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PROJECT ID 60451502  
 CREATED BY RNM  
 APPROVED BY CT/MJ  
 LAST MODIFIED 14 JAN 2016

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DATUM GDA 1994, PROJECTION MGA ZONE 50

0 5 10 15 20  
 Kilometers

1:750,000 when printed at A4

**LEGEND**

- Project Location (M 47/1439-1)
- Mine Locations
- Homesteads
- Railways
- Major Road
- Minor Road
- Track
- Major Watercourse

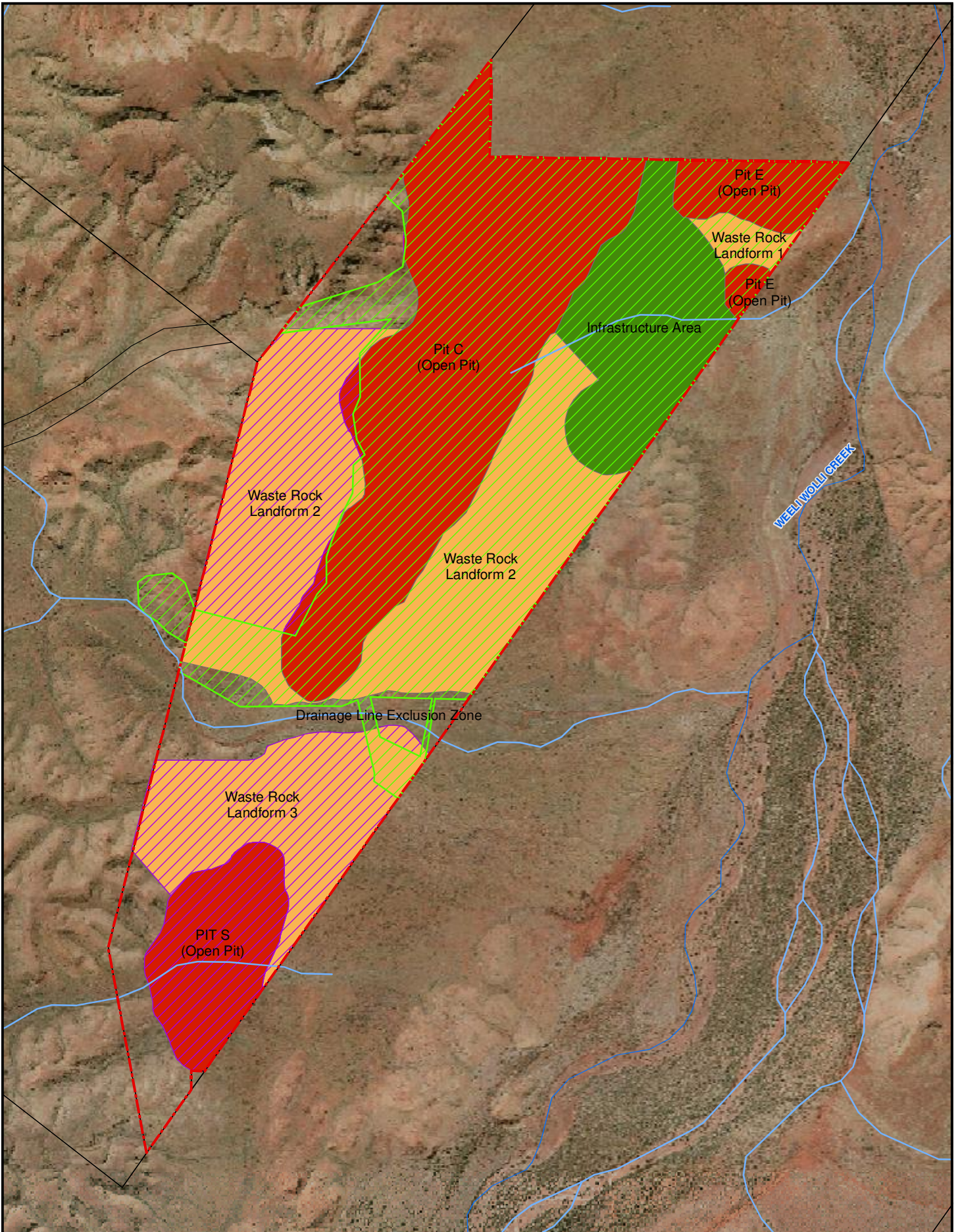
**Regional Location**

BC IRON

Figure 1

Data sources:  
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DATUM GDA 1994, PROJECTION MGA ZONE 50

0 250 500 750 1,000  
 metres

1:30,000 when printed at A4

**LEGEND**

- Project Location (M 47/1439-1)
- Mining Tenements
- Total Disturbance Footprint (Approved)
- Additional Disturbance Required
- Major Watercourse
- Minor Watercourse
- Waste Rock Landform
- Open Pit
- Infrastructure Areas

Data sources:  
 Project Layout - BC Iron (22/1/2014)

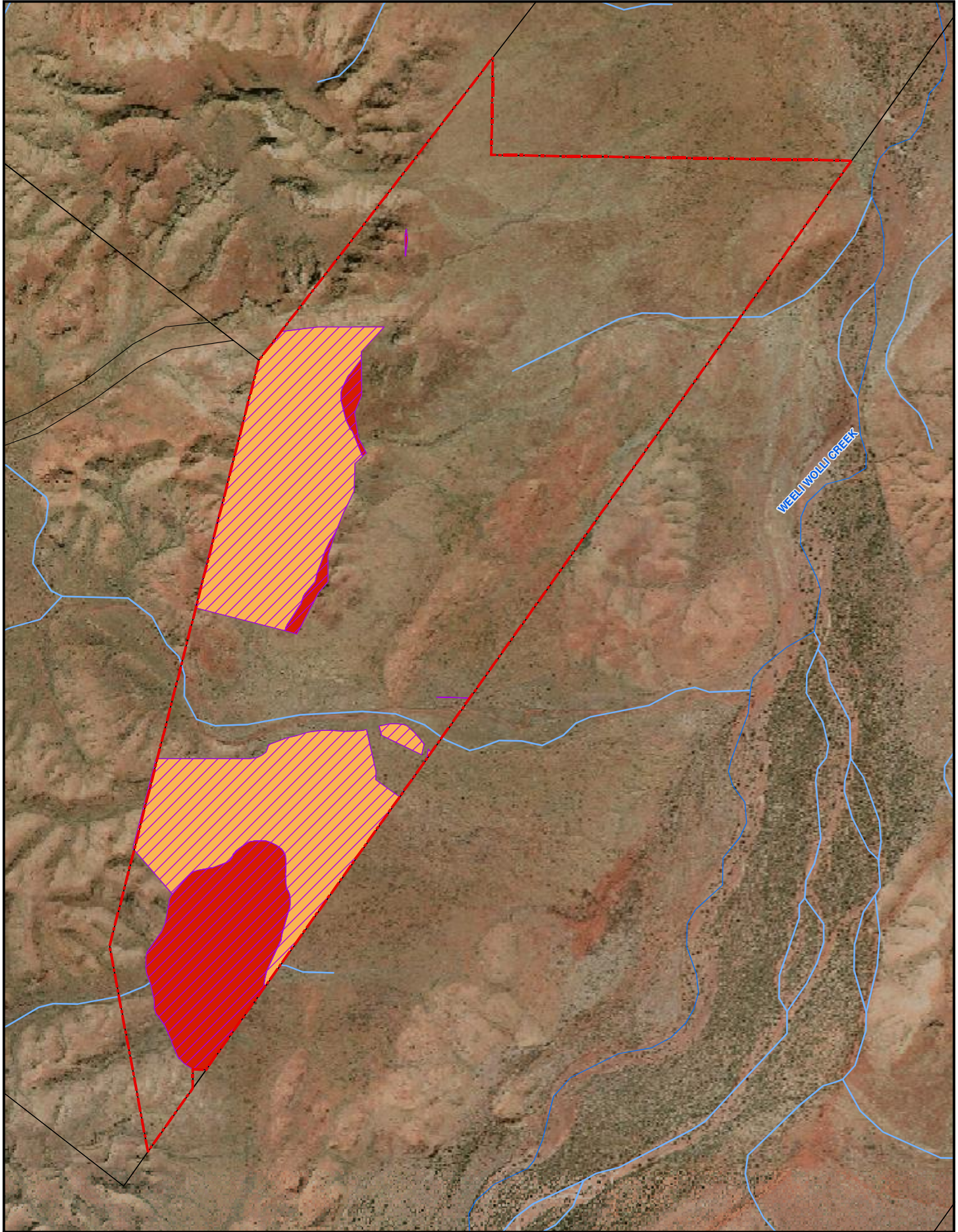
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**Project Layout**

BC IRON

Figure  
**2**





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0 250 500 750 1,000  
 metres

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**LEGEND**

- Project Location (M 47/1439-1)
- Mining Tenements
- Additional Disturbance Required
- Waste Rock Landform
- Open Pit
- Infrastructure Areas
- Major Watercourse
- Minor Watercourse

