

Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect

Geographic Information Systems

A geographic information system (GIS) is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface.

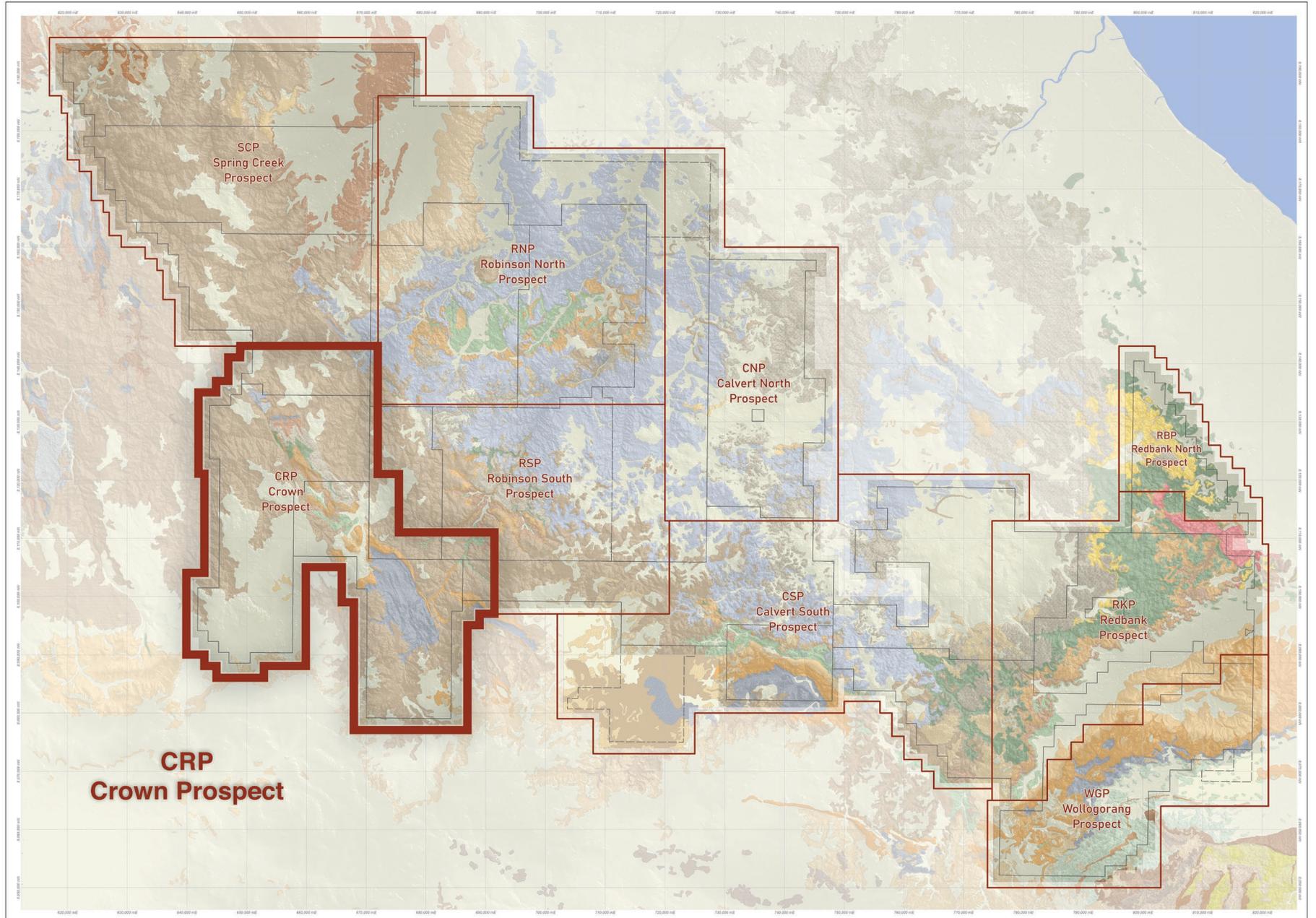
CRP-Crown Prospect
1,381.87 km²

Geological mapping is fundamental to any exploration project. Effective mineral exploration requires an in-depth understanding of the lithological and structural controls of mineralisation.

These insights must be gained through geological mapping at the early stages of the exploration program. Mapping is a cost-effective exploration tool and a project-generative process that delivers tangible benefits to all exploration programs.

A good geological map not only provides focus to an exploration program, it also clearly communicates the economic potential of a project to stake holders. Geologists strive to know the composition and structure of Earth matter and depict information in GIS format. This provides basis for comparisons and facilitates analysis to offer results that can benefit our future.

The Redbank GIS team are currently focused around the area of Digital Mapping. We understand that at the heart of any Geographical Information System (GIS) is the map database. The efficiency of the GIS is therefore related to the accuracy and reliability of the related map data.



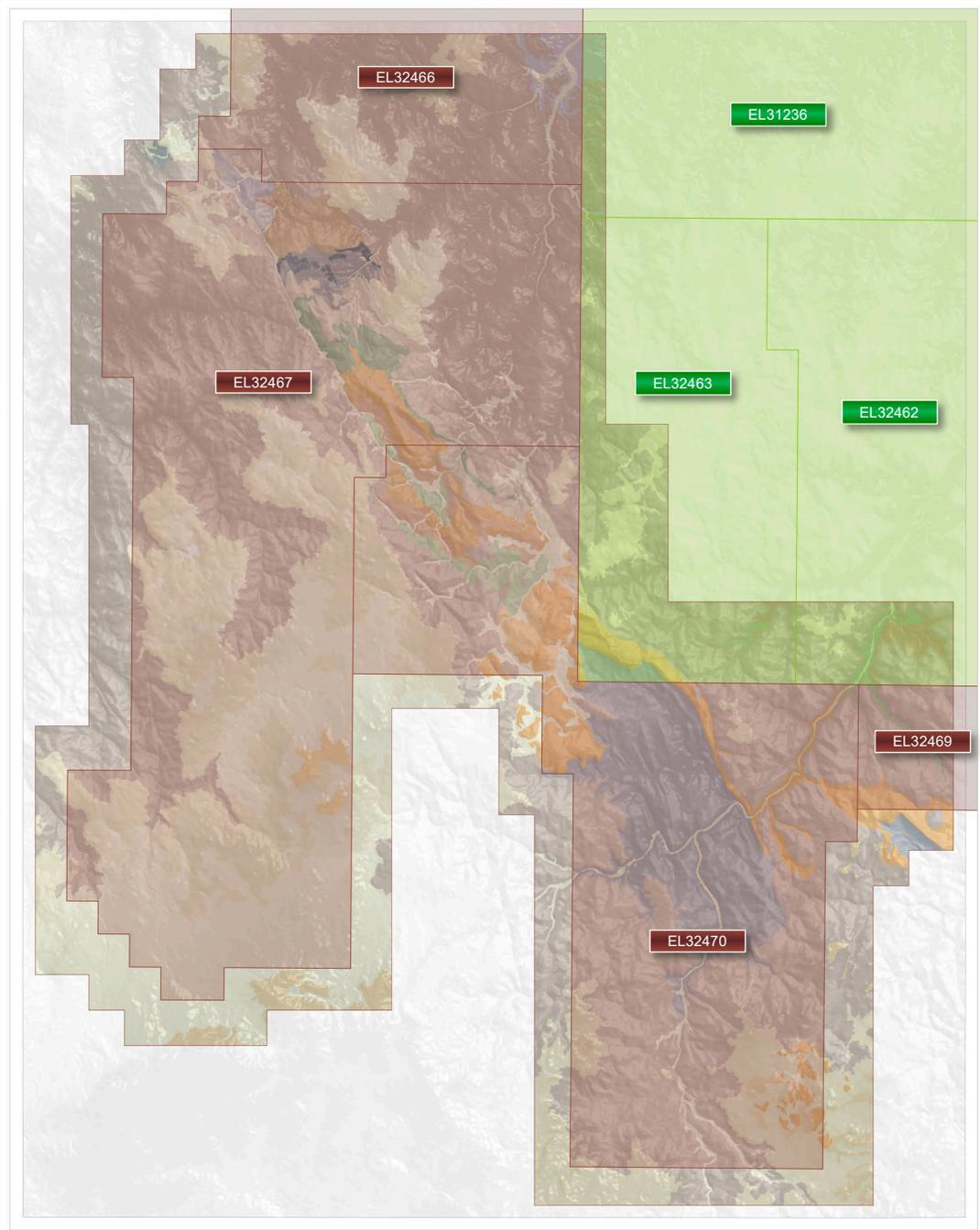
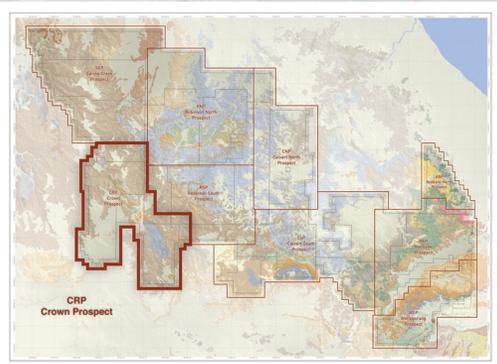
Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Contents – GIS Layers & Images

