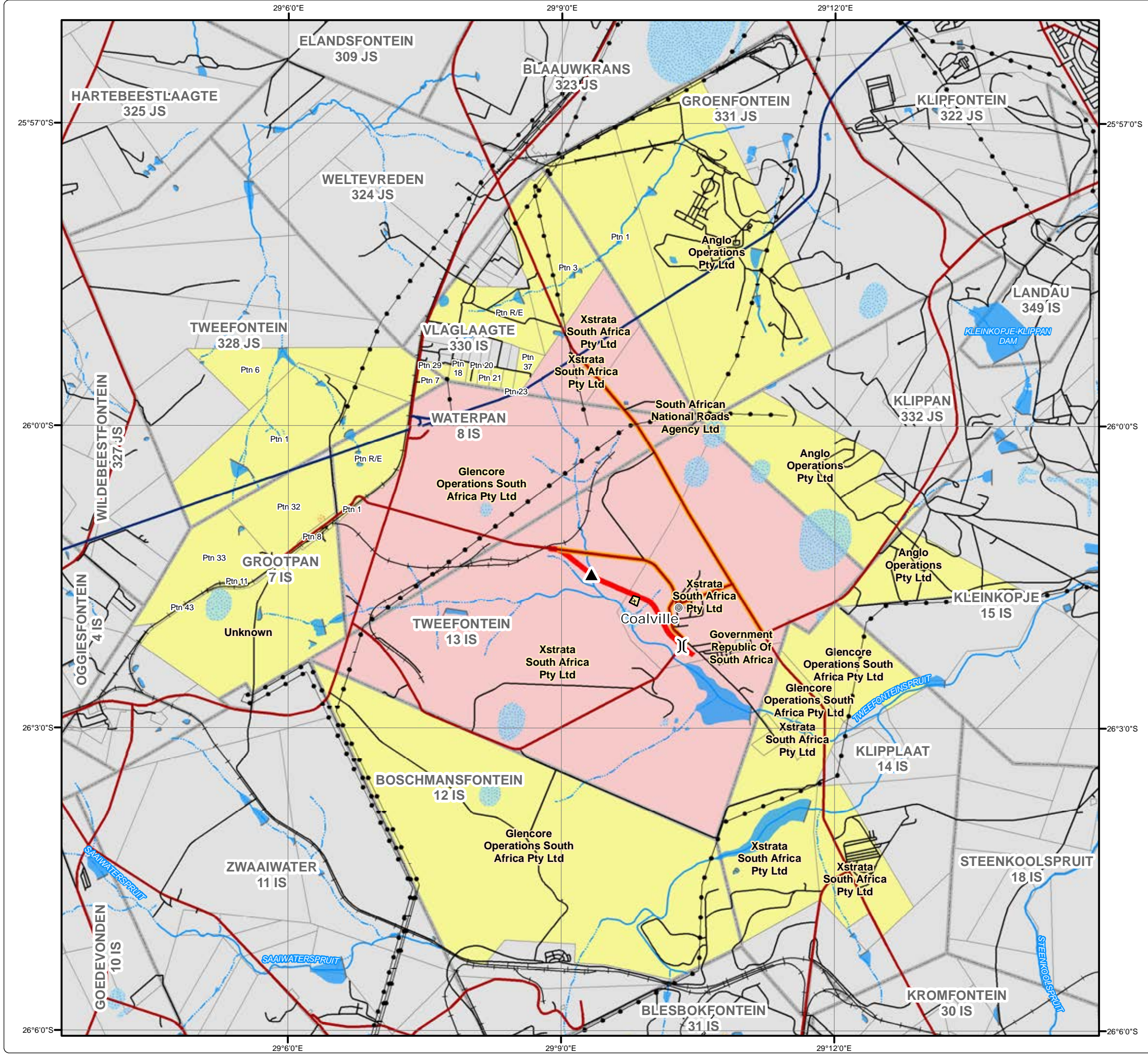


Glencore Tweefontein Road Re-alignment Phase 2

Land Tenure

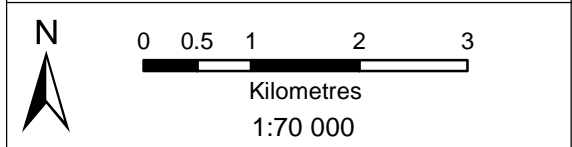
Legend

- Phase 2 - This Application
 - Roads to be closed (R547 (P141-1))
 - } Proposed Bridge
 - ▲ Proposed Culvert
 - Other Town
 - Power Line
 - Arterial / National Route
 - Main Road
 - Minor Road
 - +—+—+ Railway Line
 - - - Non-Perennial Stream
 - Perennial Stream
 - Dam Wall
 - Dam / Lake
 - Perennial Pan
 - Cemetery
 - Farm Portion
 - Parent Farm
- Land Tenure**
- Adjacent
 - Directly Affected



