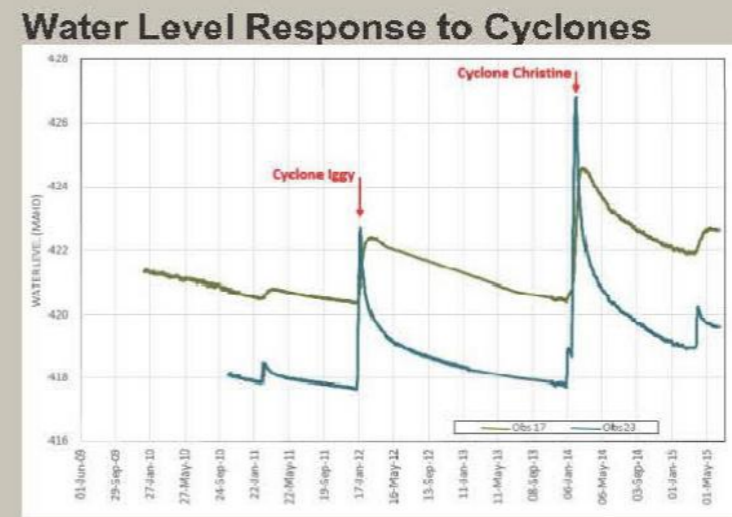
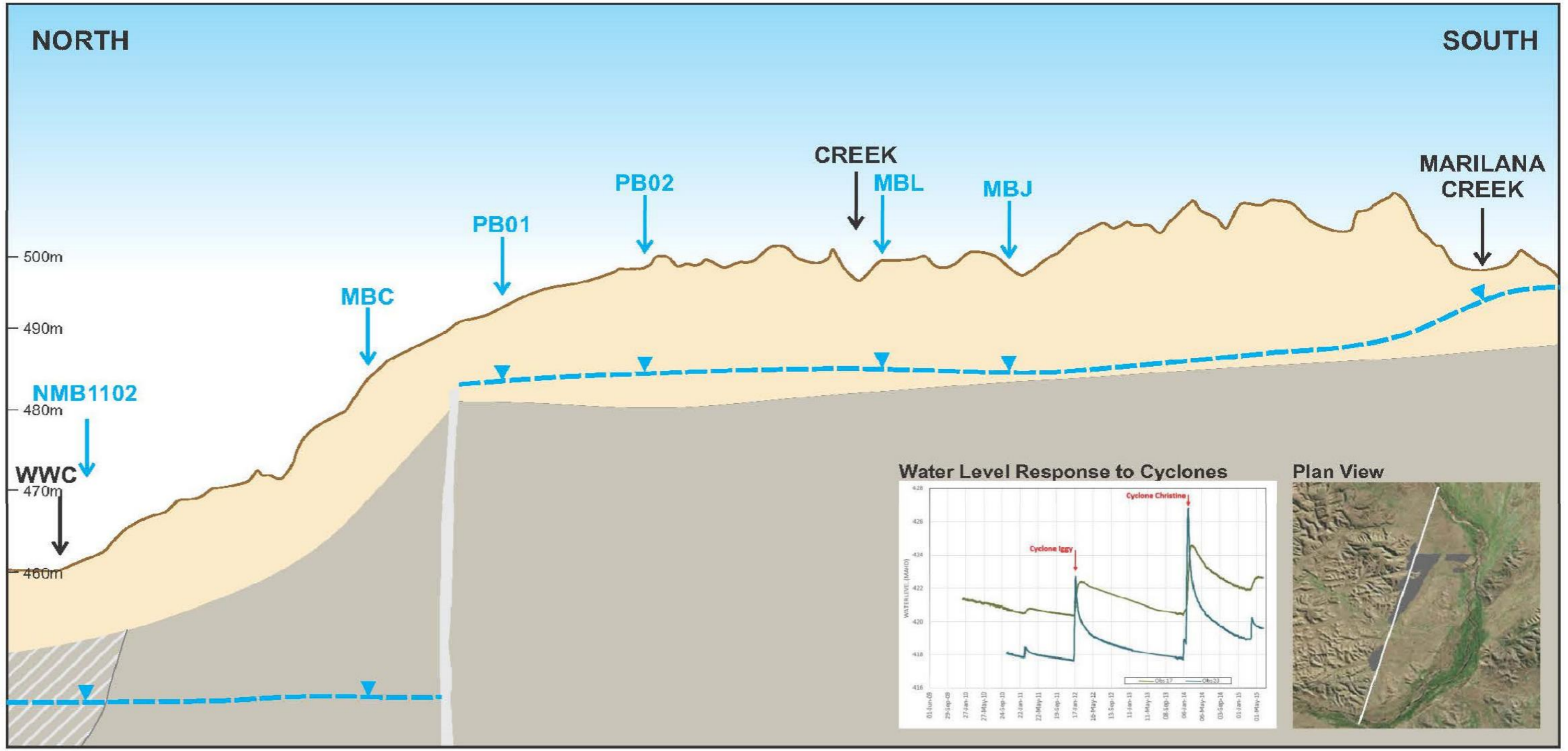
Data sources:  
 Project Layout - BC Iron (22/1/2014)

Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

<b>Additional Disturbance Areas</b>	
<b>BC IRON</b>	<b>Figure 3</b>



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 LAST MODIFIED: 1/03/2016



**LEGEND**

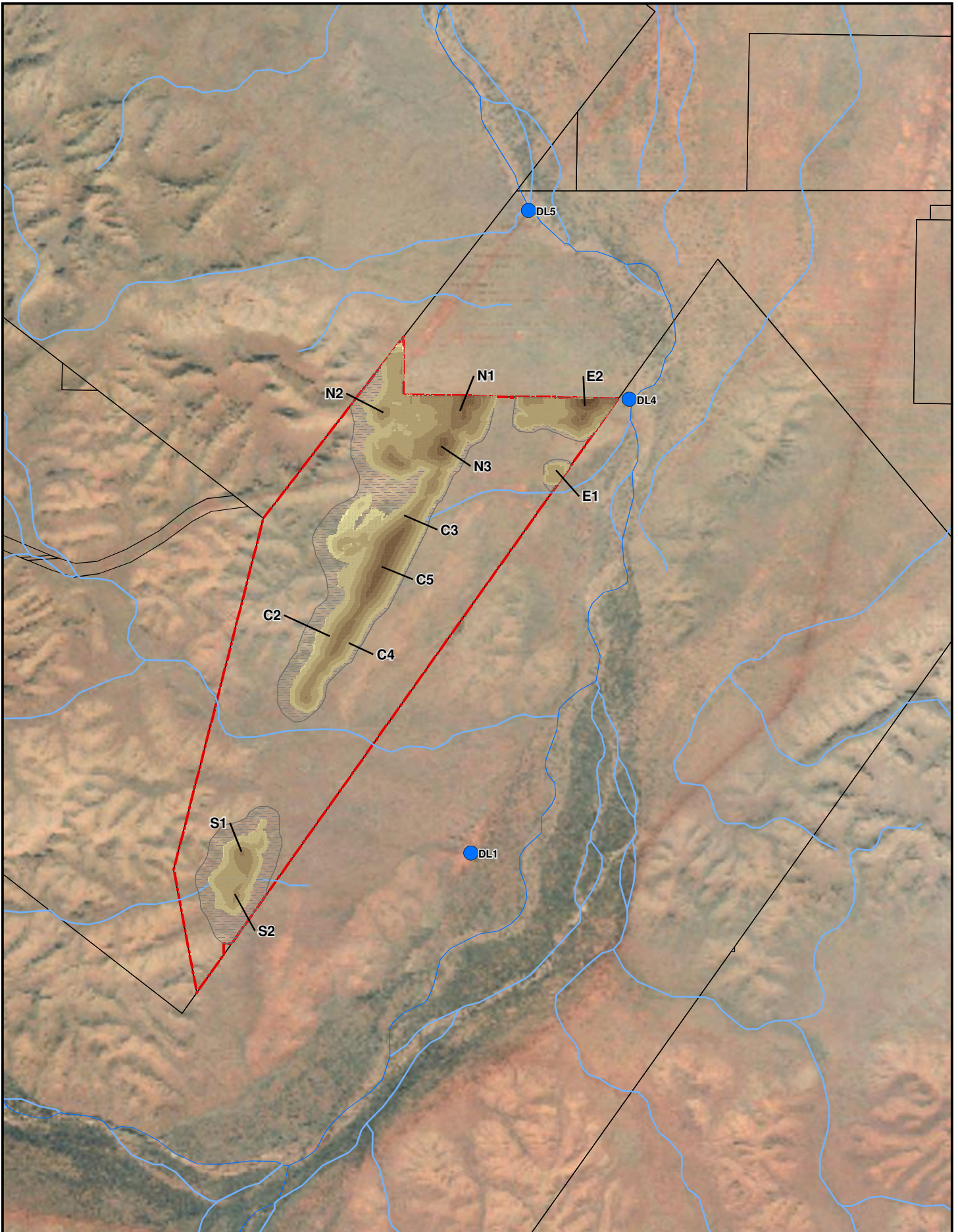
- BEDROCK
- ALLUVIUM
- CID
- Water Table
- MBL BORE LOCATION

**Conceptual Hydrogeological Cross-section**

BC IRON	Figure
	<b>4</b>

Data sources:  
 AQ2 Data  
 Base Data: (c)





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0 500 1,000 1,500 2,000  
 metres

1:50,000 when printed at A4

**LEGEND**

- Iron Valley Disposal Locations
- ▭ Open Pit
- ▭ Project Location (M 47/1439-I)
- ▭ Mining Tenements

**Elevation**

- 225 - 250
- 251 - 300
- 301 - 350
- 351 - 400
- 401 - 450
- 451 - 500
- 501 - 550
- 551 - 600

Data sources:  
 Project Layout - BC Iron (22/12/2014)  
 Landgate Imagery (Aug. 2004)  
 Predicted Contours - AQ2 (Jan. 2016)

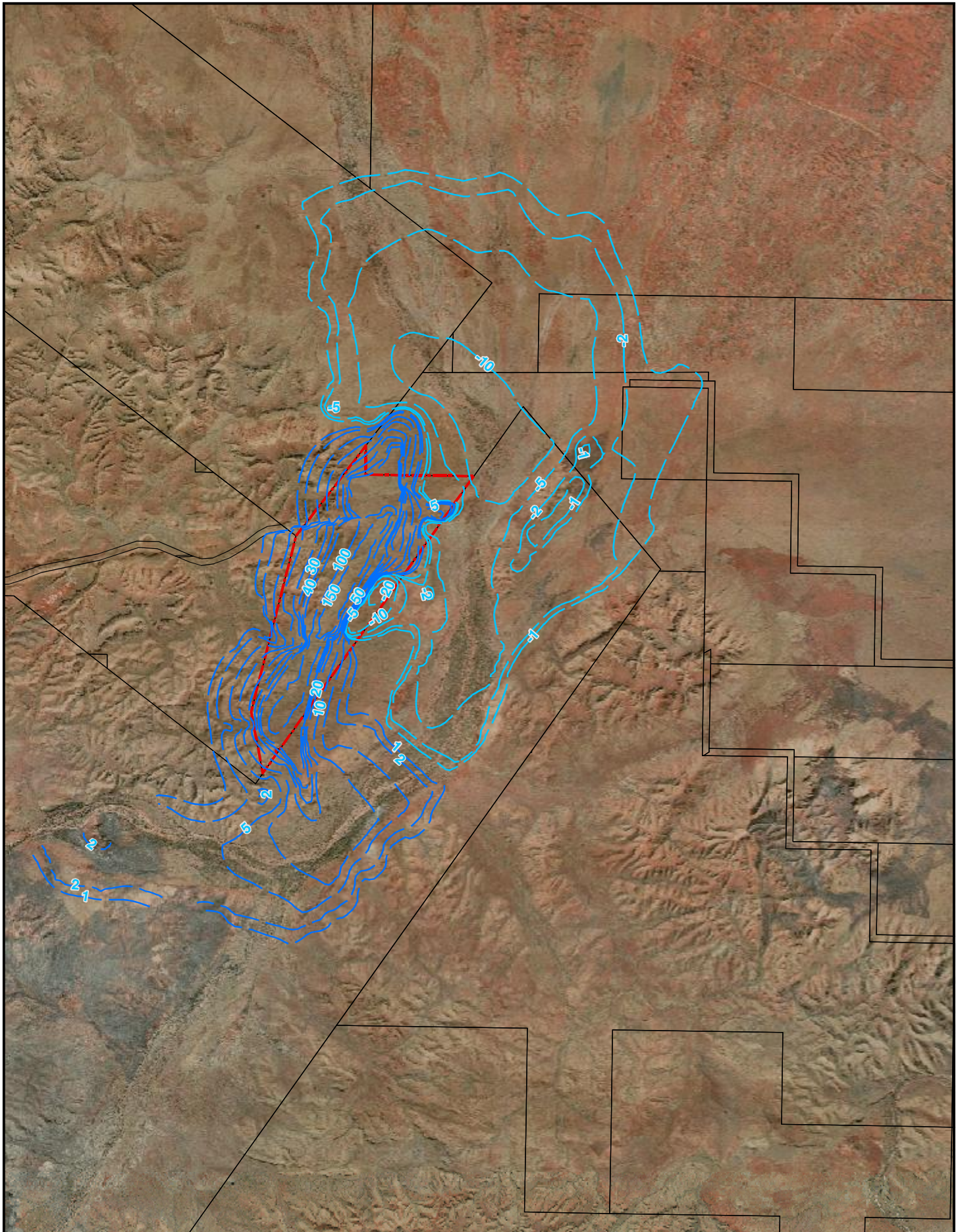
Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

**Groundwater Discharge Points Into Weeli Wolli Creek**


BC IRON

**Figure**  
**5**



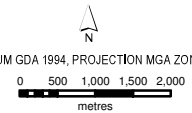


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


DATUM GDA 1994, PROJECTION MGA ZONE 50



0 500 1,000 1,500 2,000 metres

1:1,000,000 when printed at A4

**LEGEND**

-  Project Location (M 47/1439-1)
-  Mining Tenements
-  Predicted Water Level Decrease (m)
-  Predicted Water Level Increase (m)

Note:  
 Positive drawdown represents a waterlevel decrease while a negative drawdown represents a water level increase.