- 1. CRP-Crown Regional location**
CRP-Crown Prospect location in a regional setting. Redbank Exploration Package
- 2. Contents**
CRP-Crown Prospect Map Book content.
- 3. Exploration Licences**
The CRP-Redbank Prospect covers several exploration licences, the mapping has included a 2km buffer zone around the CRP-Exploration Licence area
- 4. Geological Map**
CRP-Crown Prospect digitisation and attribution of Geological layers available in the exploration folder.
- 5. Hydrocarbons Map**
Hydrocarbon classifications have been completed by John Beeson, these layers are fully attributed and available on our server for further investigations.
- 6. Satellite Imagery**
The highest quality satellite imagery for the CRP, pix50cm World Imagery tiles have merged and then clipped to the CRP prospect boundary
- 7. Digital Elevation Model (DEM)**
This DEM is available in the workspace, there has been a contour layer extracted at 5m intervals, this DEM is also available for the "Discover 3D" module within MapInfo. .
- 8. Hydrology Layers**
Detailed hydrology, Rivers, Creeks and Catchment layers are fully attributed and these layers have been supplied as individual catchment areas, as well as a combined hydrology layer..
- 9. 2021-Soil Samples**
236 Soil sample points in the CRP, A MapInfo Heatmap layer has been extracted for Cu-ppm
- 10. 2021-Stream Samples**
85 Stream sample points in the CRP, A MapInfo Heatmap layer has been extracted for Cu-ppm
- 11. NTGS-Stream Sediments (Heat Map)**
246 Stream Sediment sample points in the CRP that have 90+ppm of Cu. , A MapInfo Heatmap layer has been extracted for the 90+ppm layer.
- 12. 2021-Rock Samples**
10 Rock sample points in the CRP, A MapInfo Heatmap layer has been extracted for Cu-ppm
- 13. Rock Samples – 2021 Field Photography**
2021 Field photography of 14 rock samples in the Mountain Home area.
- 14. Drillholes (Historical)**
10 Rock sample points in the CRP, A MapInfo Heatmap layer has been extracted for Cu-ppm
- 15. Geophysics Image (TMIRTP-Tilt)**
Total magnetic intensity (TMI) -reduced to pole - Tilt filter
- 16. Geophysics Image (TMIRTP)**
Total magnetic intensity (TMI) -reduced to pole
- 17. Geophysics Image (TMIRTP-1VD)**
Total magnetic intensity (TMI) -reduced to pole First vertical derivative.
- 18. Geophysics Image (KThUr-Ternary)**
Ternary radioelement potassium(K)-thorium(Th)-uranium(U) channel data. The image is a red-green-blue (RGB) composite using a histogram-equalised colour-stretch for each of the three channels..
- 19. Areas of Interest**
Detailed Areas of Interest from Mike Hannington, Allan Ronk, John Beeson, Mat Cooper , NTGS, and the digitising process David Hantke.
- 20. Areas of Interest (AEM-ET)**
Regional Government and Historical Open File Airborne Electromagnetic (AEM) Early Time Channel AEM Composite (ET) Time Domain Surveys Only
- 21. Areas of Interest (AEM-MT)**
Regional Government and Historical Open File Airborne Electromagnetic (AEM) Middle Time Channel AEM Composite (MT) Time Domain Surveys Only
- 22. Areas of Interest (AEM-LT)**
Regional Government and Historical Open File Airborne Electromagnetic (AEM) Late Time Channel AEM Composite (LT) Time Domain Surveys Only
- 23. Historical Map (1967)**
This historical data (CR1967) had been discovered by our management team and had some very interesting geo-contacts.
- 24. 1967 – Northern Area (Cu contacts)**
This historical data (CR1967) Northern Area
- 25. 1967 – Central Area (Cu contacts)**
This historical data (CR1967) Central Area.
- 26. 1967 – Southern Area (Cu contacts)**
This historical data (CR1967) Southern Area.
- 27. 250k GA Maps (4 Corners)**
The 4 corners of the 250k regional map sheets merged with observations.
- 28. MapInfo Workspace Location**
The CRP MapInfo Workspace has been set-up and available in the **RBK-Exploration Folder**, this workspace is our **Exploration Database Master** for the Crown Prospect..

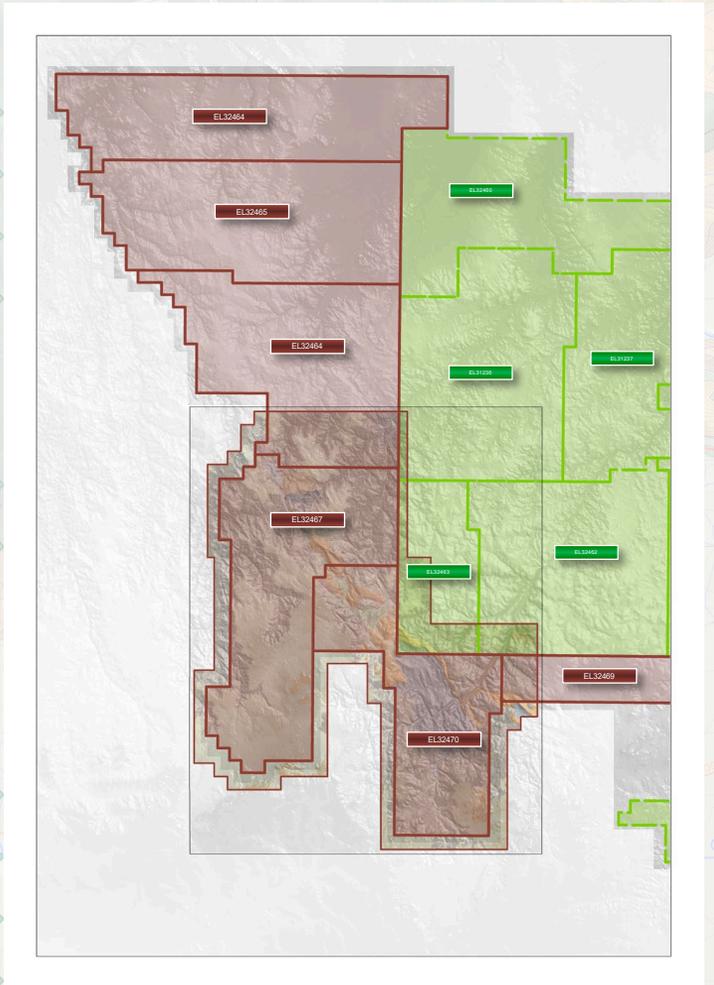
Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Exploration Licences

The CRP-Redbank Prospect covers several exploration licences, the mapping has included a 2km buffer zone around the CRP-Exploration Licence area

- Granted
- Application

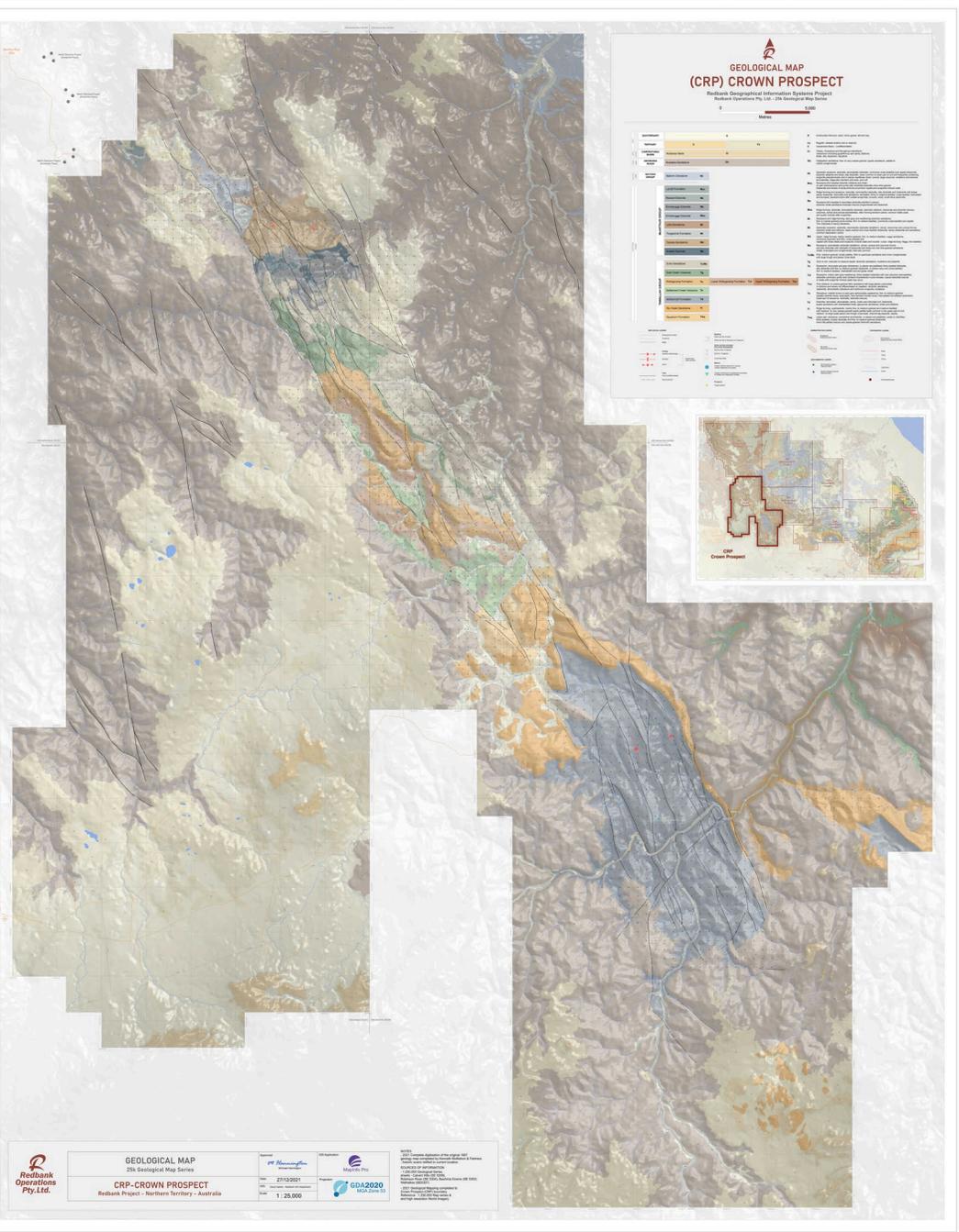
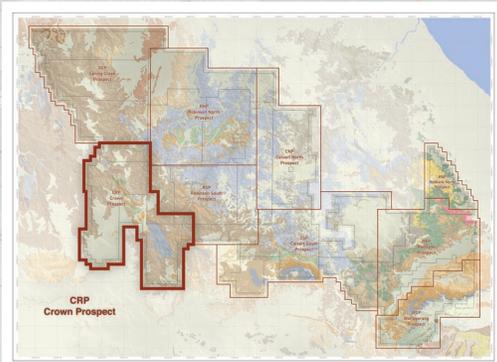