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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.006
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 02/09/2015



Glencore Tweefontein Road Re-alignment Phase 2 Preferred Route Alignment and Activities

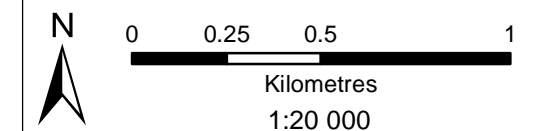
Legend

-  Proposed Bridge
-  Proposed Culvert
-  Phase 2 - This Application
-  Mine Access Road
-  Roads to be closed (R547 (P141-1))
-  Other Town
-  Power Line
-  Main Road
-  Minor Road
-  Railway Line
-  Non-Perennial Stream
-  Perennial Stream
-  Dam Wall
-  Dam / Lake
-  Perennial Pan
-  Cemetery



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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.007
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015



Glencore Tweefontein Road Re-alignment Phase 2

Initial Route Alignment

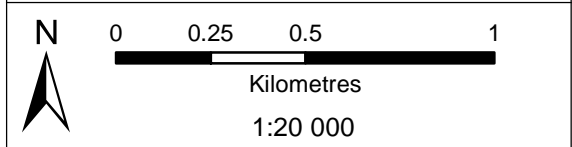
Legend

- ⌋(Proposed Bridge
- ▲ Proposed Culvert
- Initial Road Alignment
- Roads to be closed (R547 (P141-1))
- Other Town
- Main Road
- Minor Road
- +— Railway Line
- - - Non-Perennial Stream
- Perennial Stream
- Dam / Lake
- Perennial Pan
- ⌈⌋ Cemetery



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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.008
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015



Glencore Tweefontein Road Re-alignment Phase 2

Surface Water Monitoring

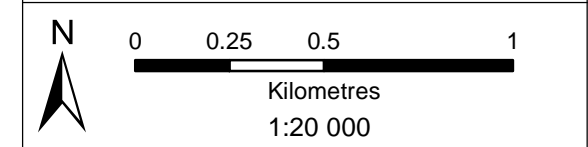
Legend

- Surface Water Monitoring Points
- Proposed Bridge
- Proposed Culvert
- Phase 2 - This Application
- Mine Access Road
- Roads to be closed (R547 (P141-1))
- Other Town
- Power Line
- Main Road
- Minor Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Perennial Pan



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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.009
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015