Data sources:  
 Project Layout - BC Iron (22/1/2014)  
 Landgate Imagery (Aug. 2004)  
 Predicted Contours - AQ2 (Jan. 2016)

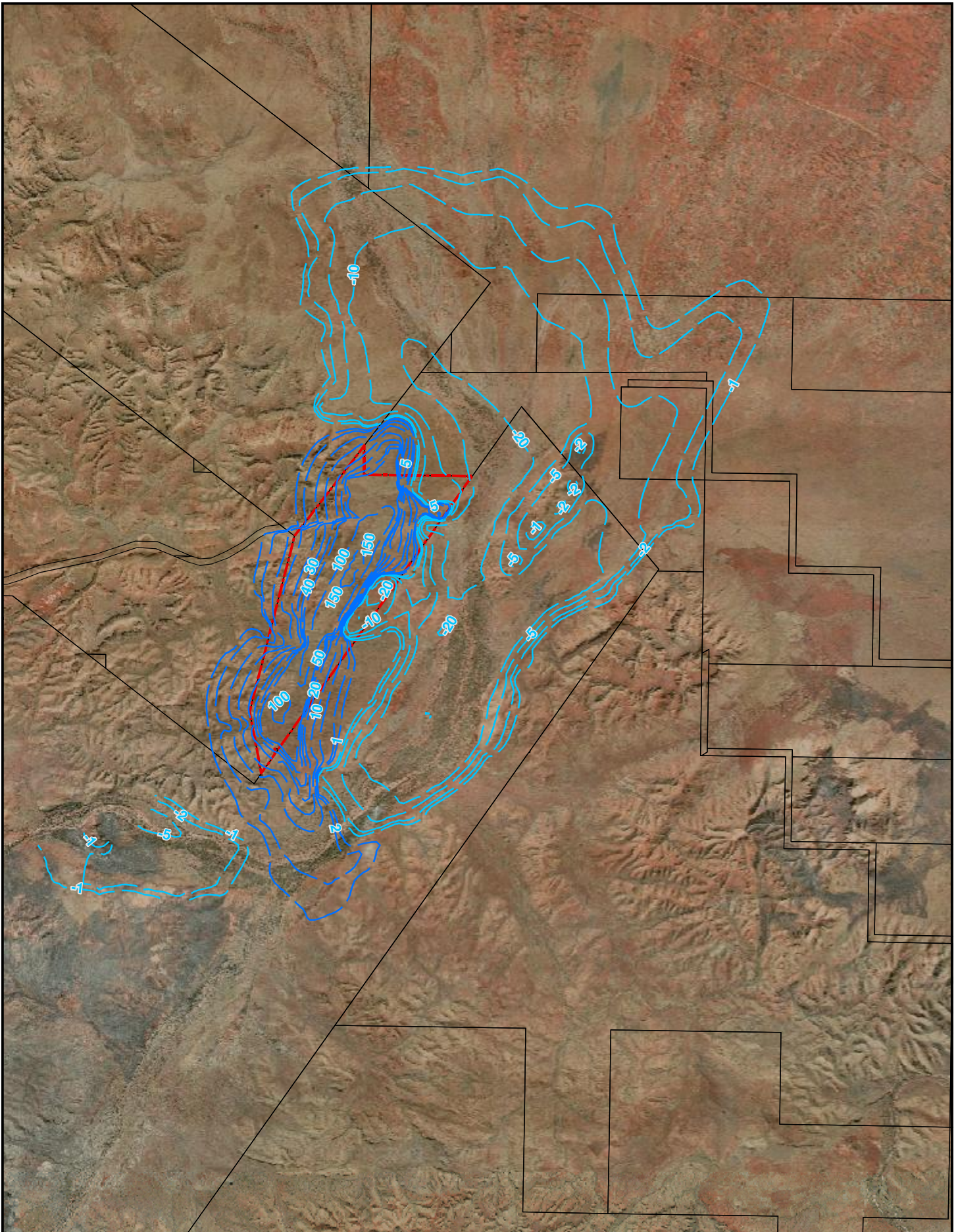
Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

**Contours of Predicted Drawdown End of 2018**

BC IRON

Figure  
**6**





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DATUM GDA 1994, PROJECTION MGA ZONE 50

0 500 1,000 1,500 2,000  
 metres

1:1,000,000 when printed at A4

**LEGEND**

- ▭ Project Location (M 47/1439-1)
- Mining Tenements
- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)

Note:  
 Positive drawdown represents a waterlevel decrease while a negative drawdown represents a water level increase.

Data sources:  
 Project Layout - BC Iron (22/12/2014)  
 Landgate Imagery (Aug. 2004)  
 Predicted Contours - AQ2 (Jan. 2016)

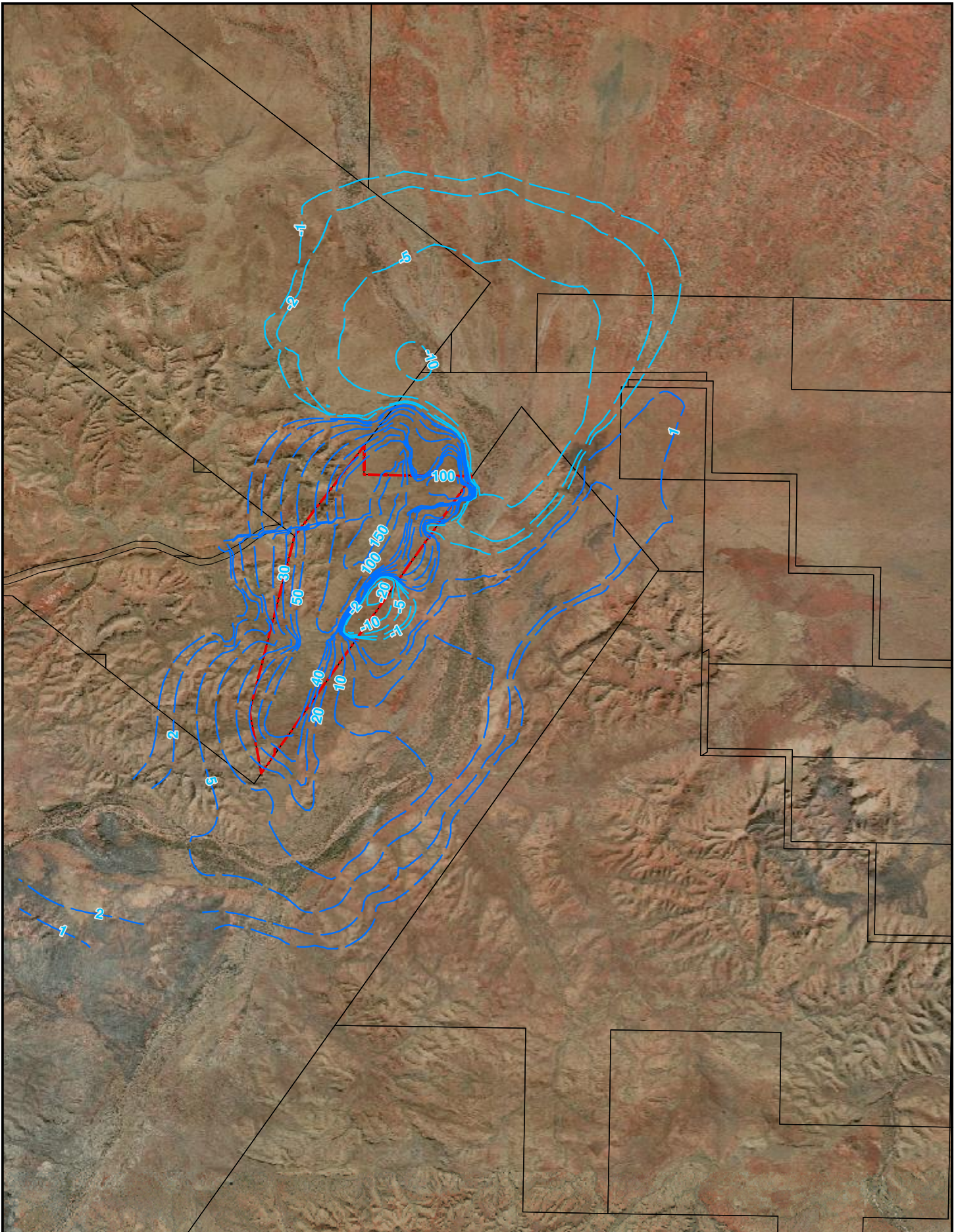
Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2016).

**Contours of Predicted Drawdown Development and Rio Tinto 2018**

BC IRON

Figure  
**7**





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DATUM GDA 1994, PROJECTION MGA ZONE 50

0 500 1,000 1,500 2,000  
 metres

1:1,000,000 when printed at A4

**LEGEND**

- - - Project Location (M 47/1439-I)
- Mining Tenements
- - - Predicted Water Level Decrease (m)
- - - Predicted Water Level Increase (m)

Note:  
 Positive drawdown represents a waterlevel decrease while a negative drawdown represents a water level increase.