25k-Geological Map Series
Exploration Licences – Redbank West

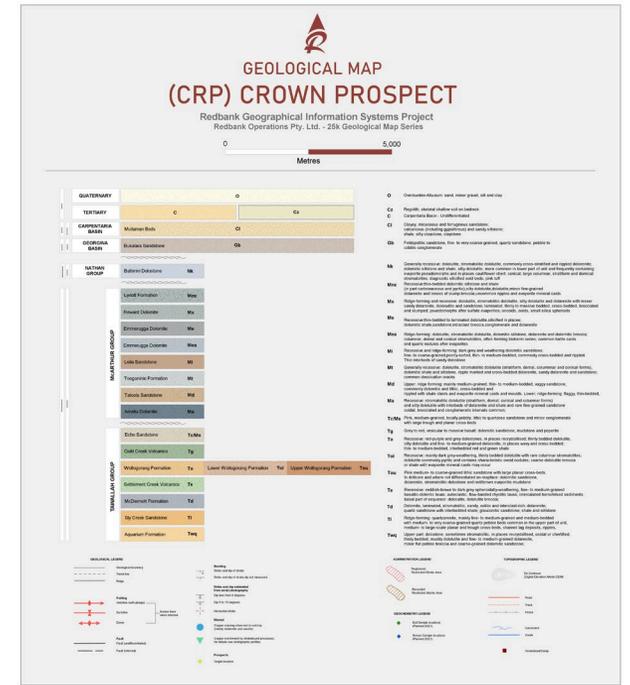


Redbank Exploration Project NT
 25k Geological Map Series
CRP-Crown Prospect Geological Map

The CRP has several formations merging in the area, and has shown in historical reports (1967) to be an exploration target. The area has not been explored in detail since 1967, Cu targets had also been discovered in 1967. These 1967 mapping discoveries have been added to our CRP Geology Map, for further detailed investigation.



25k-Geological Map Series
Crown-Formations

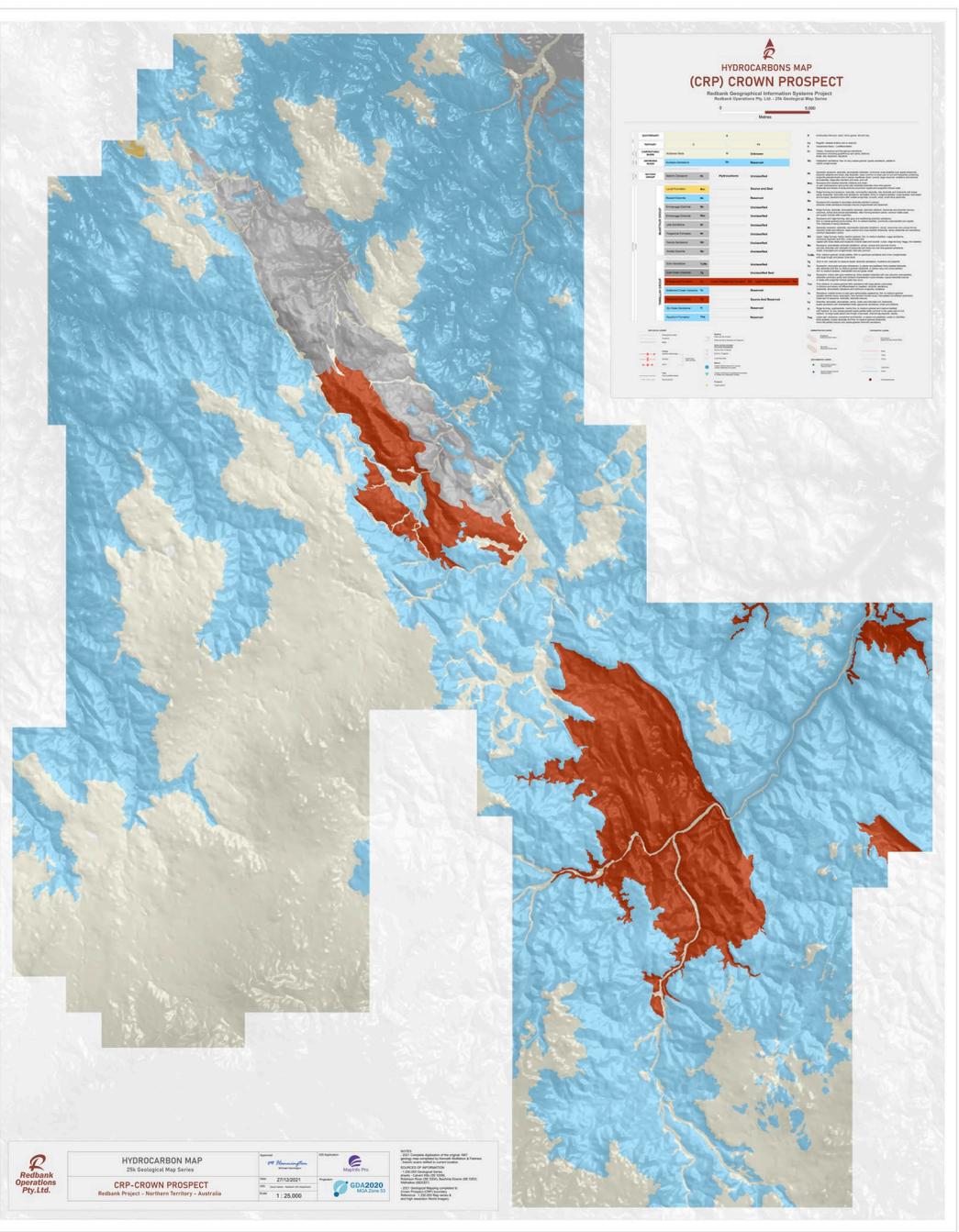
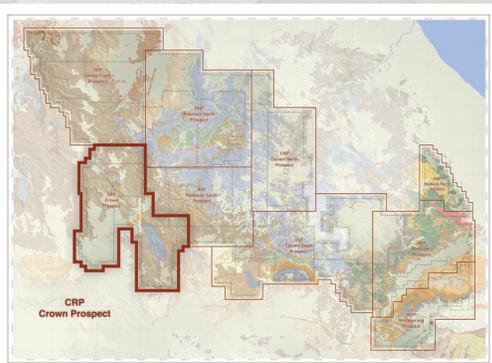


Formations and the rock types have been fully attributed in the map database. These rock types have been extracted from Geoscience Australia and re-coded to Redbank Operations database systems.

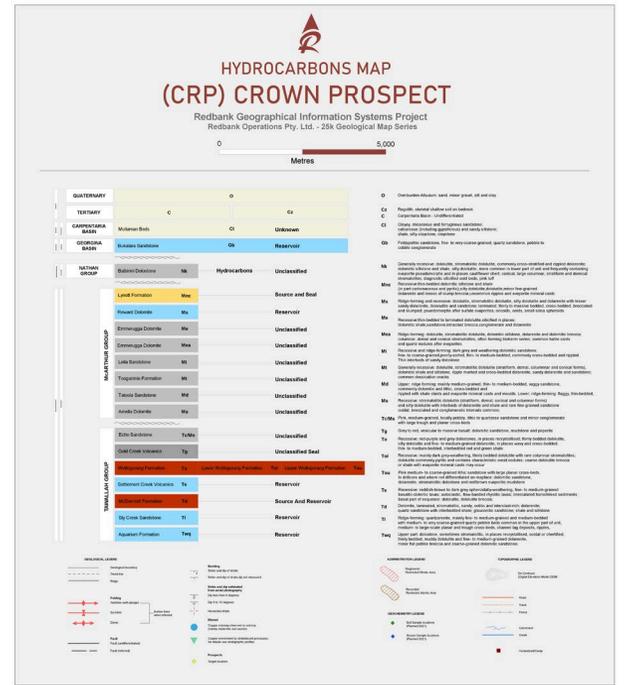
Contact boundaries are approximate and will be updated as field data becomes available.

Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect Hydrocarbons Map

Hydrocarbon classifications have been completed by John Beeson, these layers are fully attributed and available on our server for further investigations.



25k-Geological Map Series
Crown-Formations

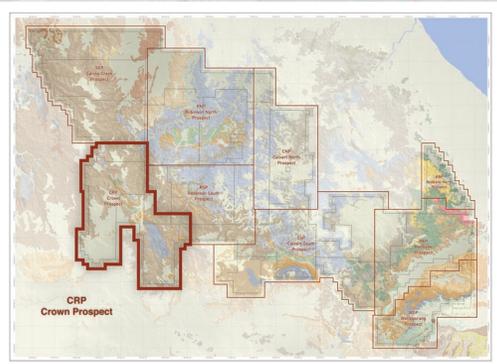


Hydrocarbons have been fully attributed in the map database.

Contact boundaries are approximate and will be updated as field data becomes available.

Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Satellite Imagery

The highest quality satellite imagery has been clipped to CRP boundary and available on our server.