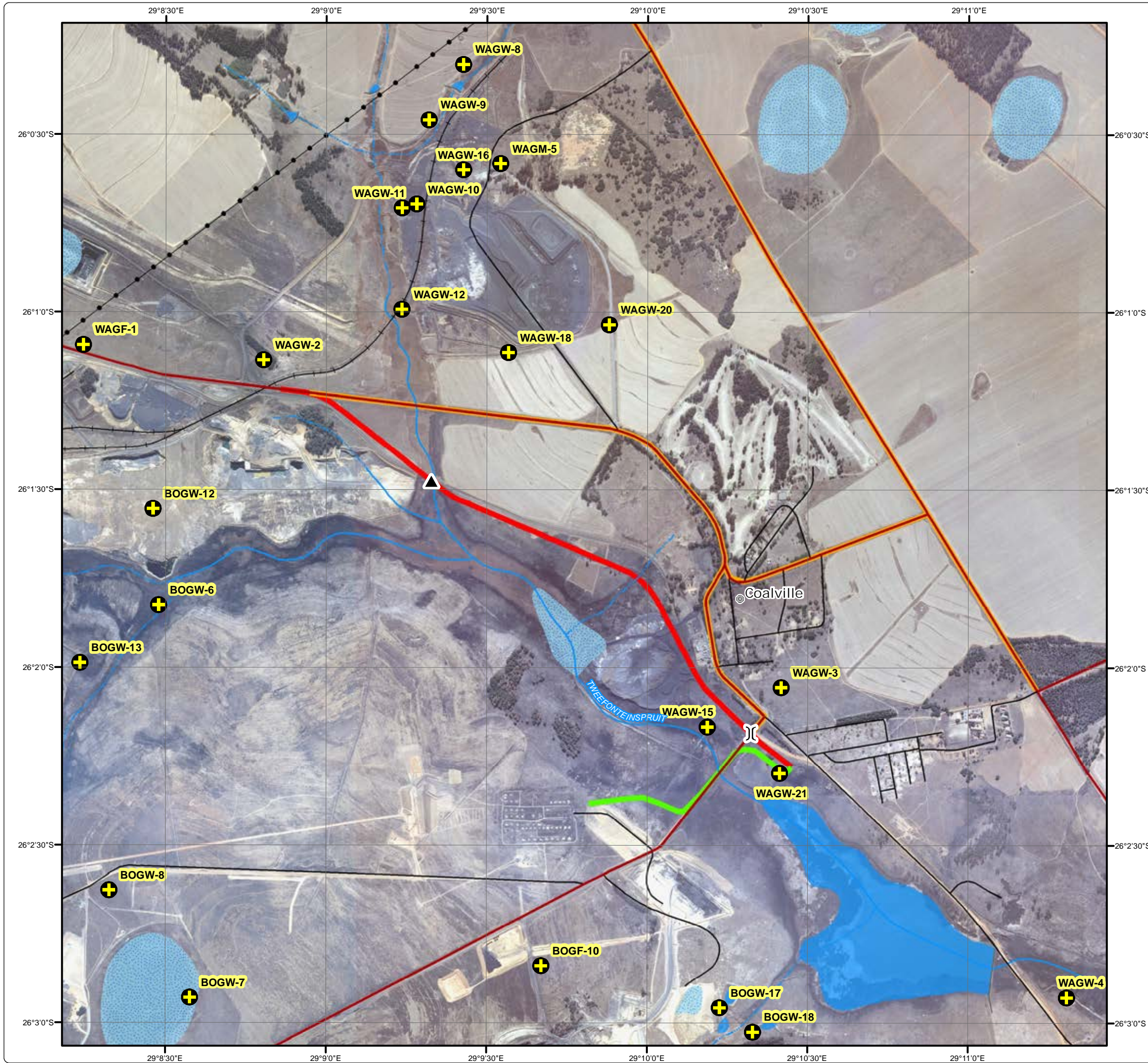


Glencore Tweefontein Road Re-alignment Phase 2

Ground Water Monitoring

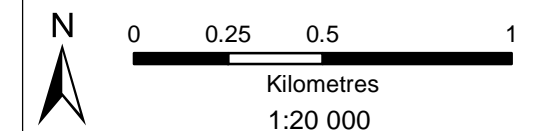
Legend

- Groundwater Monitoring Points
- Proposed Bridge
- Proposed Culvert
- Phase 2 - This Application
- Mine Access Road
- Roads to be closed (R547 (P141-1))
- Other Town
- Power Line
- Main Road
- Minor Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Perennial Pan