Data sources:  
 Project Layout - BC Iron (22/12/2014)  
 Landsat Imagery (Aug. 2004)  
 Predicted Contours - AQ2 (Jan. 2016)

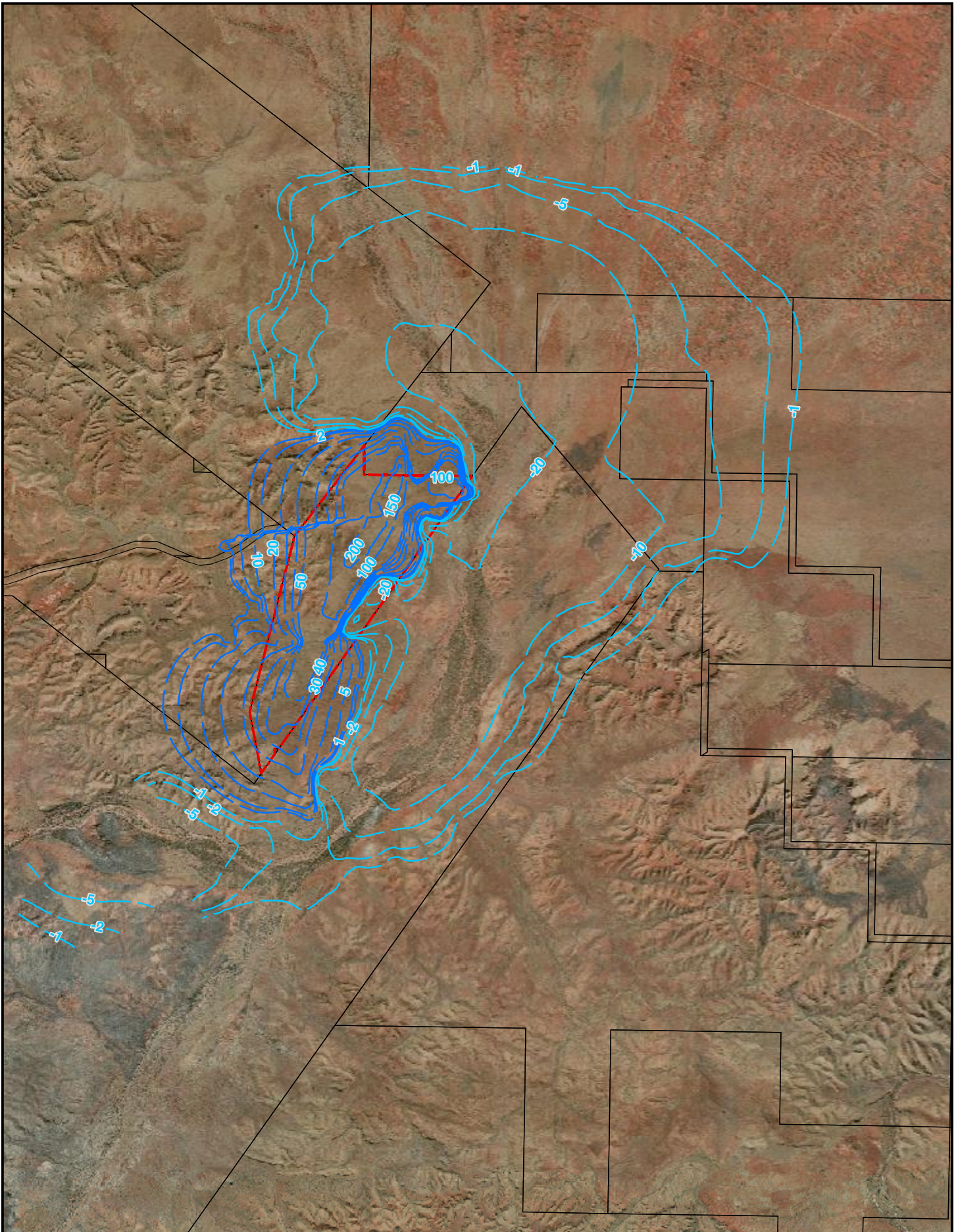
Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2016).

**Contours of Predicted Drawdown end of 2025**

**BC IRON**

**Figure**  
**8**





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1:1,000,000 when printed at A4

**LEGEND**

- Project Location (M 47/1439-1)
- Mining Tenements
- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)

Note:  
 Positive drawdown represents a waterlevel decrease while a negative drawdown represents a water level increase.

Data sources:  
 Project Layout - BC Iron (22/1/2014)  
 Landgate Imagery (Aug. 2004)  
 Predicted Contours - AQ2 (Jan. 2016)

Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

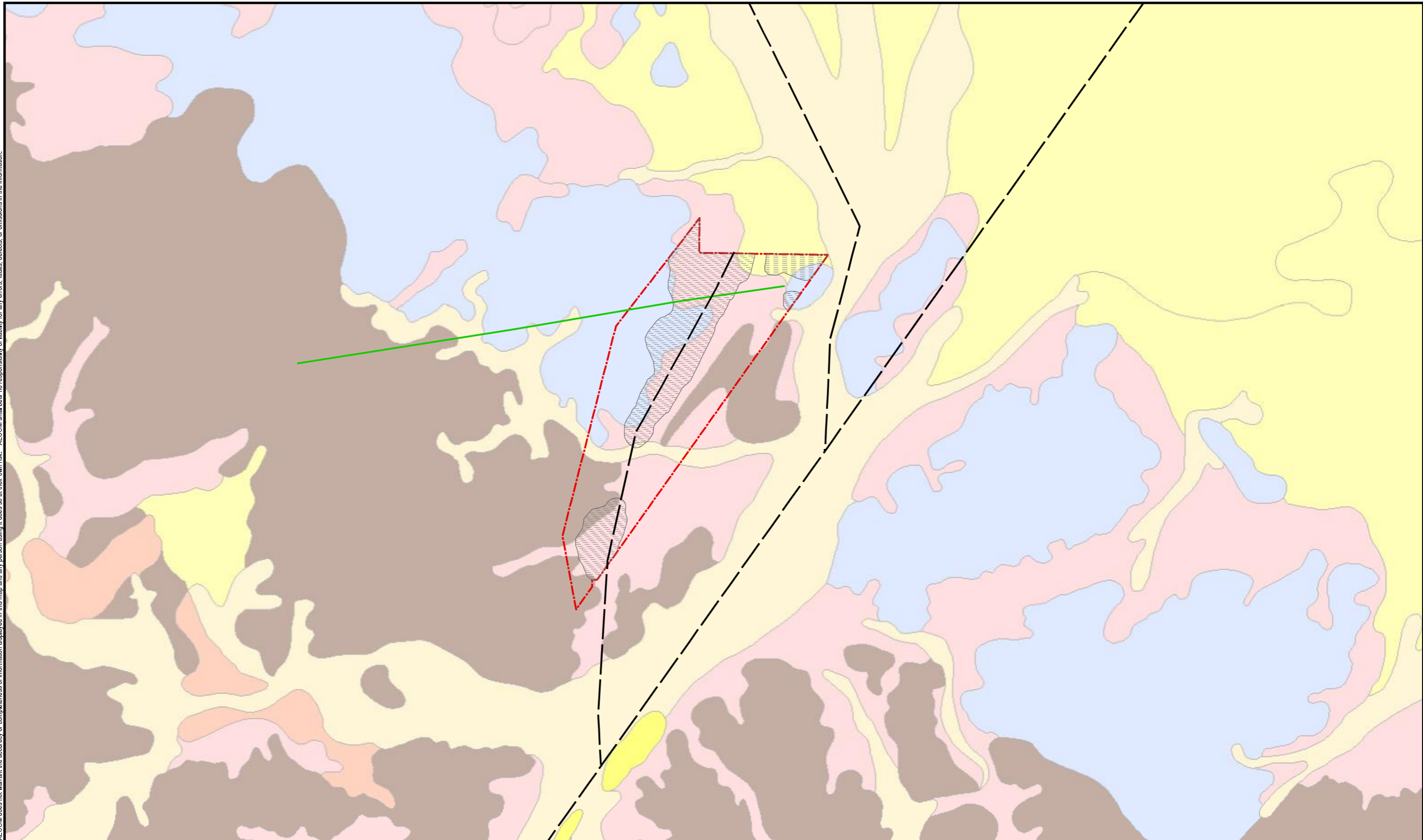
**Contours of Predicted Drawdown end of 2025 Rio Tinto Surplus Disposal Case**

BC IRON

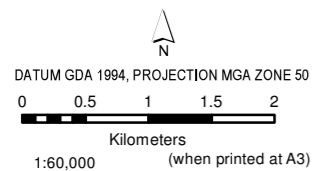
Figure  
**9**



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- LEGEND**
- Project Location (M 47/1439-1)
  - Open Pit
  - Dolerite Dyke
  - Interpreted Fault
  - Weeli Wollli Creek Alluvium
  - Weeli Wollli Creek Outwash
  - Scree
  - Scree
  - Channel Iron Deposit
  - Welli Wollli Formation
  - Brockman Iron Formation

**Geological Cross-section  
(showing dyke and fault)**

**BC IRON**

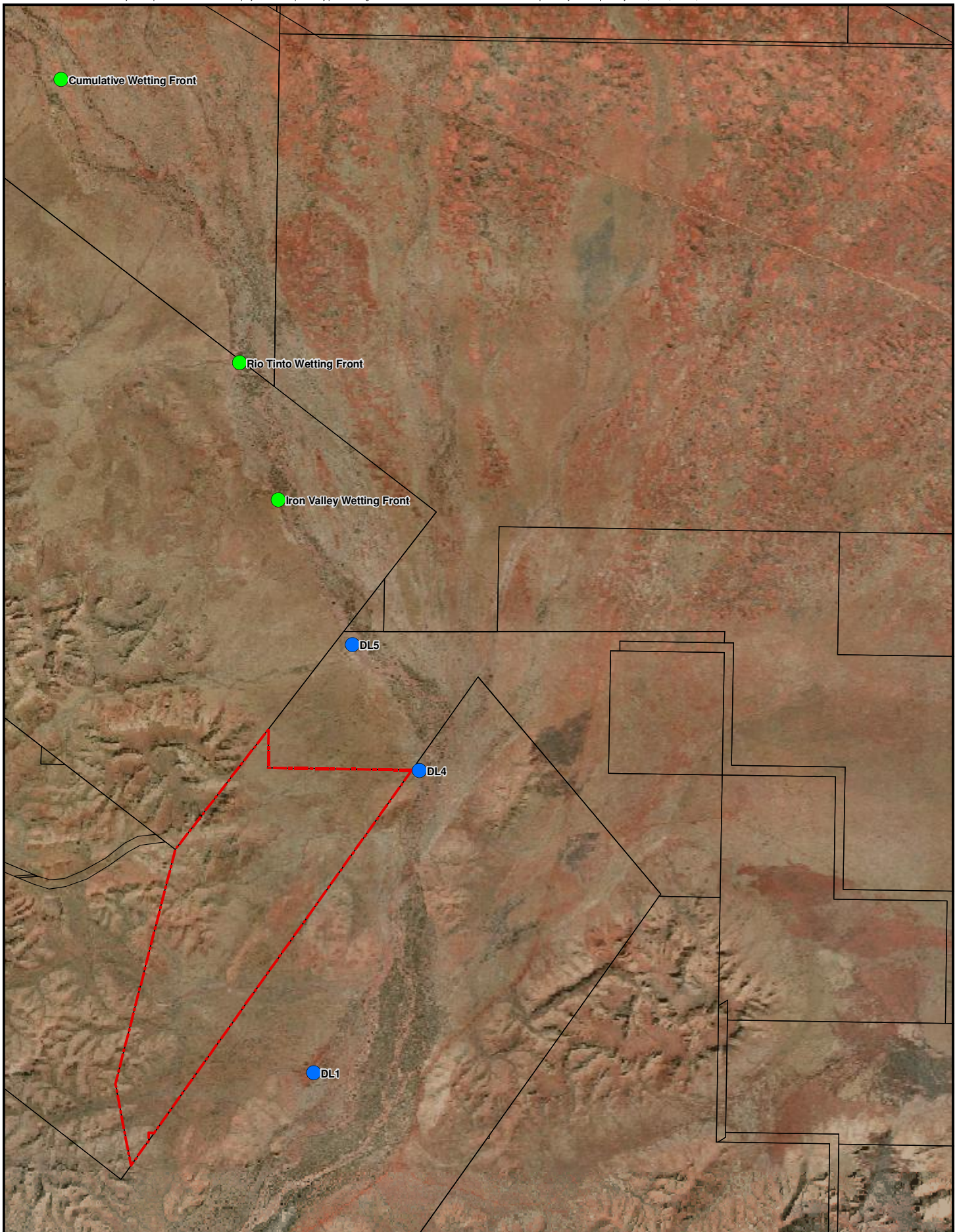
Data sources:  
 Project Layout - BC Iron (22/12/2014)  
 Risk assessment data from Astron (29/02/2016)  
 Landgate Imagery (Aug. 2013)

Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

**Figure**

**10**





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DATUM GDA 1994, PROJECTION MGA ZONE 50

0 500 1,000 1,500 2,000  
 metres

1:75,000 when printed at A4

**LEGEND**

- Location of Wetting Fronts
- Iron Valley Disposal Locations
- Project Location (M 47/1439-I)
- Mining Tenements

Data sources:  
 Project Layout - BC Iron (22/1/2014)  
 Landsat Imagery (Aug. 2004)  
 Predicted Contours - AQ2 (Jan. 2016)

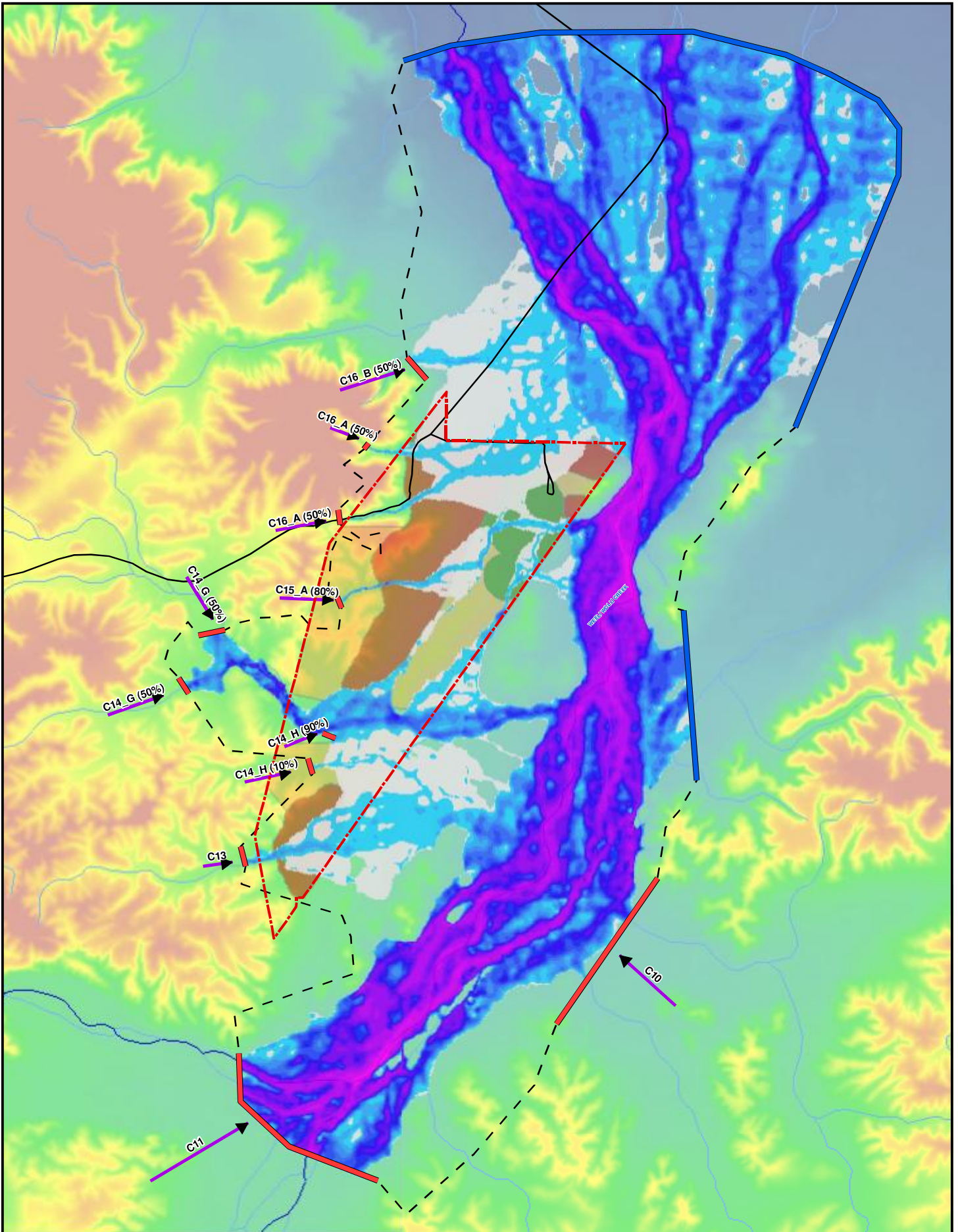
Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2016).

**Wetting Front Extent**

**BC IRON**

**Figure 11**





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DATUM GDA 1994, PROJECTION MGA ZONE 50

0 250 500 750 1,000  
 metres

1:60,000 when printed at A4

**LEGEND**

Water Depth (m)	1.51 - 1.75	Project Location (M 47/1439-I)
0 - 0.05	1.76 - 2	Inflow Hydrograph and percentage of the flow
0.06 - 0.25	2.01 - 2.5	Major Watercourse
0.26 - 0.5	2.51 - 3	Minor Watercourse
0.51 - 0.75	3.01 - 4	Concept Access Road
0.76 - 1	4.01 - 5	Outflow Model Boundary
1.01 - 1.25	5.01 - 7	Inflow Model Boundary
1.26 - 1.5		Waste Rock Landform
		Open Pit
		Infrastructure Areas

Modelled Area

Data sources:  
 Project Layout - BC Iron (22/12/2014)

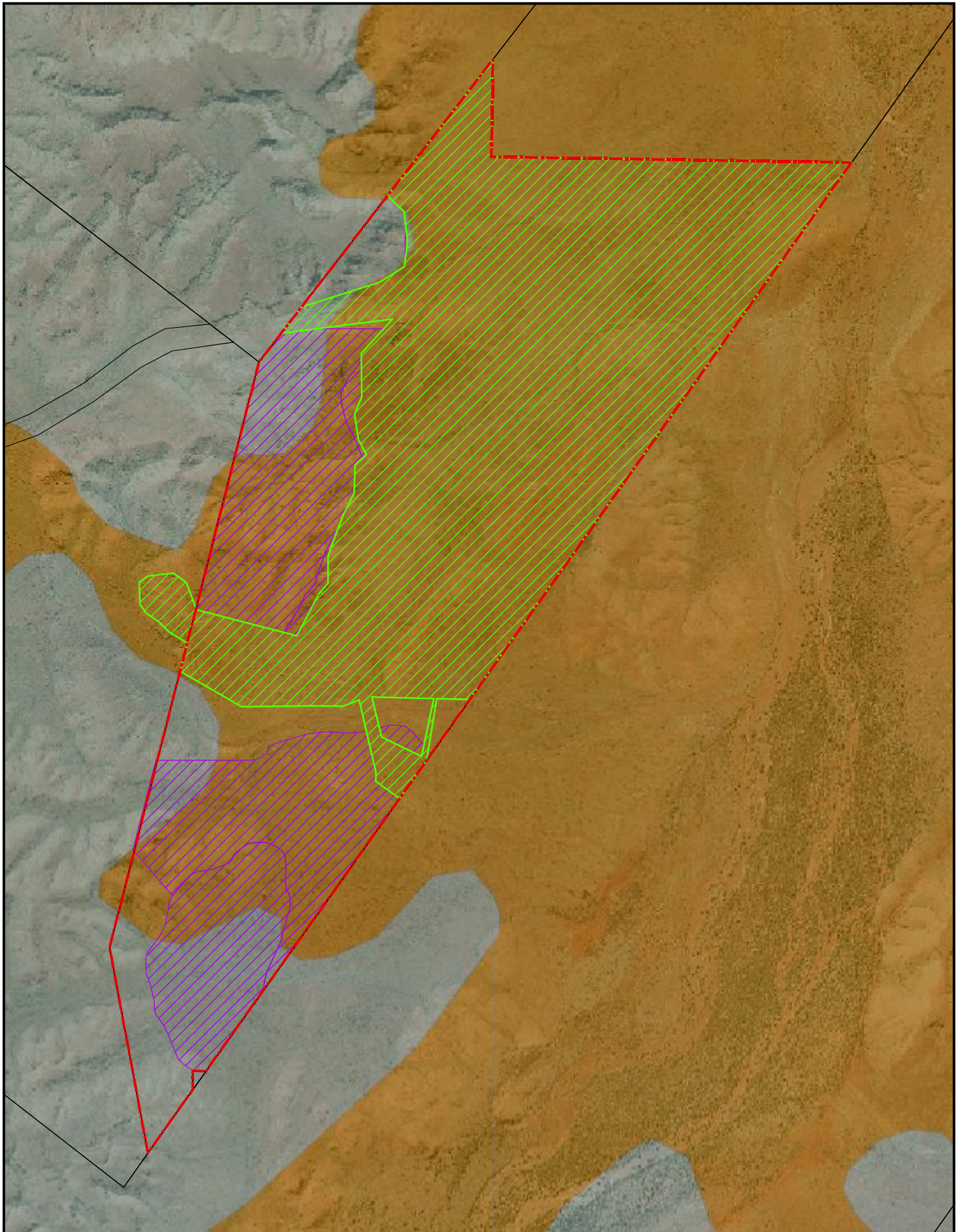
Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

**Potential Surface Water Impacts and Operational Riaks (100 Yr ARI Outlines)**

BC IRON

Figure  
**12**





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DATUM GDA 1994, PROJECTION MGA ZONE 50

0 250 500 750 1,000  
 metres

1:30,000 when printed at A4

**LEGEND**

- Project Location (M 47/1439-1)
- Mining Tenements
- Total Disturbance Footprint (Approved)
- Additional Disturbance Required

**IBRA 7 Sub-Regions**

- Fortescue
- Hamersley

Data sources:  
 Project Layout - BC Iron (22/1/2014)