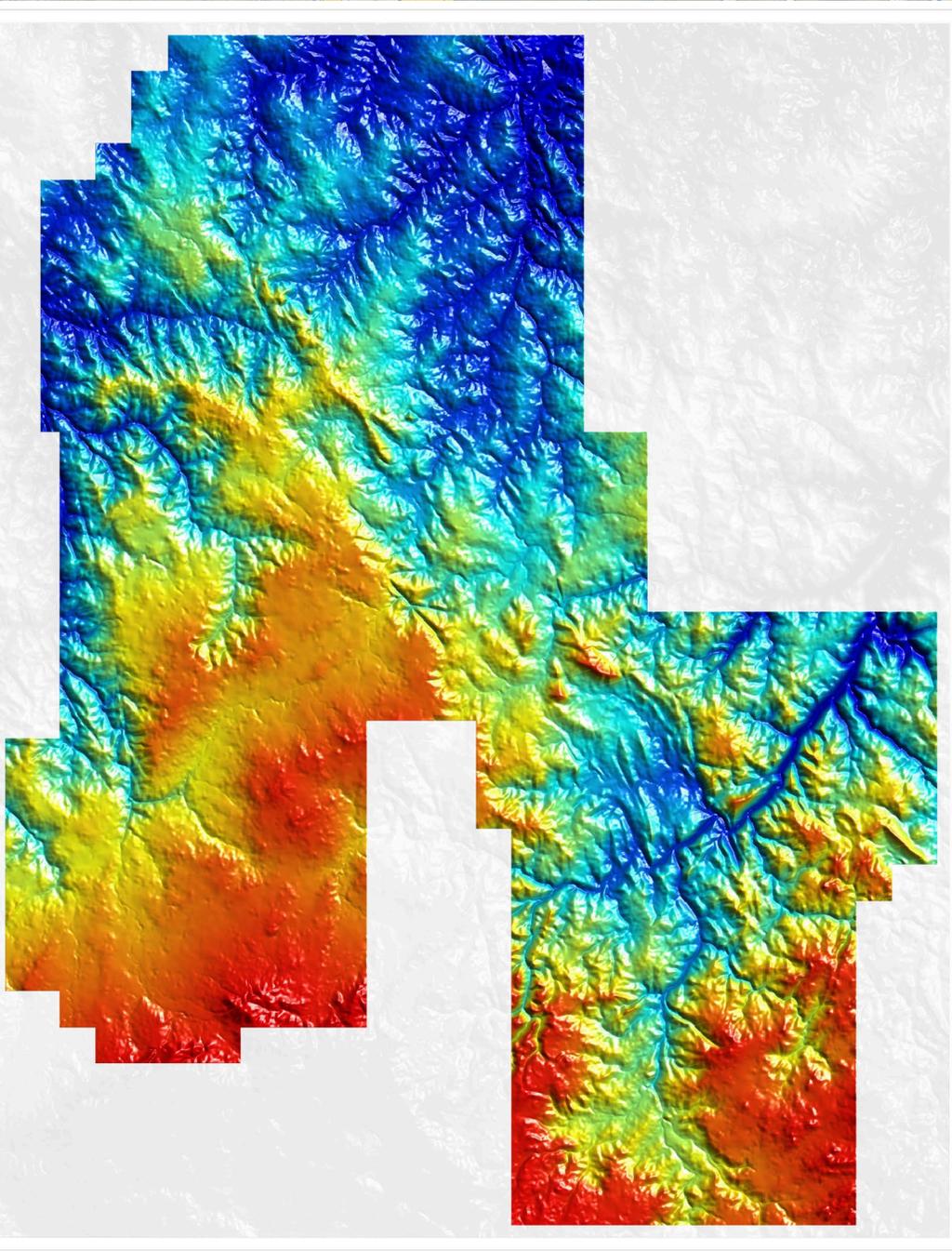
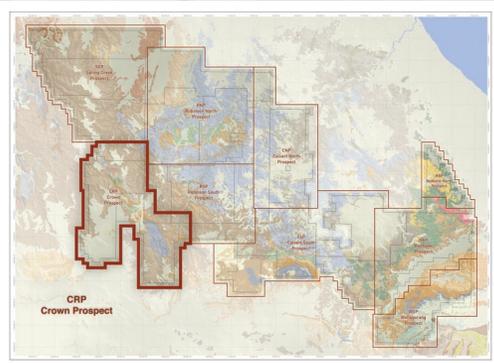
25k-Geological Map Series
Crown-Satellite Imagery



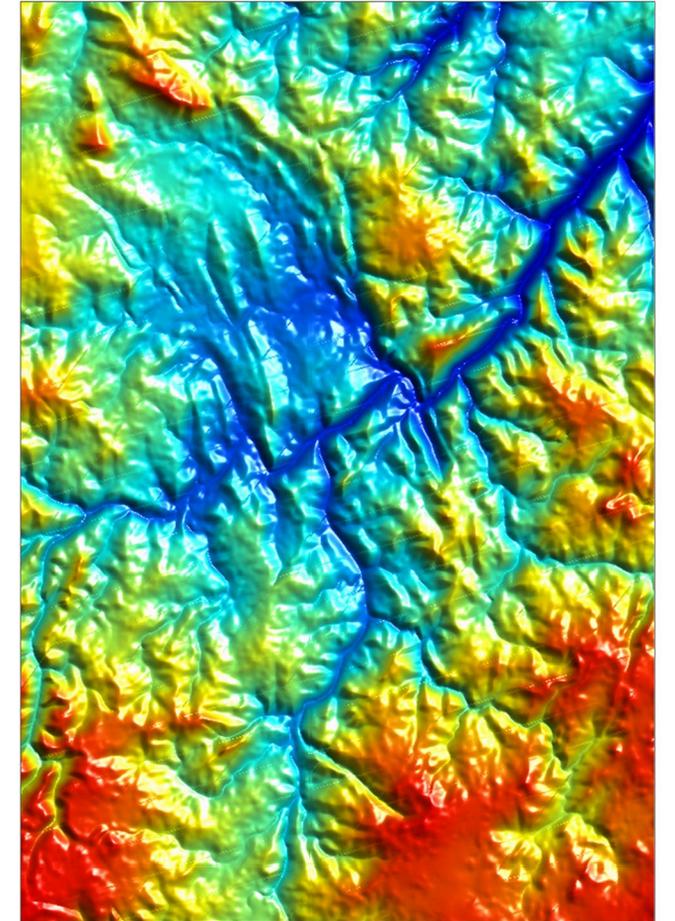
CRP-Imagery has been extracted from the pix50cm World Imagery tiles, these super high resolution imagery tiles have been extracted to the CRP and then merged into one layer, this layer has then been clipped to the CRP prospect boundary and available on our server, this process is supplied in a MapInfo .mrx file, which is super efficient and a processor friendly system for workflow.

Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Digital Elevation Model

This DEM is available in the workspace, there has been a contour layer extracted at 5m intervals, this DEM is also available for the "Discover 3D" module within MapInfo.



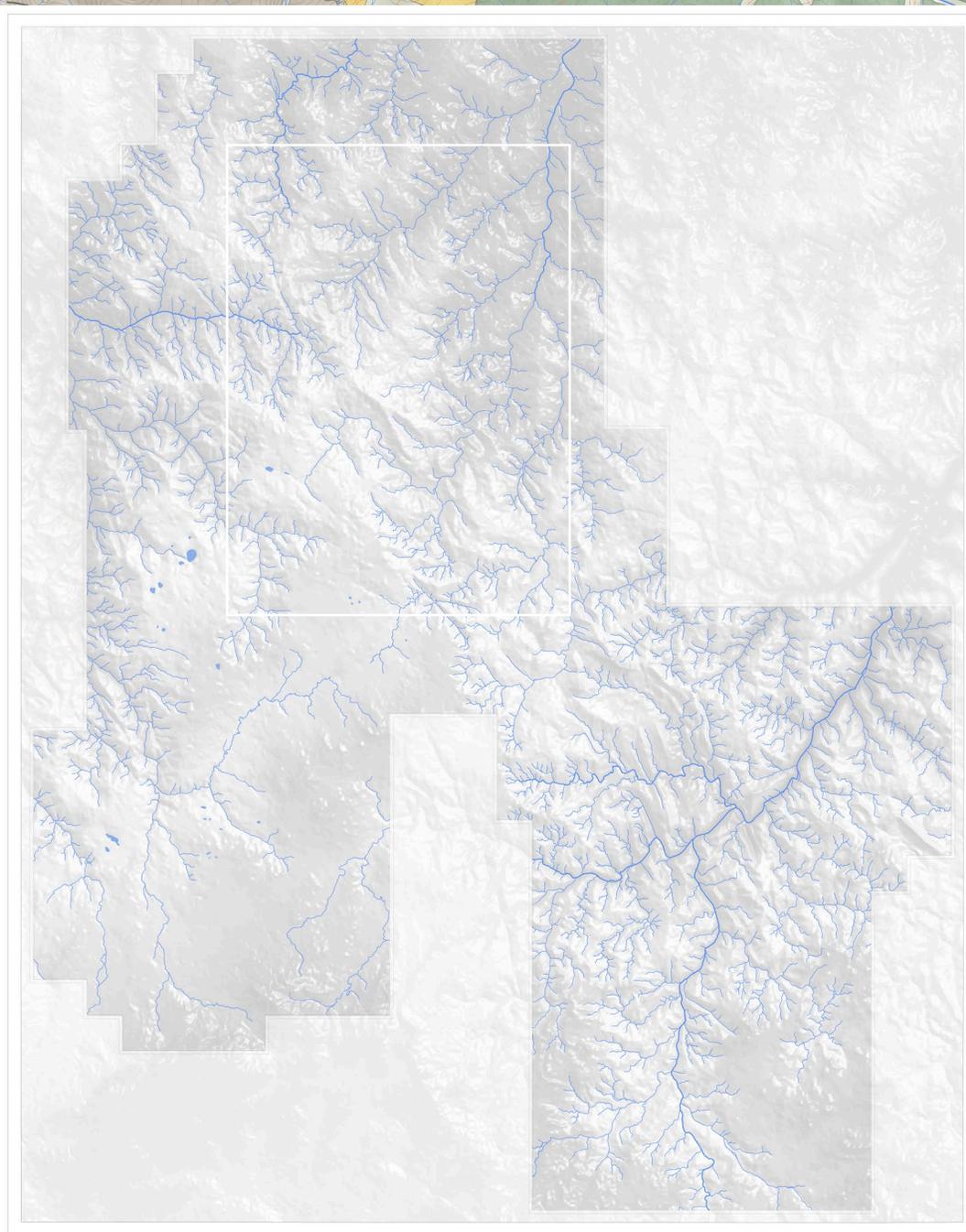
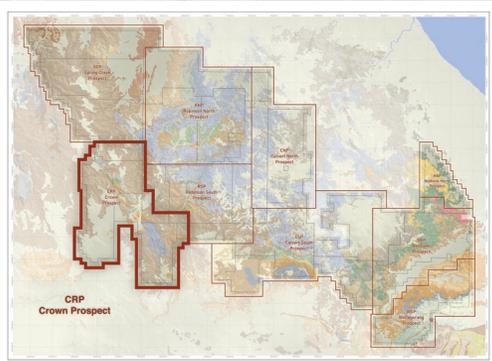
25k-Geological Map Series
DEM-1 Second SRTM Hydro-enforced



The 1 second SRTM derived DEM-H Version 1.0 is a 1 arc second (~30 m) gridded digital elevation model (DEM) that has been hydrologically conditioned and drainage enforced. The DEM-H captures flow paths based on SRTM elevations and mapped stream lines, and supports delineation of catchments and related hydrological attributes