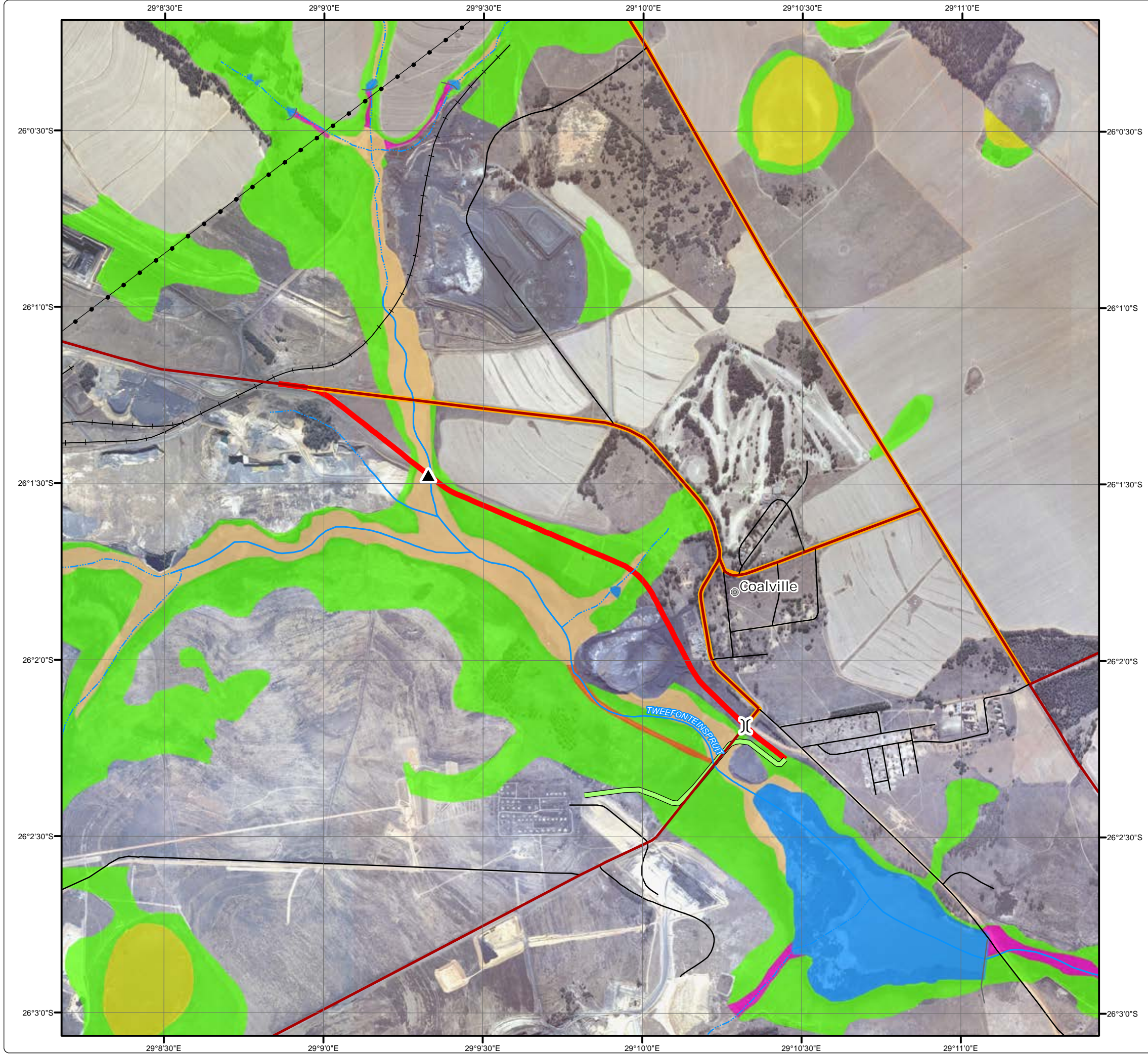


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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.010
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015



Glencore Tweefontein Road Re-alignment Phase 2 Wetlands



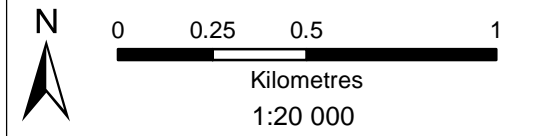
Legend

- }} Proposed Bridge
 - ▲ Proposed Culvert
 - █ Phase 2 - This Application
 - █ Mine Access Road
 - █ Roads to be closed (R547 (P141-1))
 - ⊙ Other Town
 - Power Line
 - █ Main Road
 - █ Minor Road
 - +— Railway Line
 - ⋯ Non-Perennial Stream
 - Perennial Stream
 - Dam Wall
- #### Wetland Classification
- █ Channelled valley bottom
 - █ Dam
 - █ Hillslope seepage
 - █ Pan
 - █ River diversion
 - █ Unchannelled valley bottom



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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.011
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015