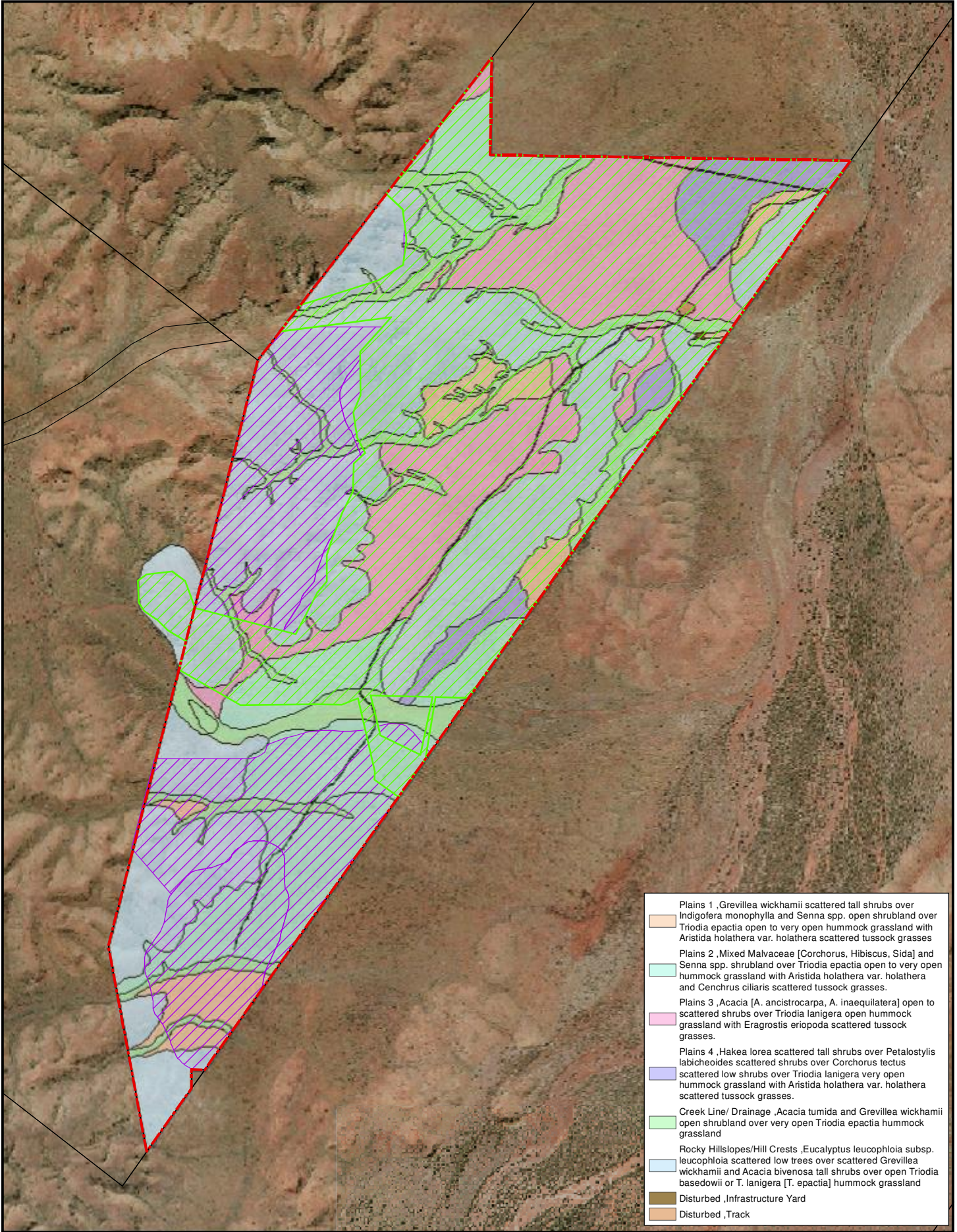
Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

**IBRA Subregion Mapping**

**BC IRON**

**Figure 13**





- Plains 1 ,Grevillea wickhamii scattered tall shrubs over Indigofera monophylla and Senna spp. open shrubland over Triodia epactia open to very open hummock grassland with Aristida holathera var. holathera scattered tussock grasses
- Plains 2 ,Mixed Malvaceae [Corchorus, Hibiscus, Sida] and Senna spp. shrubland over Triodia epactia open to very open hummock grassland with Aristida holathera var. holathera and Cenchrus ciliaris scattered tussock grasses.
- Plains 3 ,Acacia [A. ancistrocarpa, A. inaequilatera] open to scattered shrubs over Triodia lanigera open hummock grassland with Eragrostis eriopoda scattered tussock grasses.
- Plains 4 ,Hakea lorea scattered tall shrubs over Petalostylis labicheoides scattered shrubs over Corchorus tectus scattered low shrubs over Triodia lanigera very open hummock grassland with Aristida holathera var. holathera scattered tussock grasses.
- Creek Line/ Drainage ,Acacia tumida and Grevillea wickhamii open shrubland over very open Triodia epactia hummock grassland
- Rocky Hillslopes/Hill Crests ,Eucalyptus leucophloia subsp. leucophloia scattered low trees over scattered Grevillea wickhamii and Acacia bivenosa tall shrubs over open Triodia basedowii or T. lanigera [T. epactia] hummock grassland
- Disturbed ,Infrastructure Yard
- Disturbed ,Track

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0 250 500 750 1,000  
 metres

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**LEGEND**

- Project Location (M 47/1439-1)
- Mining Tenements
- Total Disturbance Footprint (Approved)
- Additional Disturbance Required

Data sources:  
 Project Layout - BC Iron (22/12/2014)  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

**Vegetation Mapping**

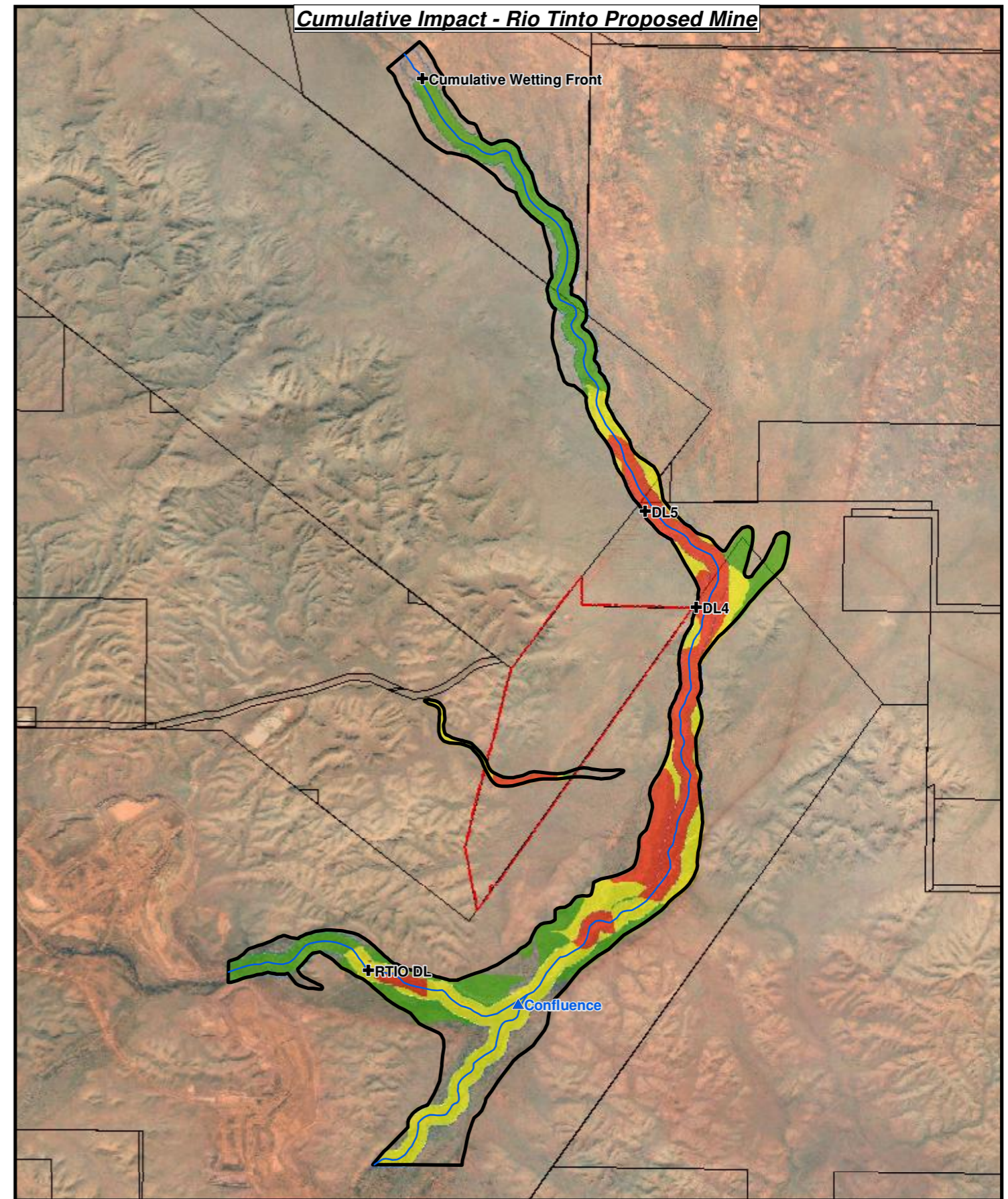
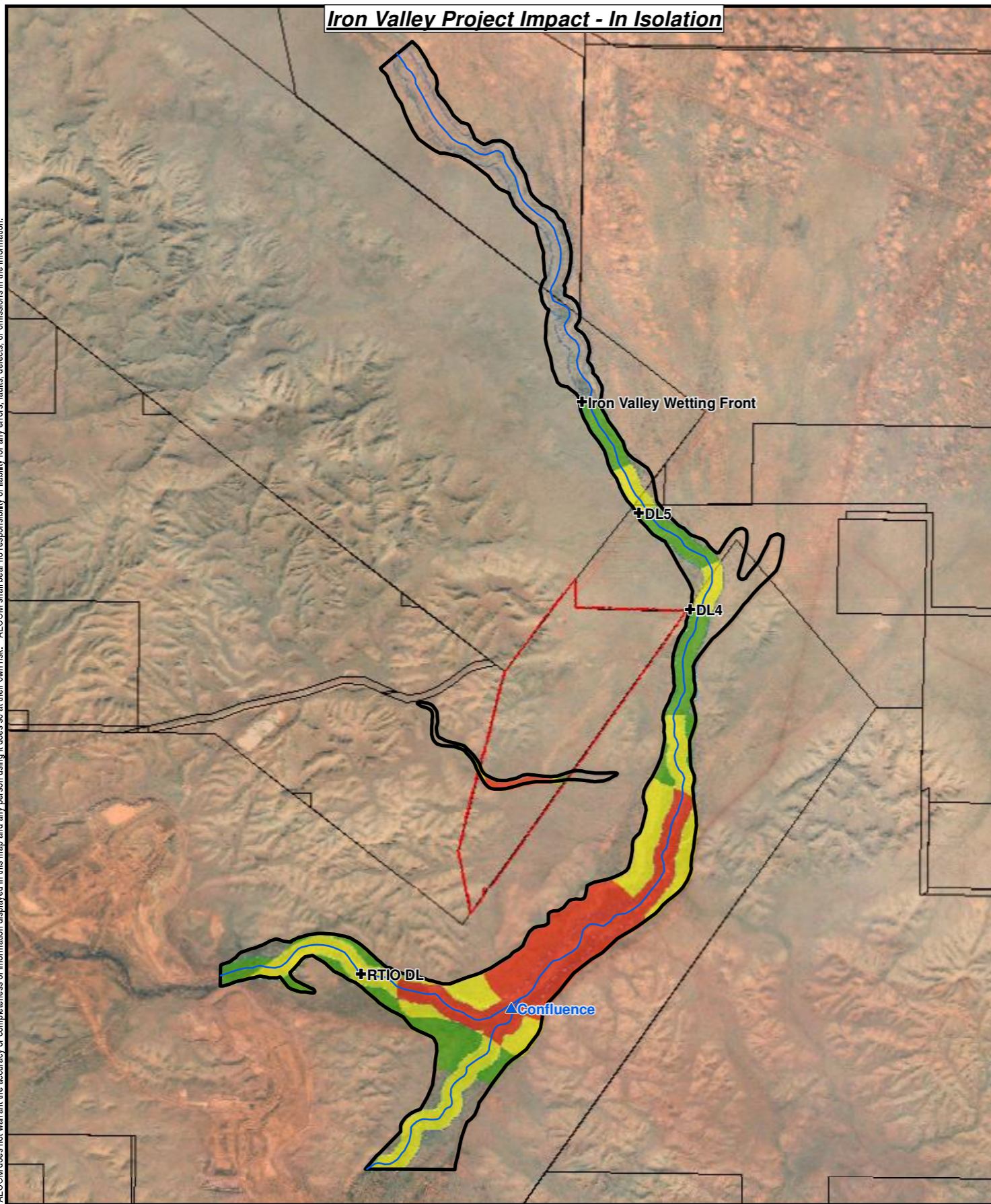
---