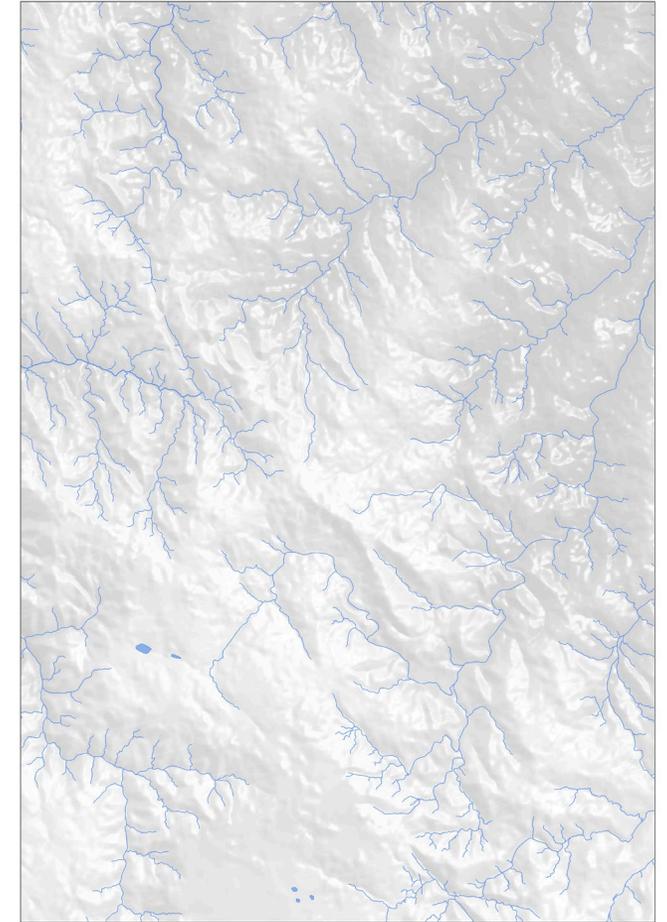
Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Hydrology

Detailed hydrology layers are available in the workspace. Rivers, Creeks and Catchment layers are fully attributed and these layers have been supplied as individual catchment areas, as well as a combined hydrology layer.



25k-Geological Map Series
Rivers, Creeks & Catchments

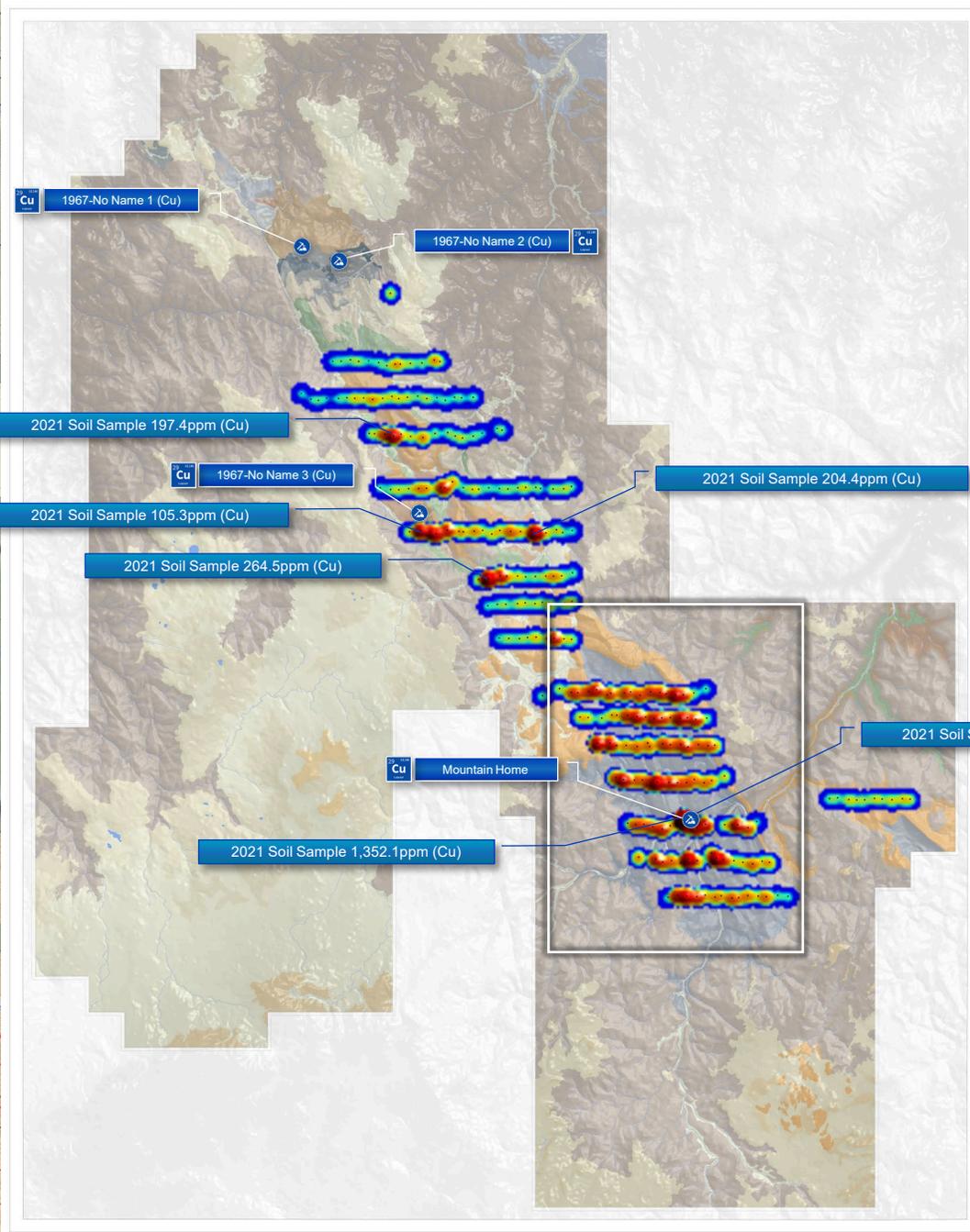
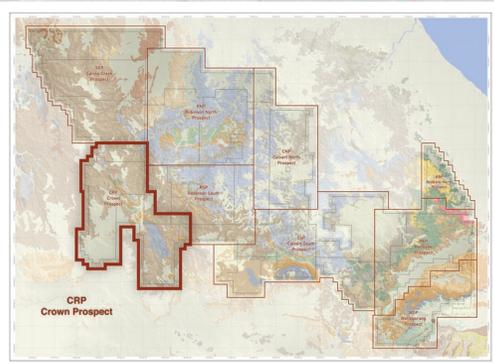
Insert Map



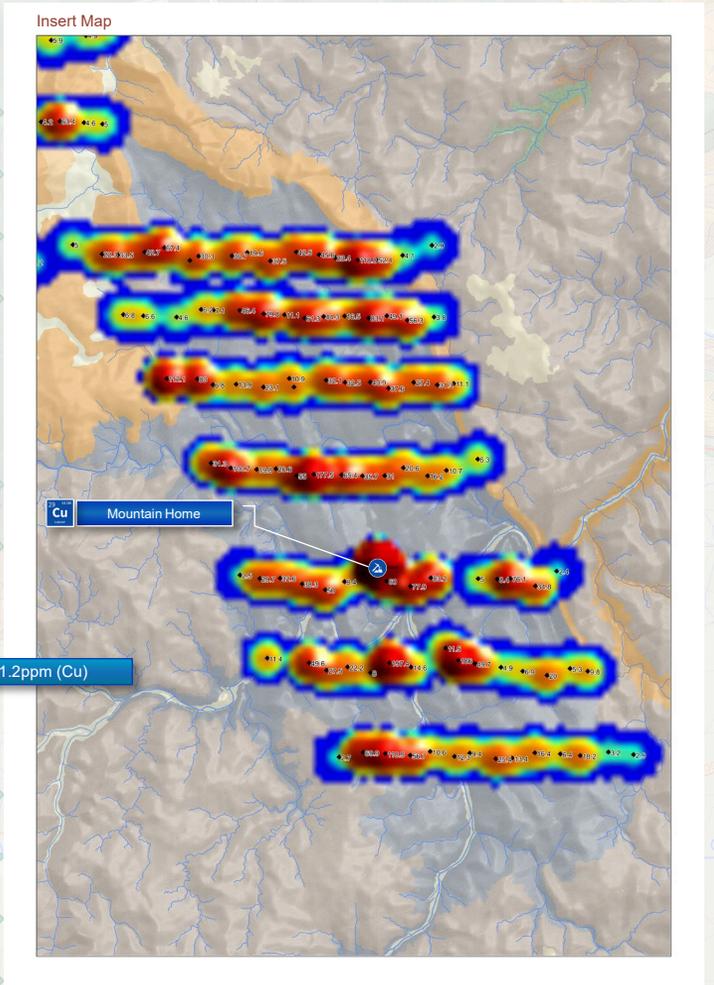
Rivers, Creeks and the catchments for these watercourses have been meticulously digitised and have been fully attributed in the database. As our prospects have high rainfall and erosion these watercourse catchments could be valuable for investigation & detection from soil & stream samples

Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
2021-Soil Samples
236 Soil Sample locations