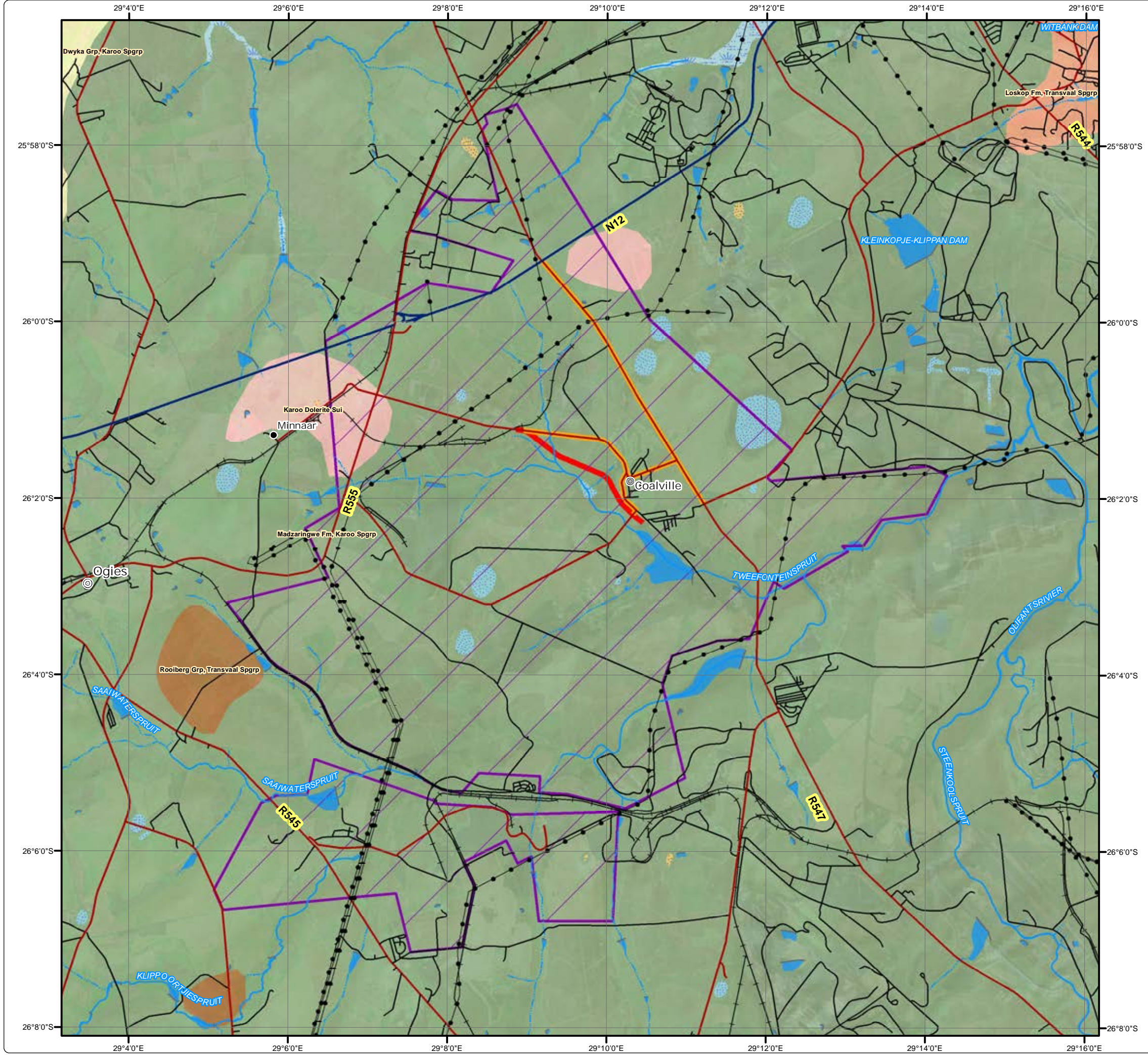


Glencore Tweefontein Road Re-alignment Phase 2

Regional Geology

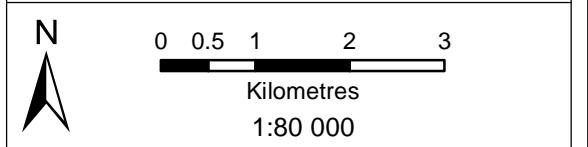
Legend

- Tweefontein Complex Mining Area
 - Phase 2 - This Application
 - Roads to be closed (R547 (P141-1))
 - Secondary Town
 - Other Town
 - Settlement
 - Power Line
 - Arterial / National Route
 - Main Road
 - Minor Road
 - Railway Line
 - Dam Wall
 - Non-Perennial Stream
 - Perennial Stream
 - Dam / Lake
 - Non-Perennial Pan / Stream
 - Perennial Pan
- ### Regional Geology
- Dwyka Grp, Karoo Spgrp
 - Karoo Dolerite Sui
 - Loskop Fm, Transvaal Spgrp
 - Vryheid Fm, Karoo Spgrp
 - Rooiberg Grp, Transvaal Spgrp




















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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.012
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015



Glencore Tweefontein Road Re-alignment Phase 2 Identified Heritage Resources

Legend

-  Tweefontein Complex Mining Area
-  Phase 2 - This Application
-  Roads to be closed (R547 (P141-1))
-  Secondary Town
-  Other Town
-  Settlement
-  Power Line
-  Arterial / National Route
-  Main Road
-  Minor Road
-  Railway Line
-  Dam Wall
-  Non-Perennial Stream
-  Perennial Stream
-  Dam / Lake
-  Non-Perennial Pan / Stream
-  Perennial Pan