**BC IRON**

**Figure**  
**14**



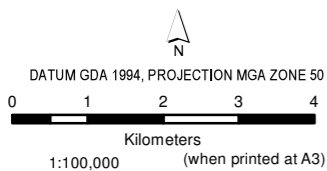
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- LEGEND**
- ▲ Confluence point
  - ⊕ Discharge location point - Base
  - Watercourse centreline
  - ▭ Project Location (M 47/1439-I)
  - ▭ GDV risk area
  - ▭ Watercourse (200m buffer)
  - ▭ Mining Tenements
- Risk Levels**
- High
  - Moderate
  - Low
  - Negligible



**Groundwater Dependent Vegetation Distribution - Risk Assessment**

BC IRON

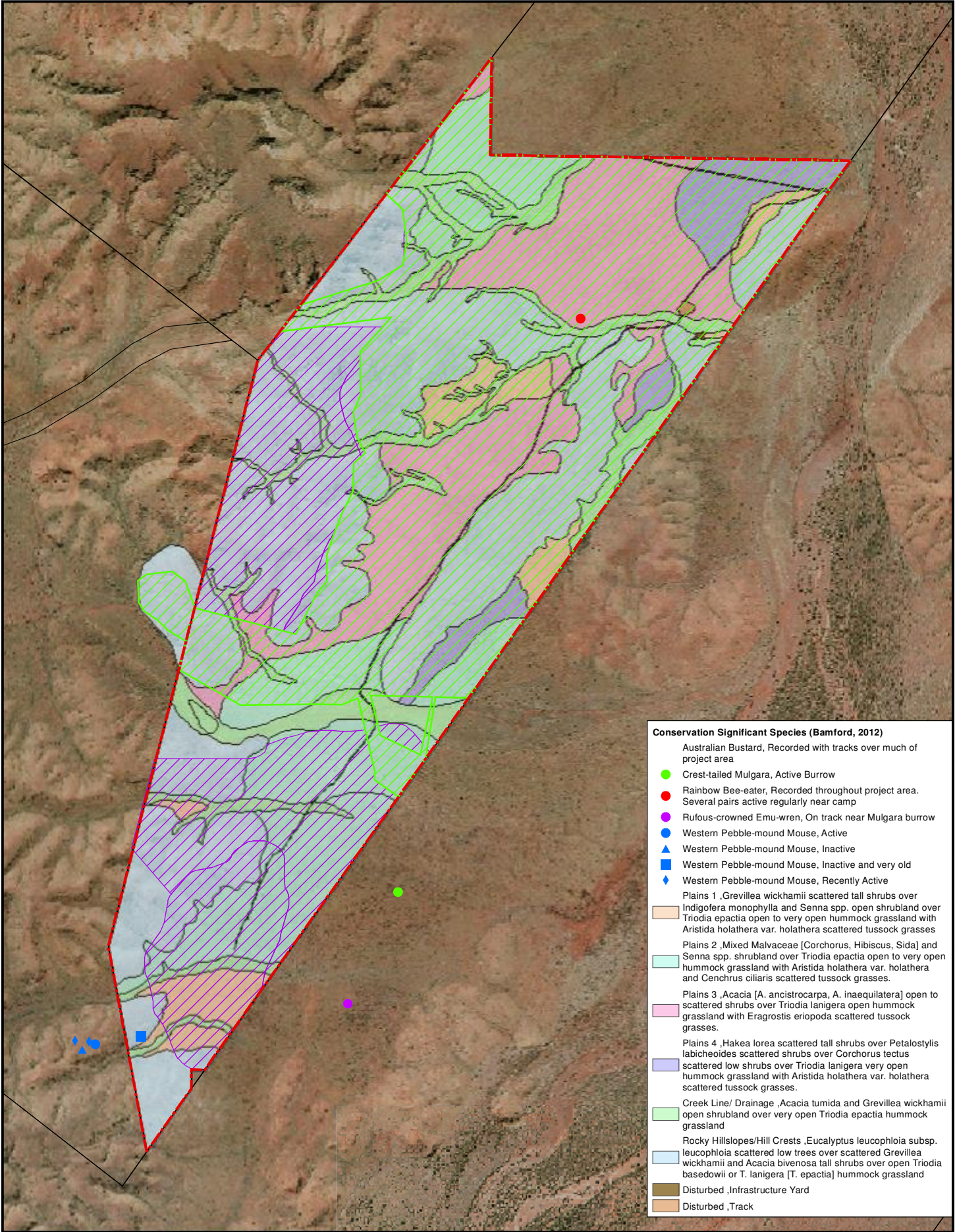
Data sources:  
 Project Layout - BC Iron (22/12/2014)  
 Risk assessment data from Astron (29/02/2016)  
 Landgate Imagery (Aug. 2013)

Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

Figure

**15**





- Conservation Significant Species (Bamford, 2012)**
- Australian Bustard, Recorded with tracks over much of project area
  - Crest-tailed Mulgara, Active Burrow
  - Rainbow Bee-eater, Recorded throughout project area. Several pairs active regularly near camp
  - Rufous-crowned Emu-wren, On track near Mulgara burrow
  - Western Pebble-mound Mouse, Active
  - Western Pebble-mound Mouse, Inactive
  - Western Pebble-mound Mouse, Inactive and very old
  - ◆ Western Pebble-mound Mouse, Recently Active
  - Plains 1 ,Grevillea wickhamii scattered tall shrubs over Indigofera monophylla and Senna spp. open shrubland over Triodia epactia open to very open hummock grassland with Aristida holathera var. holathera scattered tussock grasses
  - Plains 2 ,Mixed Malvaceae [Corchorus, Hibiscus, Sida] and Senna spp. shrubland over Triodia epactia open to very open hummock grassland with Aristida holathera var. holathera and Cenchrus ciliaris scattered tussock grasses.
  - Plains 3 ,Acacia [A. ancistrocarpa, A. inaequilatera] open to scattered shrubs over Triodia lanigera open hummock grassland with Eragrostis eriopoda scattered tussock grasses.
  - Plains 4 ,Hakea lorea scattered tall shrubs over Petalostylis labicheoides scattered shrubs over Corchorus tectus scattered low shrubs over Triodia lanigera very open hummock grassland with Aristida holathera var. holathera scattered tussock grasses.
  - Creek Line/ Drainage ,Acacia tumida and Grevillea wickhamii open shrubland over very open Triodia epactia hummock grassland
  - Rocky Hillslopes/Hill Crests ,Eucalyptus leucophloia subsp. leucophloia scattered low trees over scattered Grevillea wickhamii and Acacia bivenosa tall shrubs over open Triodia basedowii or T. lanigera [T. epactia] hummock grassland
  - Disturbed ,Infrastructure Yard
  - Disturbed ,Track

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0 250 500 750 1,000  
 metres

1:30,000 when printed at A4

**LEGEND**

- Project Location (M 47/1439-1)
- Mining Tenements
- ▭ Total Disturbance Footprint (Approved)
- ▭ Additional Disturbance Required

Data sources:  
 Project Layout - BC Iron (22/1/2014)

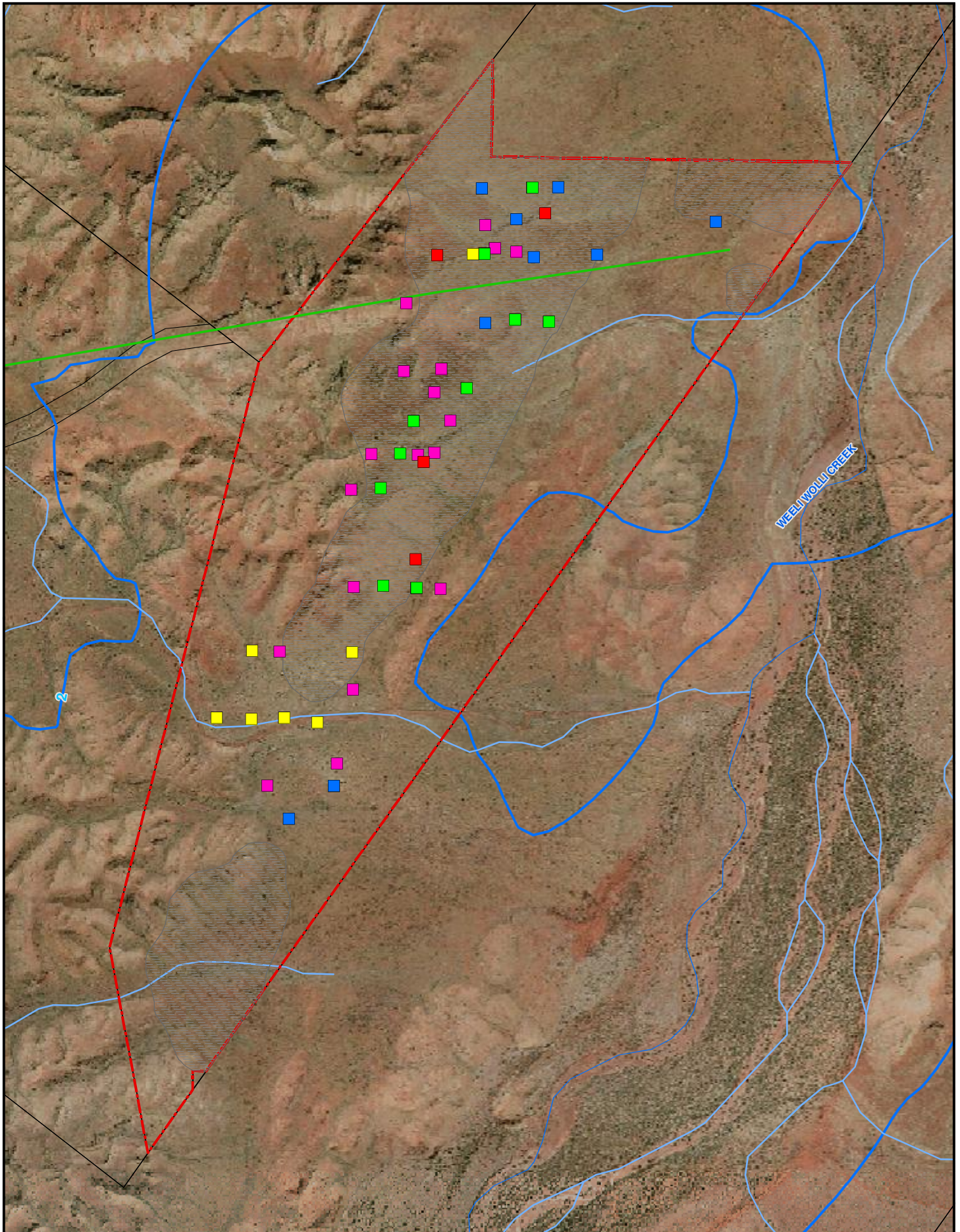
Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