Heatmap created showing 236 soil sample locations in Cu-ppm

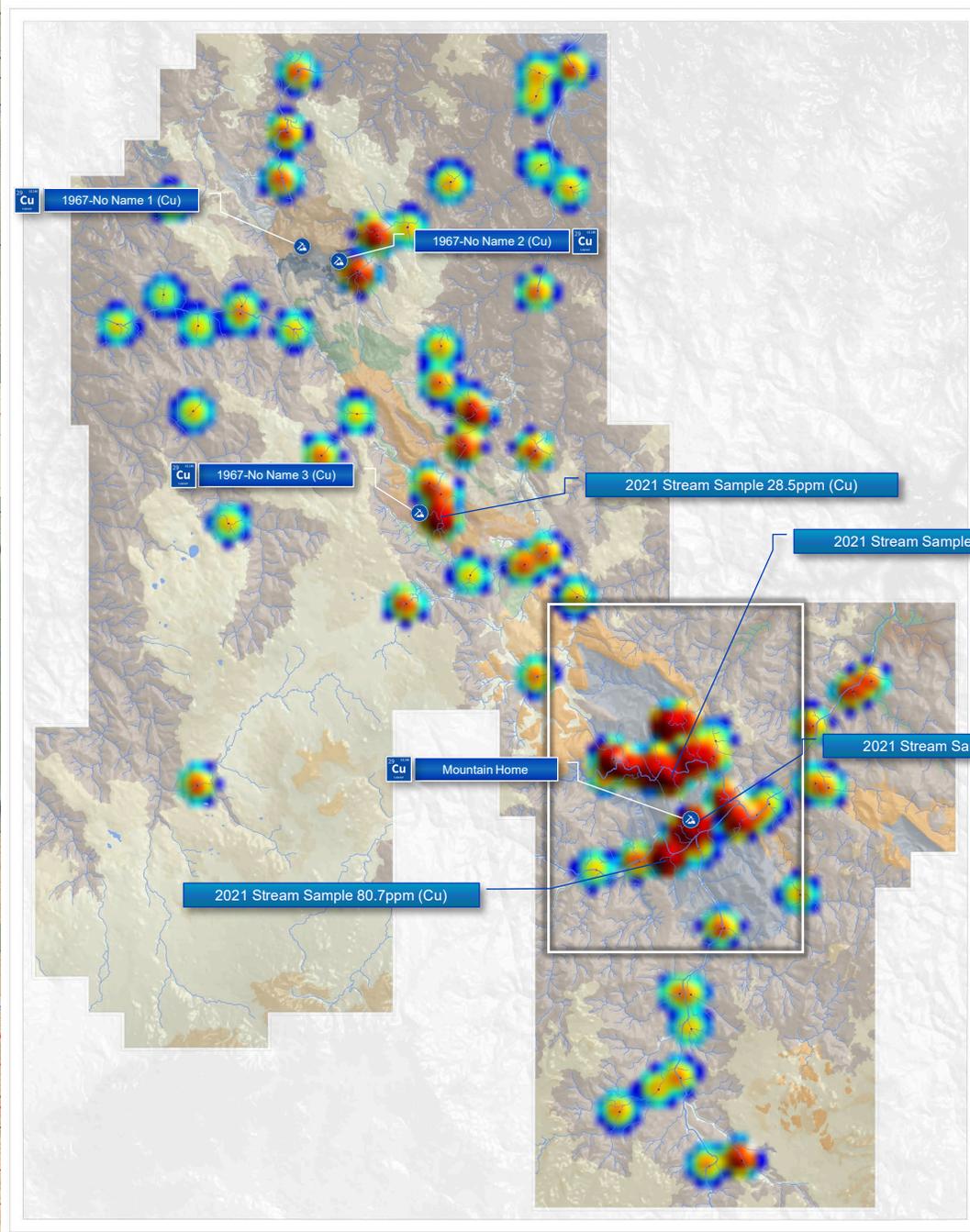
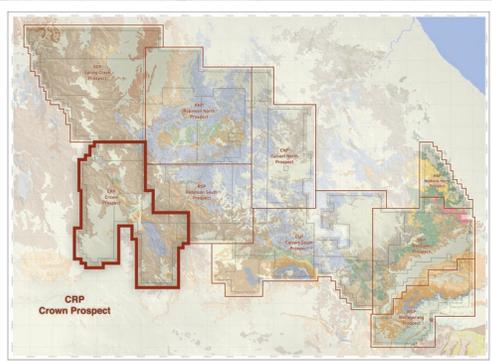


25k-Geological Map Series
Cu-ppm Heatmap

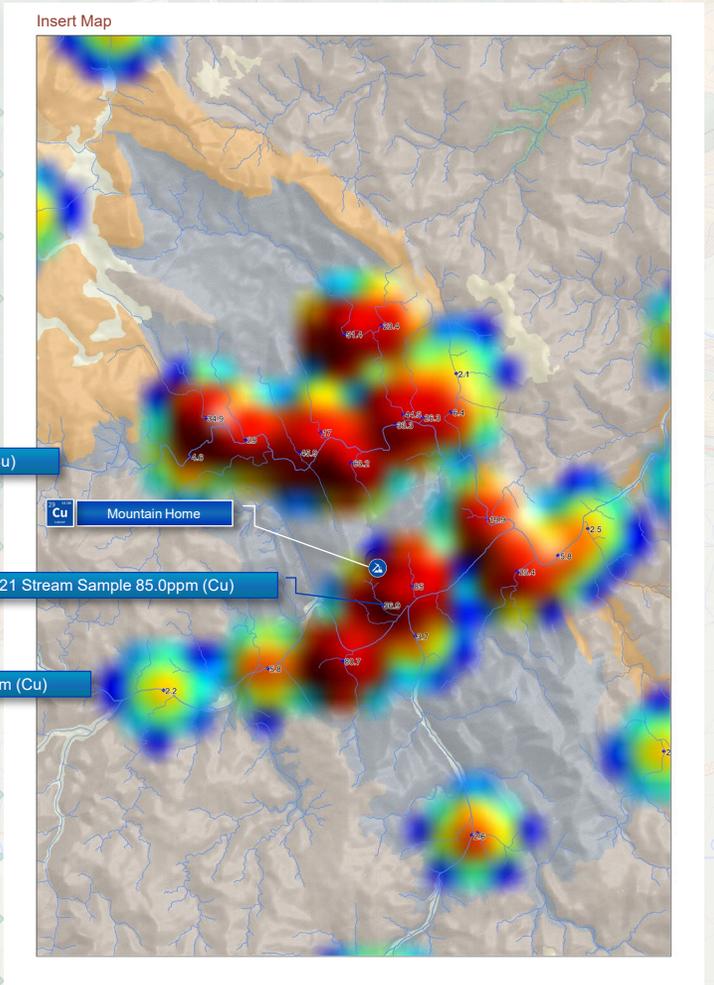


Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
2021-Stream Samples
85 Stream Sample locations

There are 85 Stream Sediment sample points in the CRP

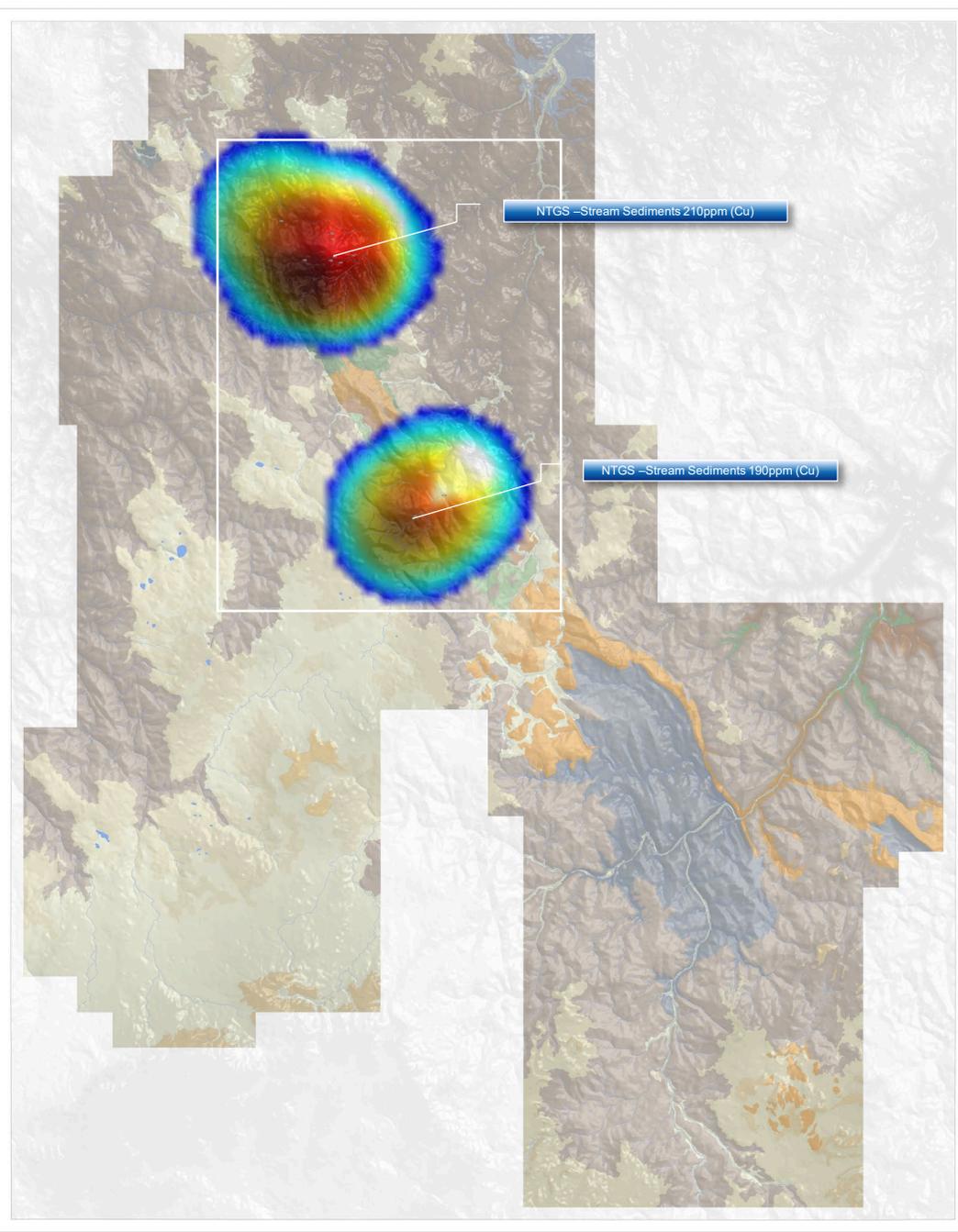
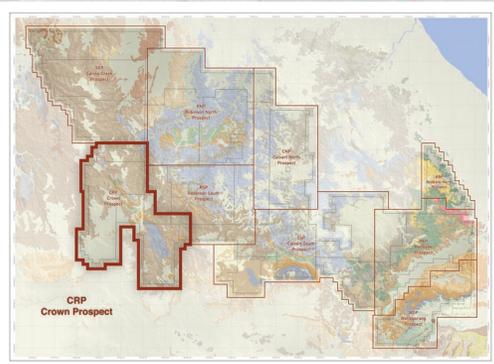