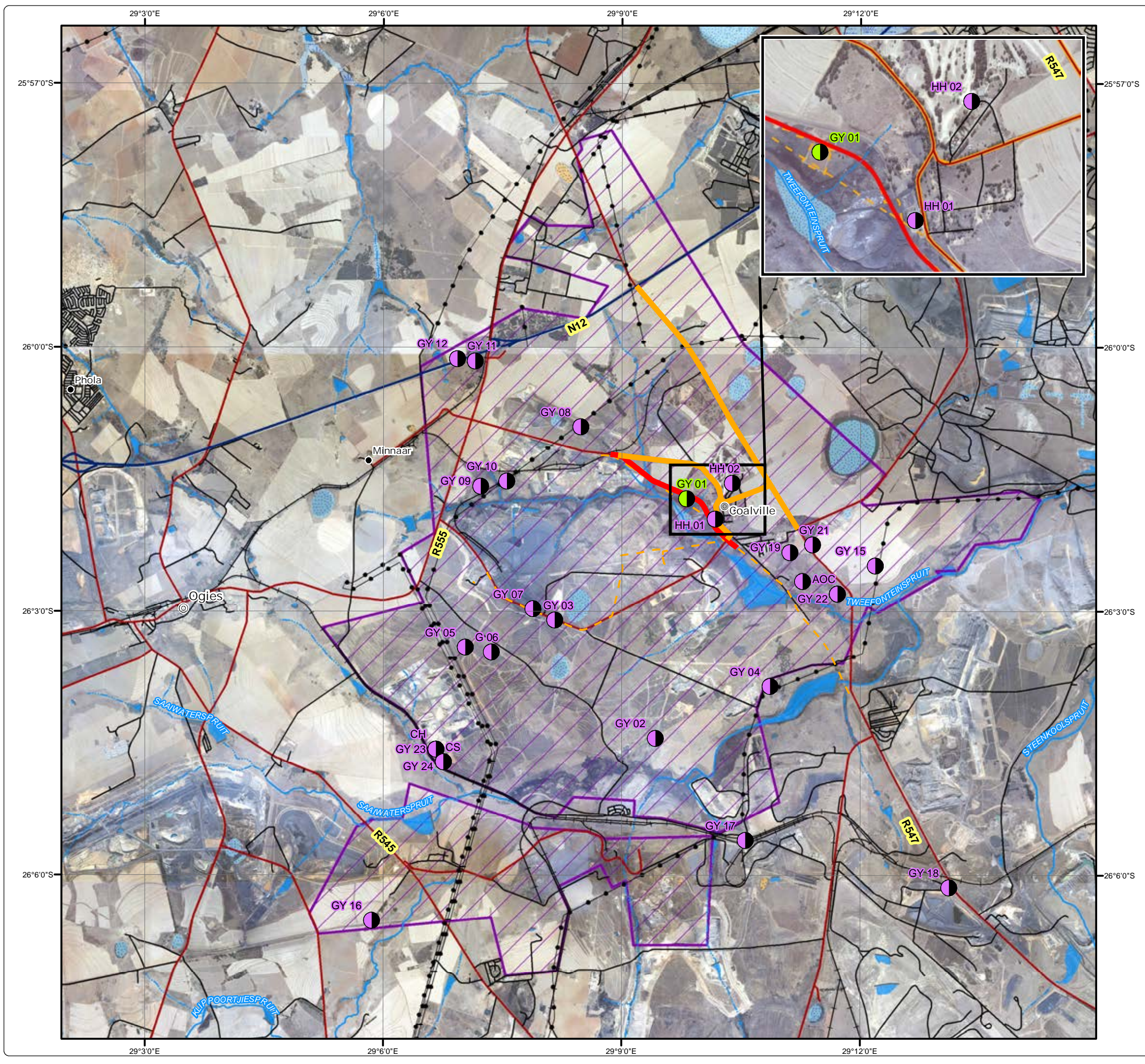
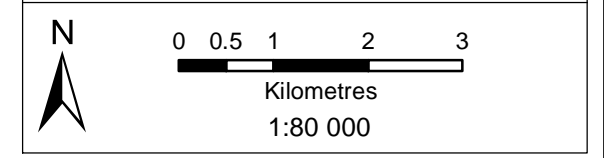
Identified Heritage Resources

-  2015 HIA
-  2013 HIA
-  Heritage Tracks



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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.013
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015