**Conservation Significant Vertebrate Fauna in the Project Area**

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Figure  
**16**





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0 250 500 750 1,000  
 metres

1:30,000 when printed at A4

**LEGEND**

- Project Location (M 47/1439-1)
- Mining Tenements
- Open Pit
- Major Watercourse
- Minor Watercourse
- Diacyclops humphreysi humphreysi*
- Meridiescandona lucerna*
- Paramelitidae* Genus 2 sp. B01
- Paramelitidae* sp. B16
- Paramelitidae* sp. B26

Data sources:  
 Project Layout - BC Iron (22/1/2014)

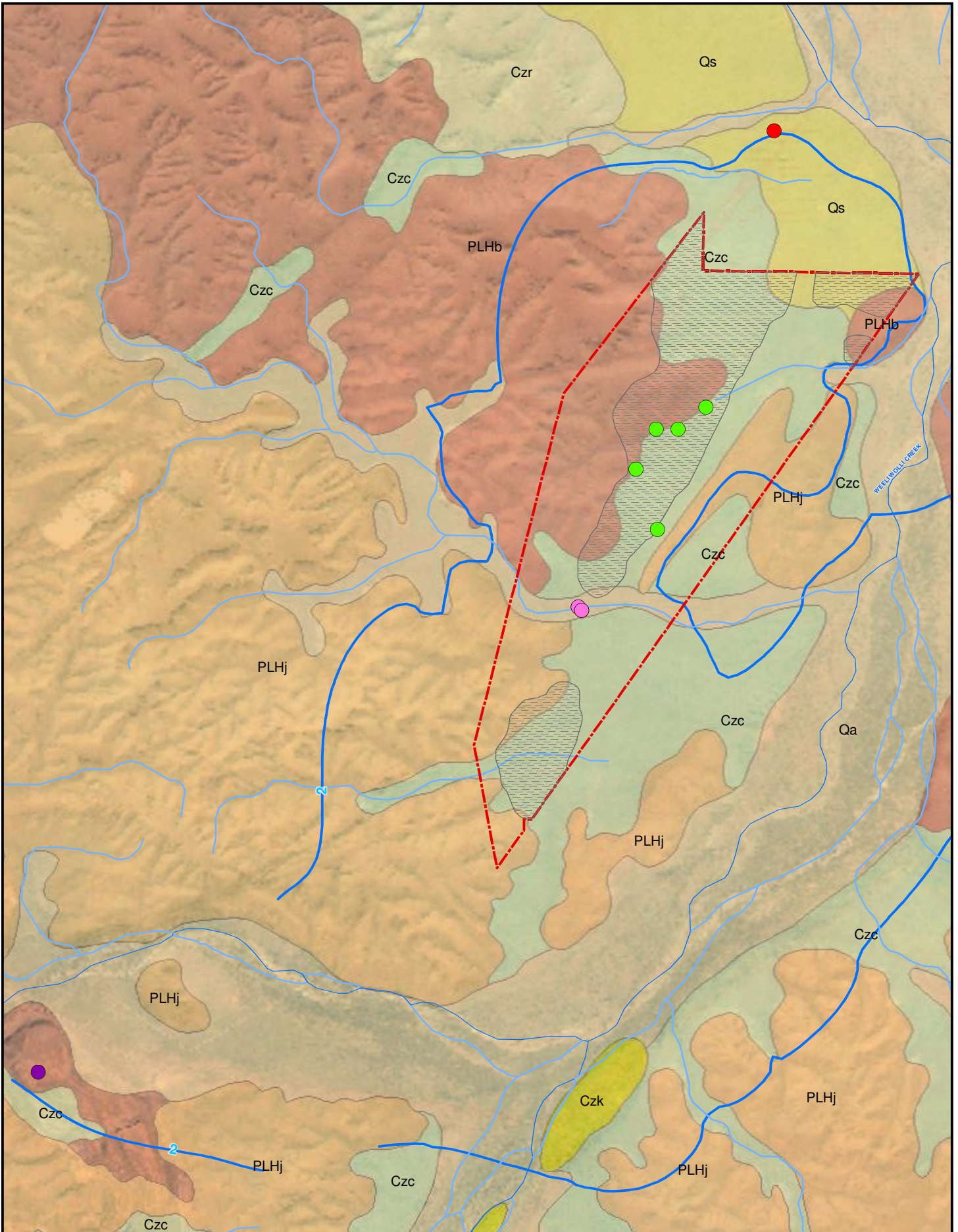
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**Stygofauna Sampling Distribution North and South of Dyke**

BC IRON

Figure 17





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0 250 500 750 1,000  
 metres

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**LEGEND**

- Project Location (M 47/1439-1)
- Open Pit
- Major Watercourse
- Minor Watercourse
- 2m Drawdown Contour
- Qa - Alluvium
- Qs - Eolian
- Czk - Calcrete
- Czc - Colluvium
- Czr - Hematite
- PLHb - Brockman
- PLHj - Weeli Wolli
- *Bathynella* sp.
- *Bathynella* sp. B23
- *Bathynella* sp. B24
- *Meridiescandona* sp. BOS171

Data sources:  
 Project Layout - BC Iron (22/12/2014)  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010).

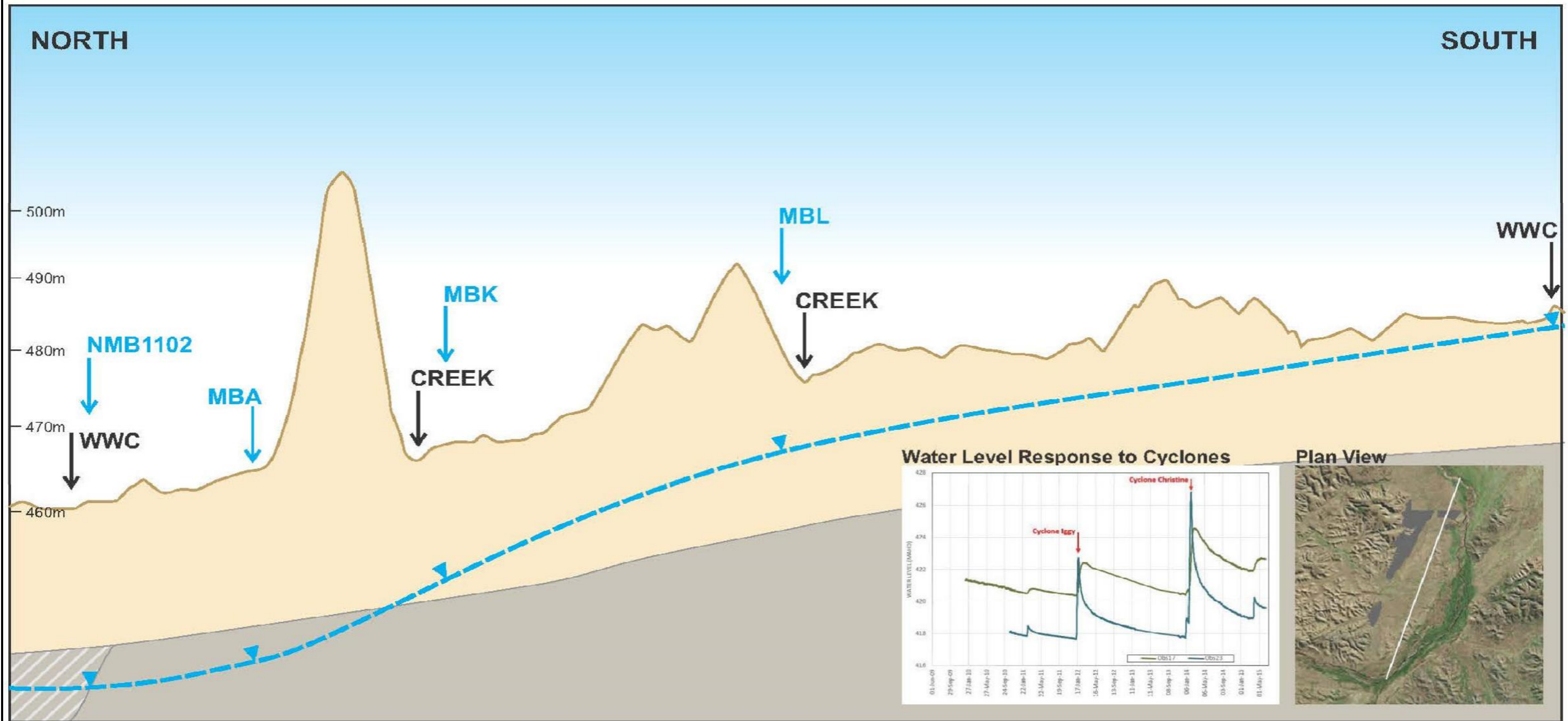
**Stygofauna Sample Locations of *Bathynella* and *Meridiescandona* sp. BOS171**

BC IRON

Figure  
**18**



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**LEGEND**

BEDROCK     
 ALLUVIUM     
 Water Table  
 CID  
**MBL** BORE LOCATION

**Subterranean Fauna Habitat Connectivity**

BC IRON

Figure **19**

Data sources:  
 AQ2 Data  
 Base Data: (c)