25k-Geological Map Series
Cu-ppm Heatmap

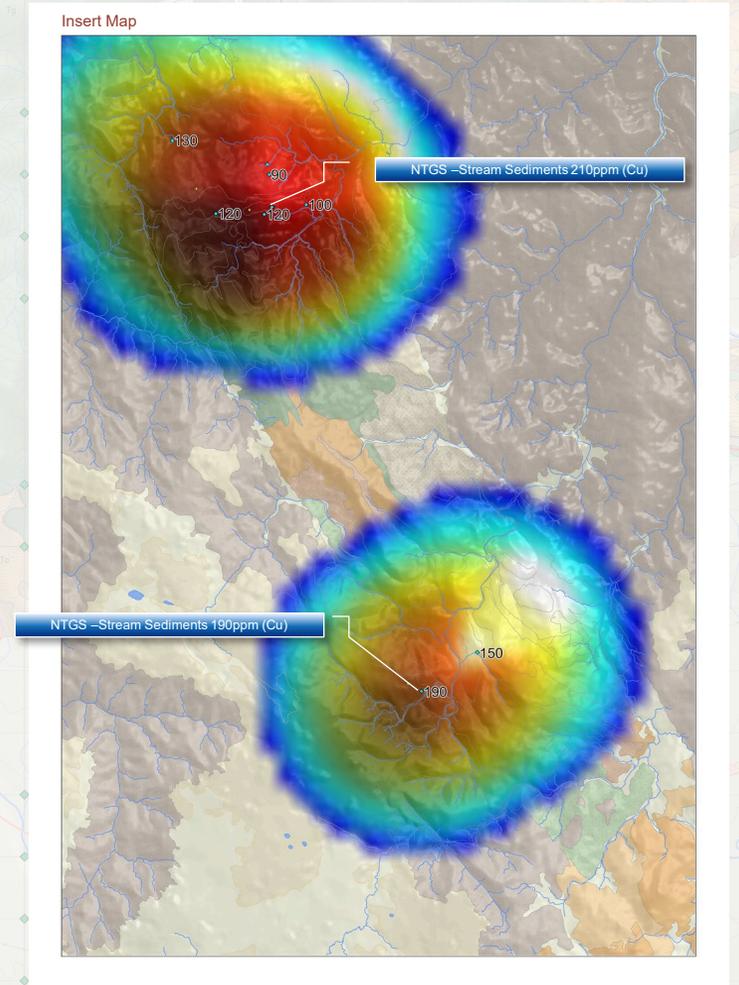


Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
NTGS-Stream Sediments

There are 10 Stream Sediment sample points in the CRP that have 90+ppm of Cu

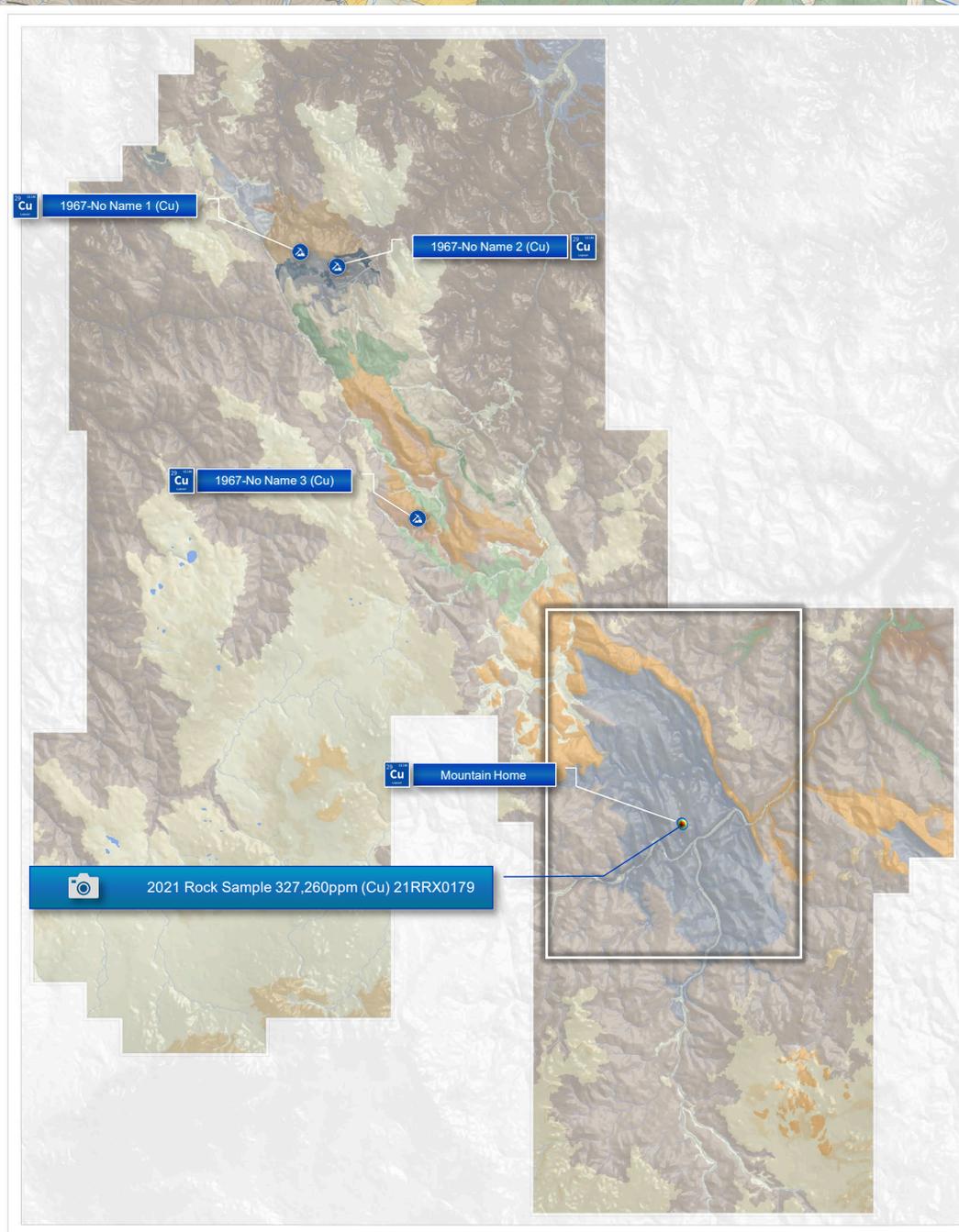
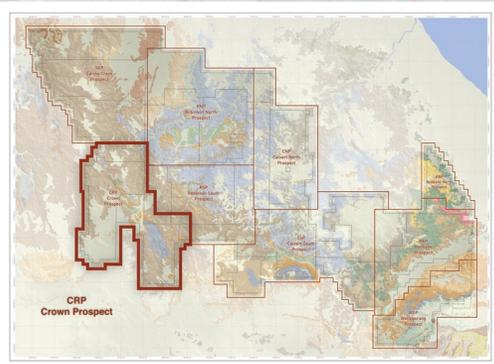


25k-Geological Map Series
90+ppm – Cu Heatmap



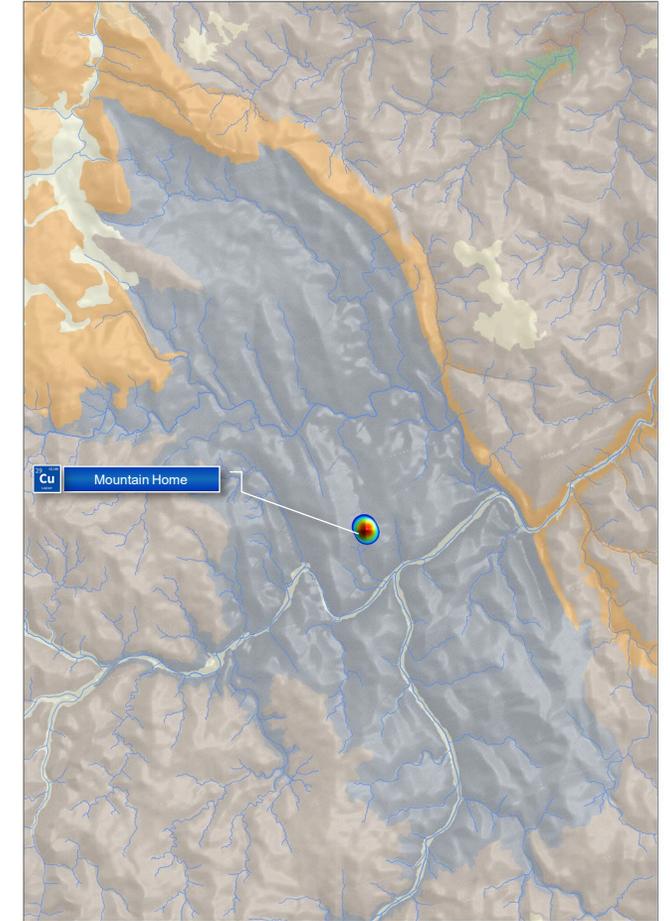
Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
2021-Rock Samples
10 Rock Sample locations