Glencore Tweefontein Road Re-alignment Phase 2 Environment and Current Land Use

Land Use
SANBI, 2009

- Cultivated
- Mines
- Natural
- Plantations
- Urban Built-Up
- Waterbodies

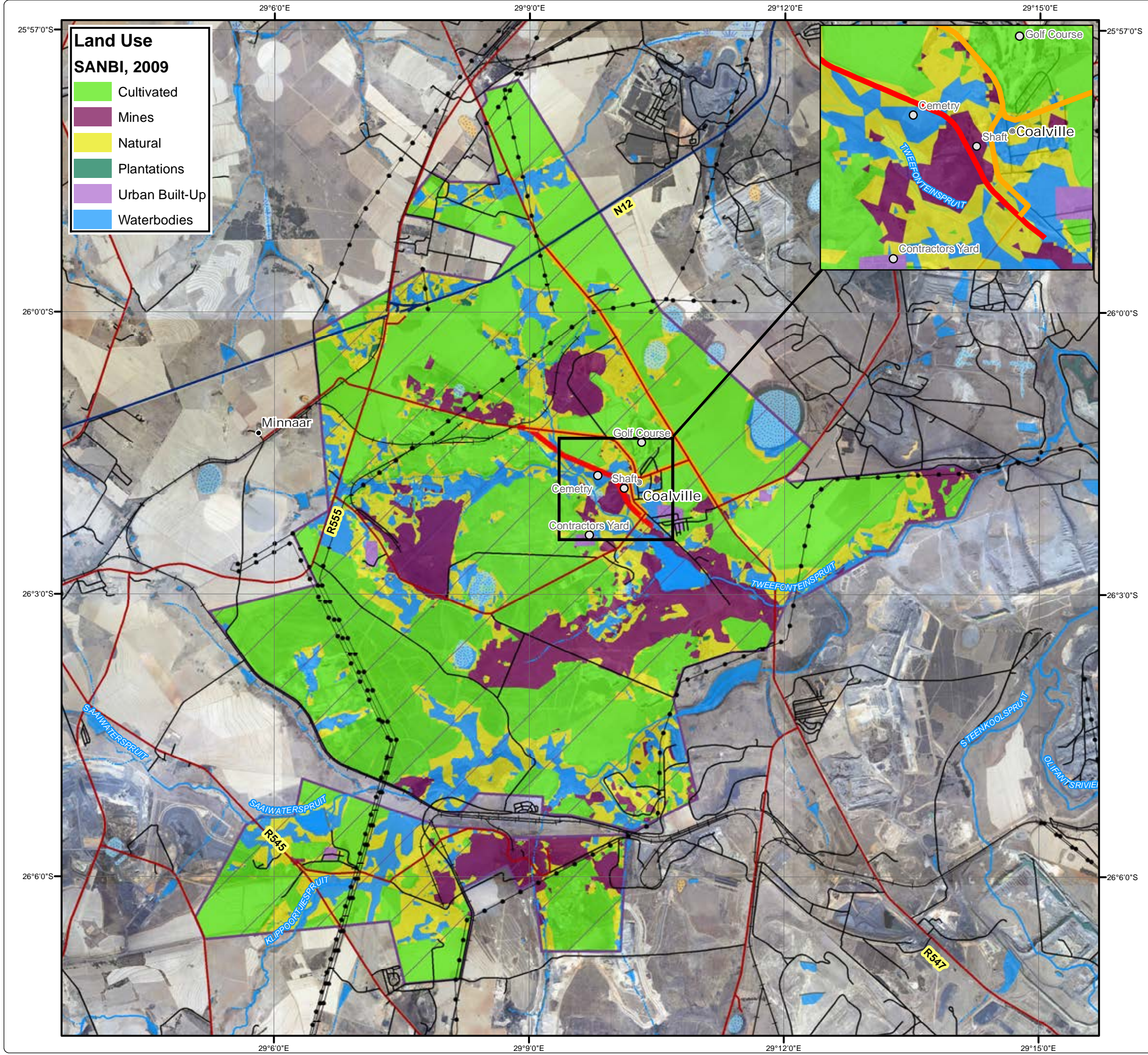
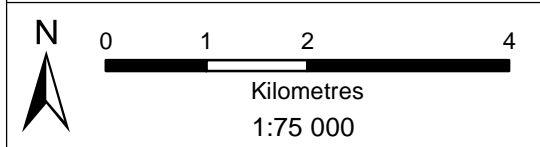
Legend

- Tweefontein Complex Mining Area
- Areas of Interest
- Phase 2 - This Application
- Roads to be closed (R547 (P141-1))
- Other Town
- Settlement
- Power Line
- Arterial / National Route
- Main Road
- Minor Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam / Lake
- Non-Perennial Pan / Stream
- Perennial Pan
- Wetland

















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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.005
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015








Glencore Tweefontein Road Re-alignment Phase 2 Composite Plan

Legend

-  Tweefontein Complex Mining Area
-  Phase 2 - This Application
-  Roads to be closed (R547 (P141-1))
-  Other Town
-  Power Line
-  Arterial / National Route
-  Main Road
-  Minor Road
-  Railway Line
-  Dam Wall
-  Perennial Stream
-  Non - Perennial Stream
-  Dam / Lake
-  Perennial Pan

Sensitive Features

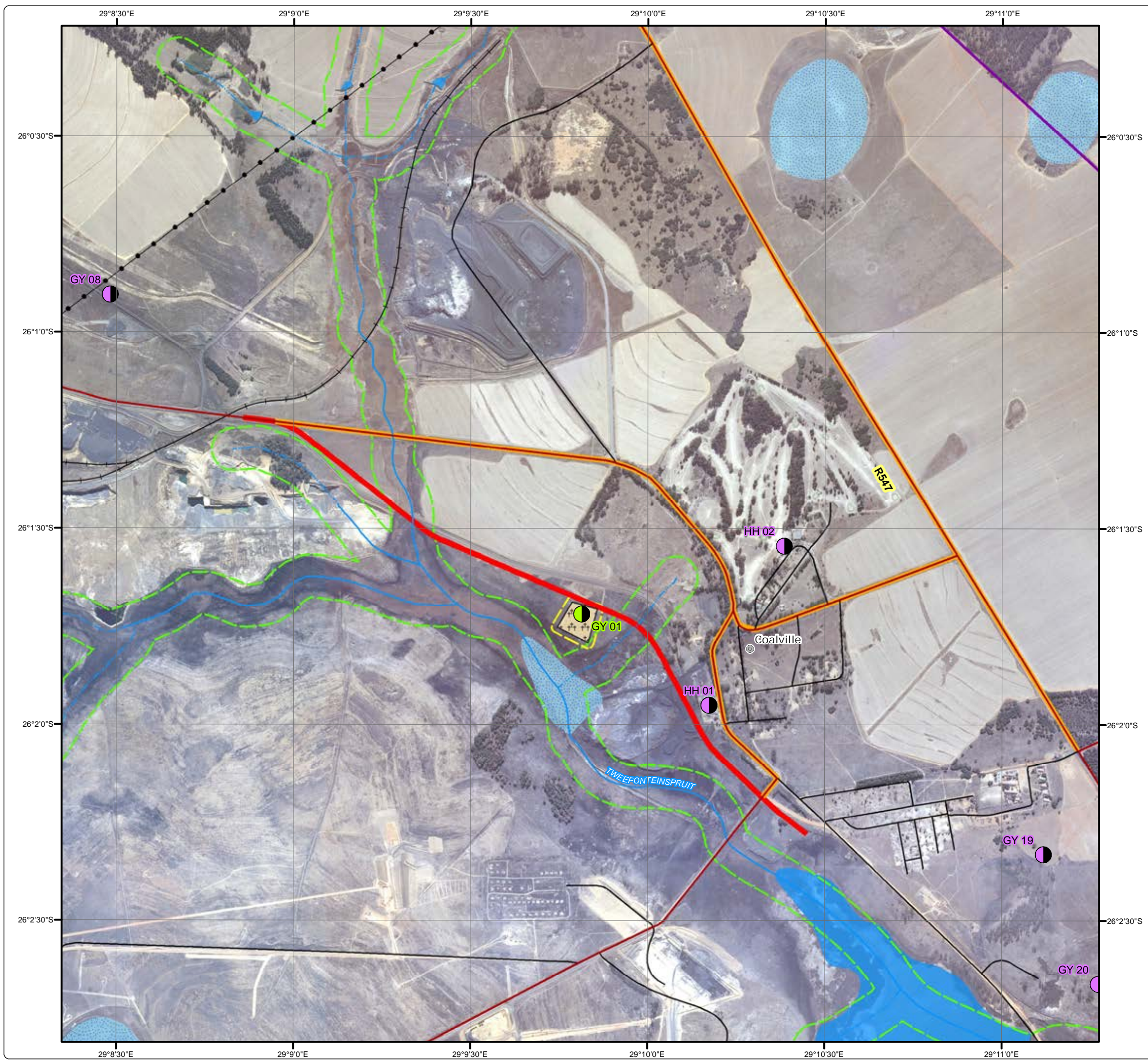
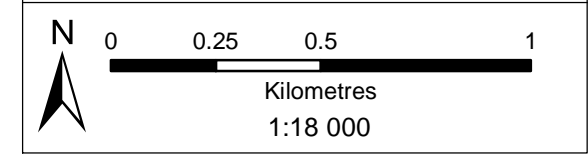
Identified Heritage Resources

-  2015 HIA
-  2013 HIA
-  25m Buffer of Cemetery
-  100m Buffer of River
-  Cemetery






















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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.015
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 29°E Date: 01/09/2015



Glencore Tweefontein Road Re-alignment Phase 2 Site Notice Placement

Legend

-  Tweefontein Complex Mining Area
-  Site Notice Placement
-  Phase 2 - This Application
-  Roads to be closed (R547 (P141-1))
-  Secondary Town
-  Other Town
-  Settlement
-  Power Line
-  Arterial / National Route
-  Main Road
-  Minor Road
-  Railway Line
-  Non-Perennial Stream
-  Perennial Stream
-  Dam Wall
-  Dam / Lake
-  Non-Perennial Pan / Stream
-  Perennial Pan
-  Wetland



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Projection: Transverse Mercator Ref #: sdp.GLE3075.201509.016
Datum: WGS 1984 Revision Number: 1
Central Meridian: 29°E Date: 01/09/2015