Heatmap created showing 10 Rock sample locations in Cu-ppm

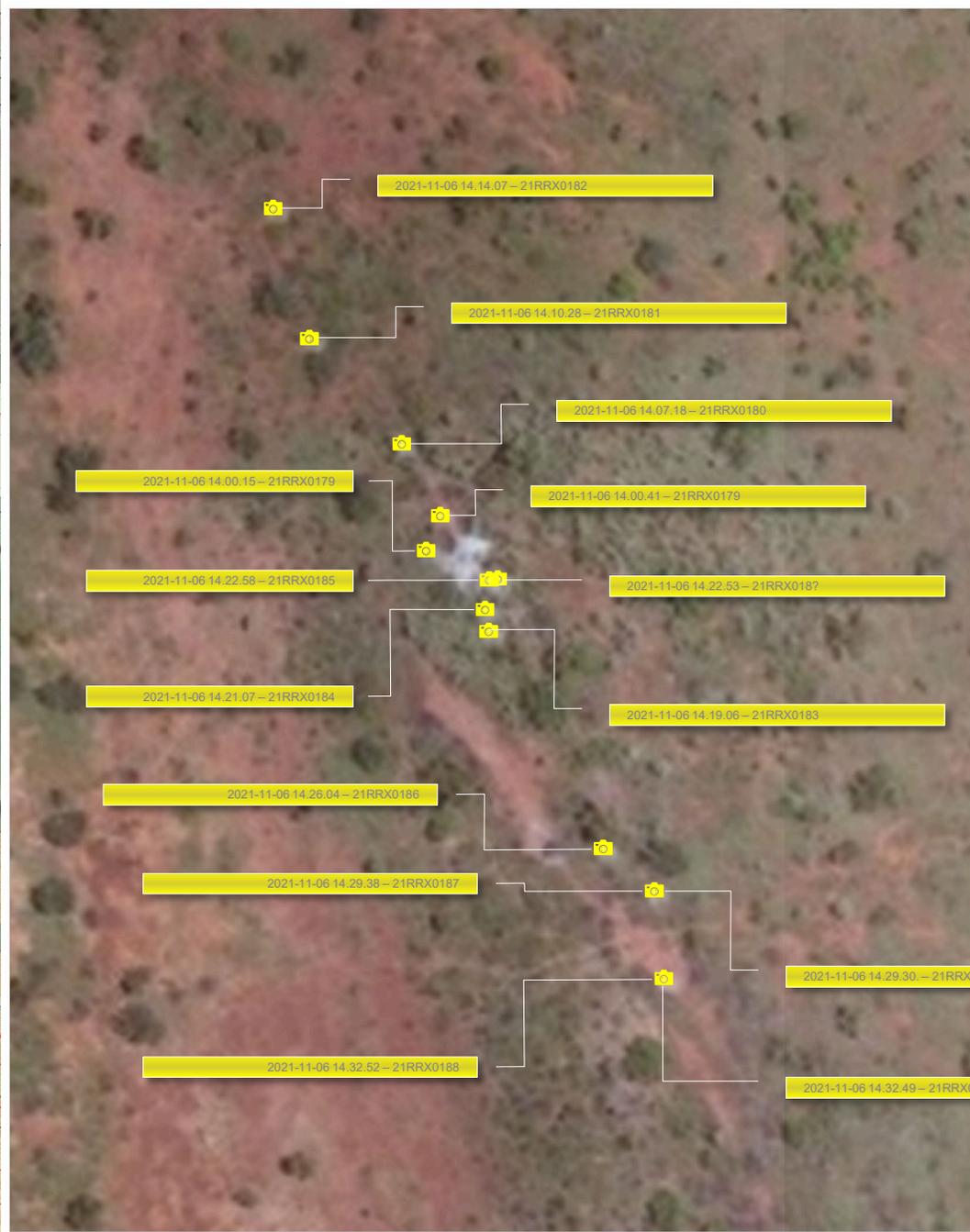
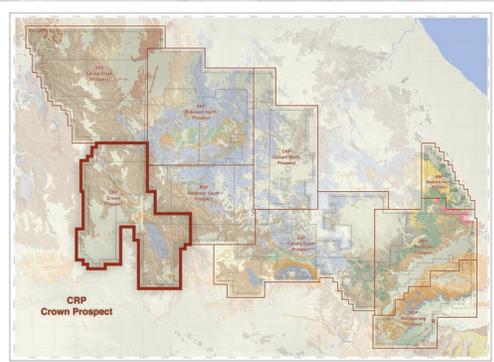


25k-Geological Map Series
Cu-ppm Heatmap

Insert Map

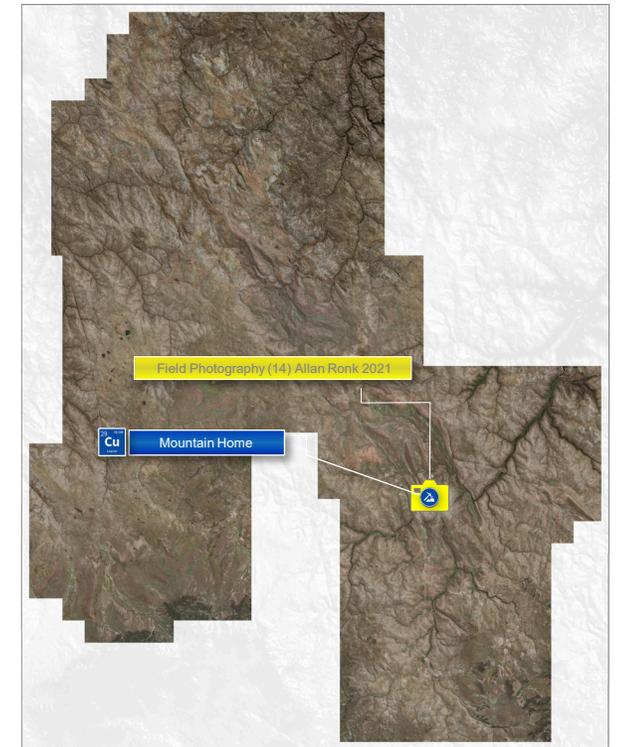


Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Field Photography
2021 Mountain Home – Allan Ronk



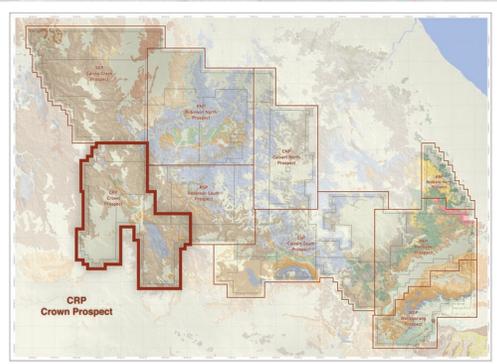
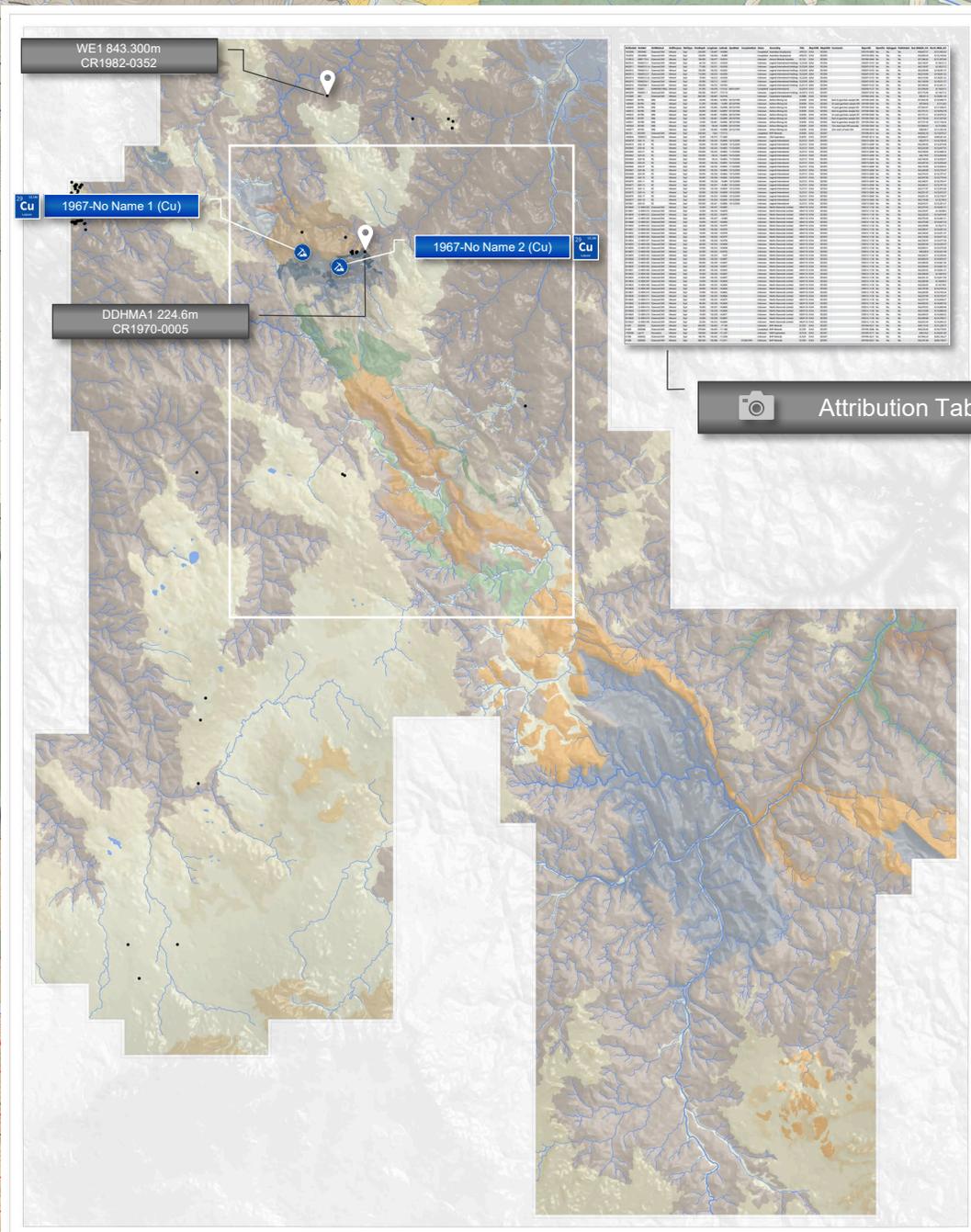
25k-Geological Map Series
Field Photography – Allan Ronk

Overview Map



Redbank Exploration Project NT
 25k Geological Map Series
**CRP-Crown Prospect
 Drillholes (Historical)**

There are 79 historical drillholes in the CRP Prospect area
 (Please see table contents for details)

WE1 843.300m
CR1982-0352

1967-No Name 1 (Cu)

DDHMA1 224.6m
CR1970-0005

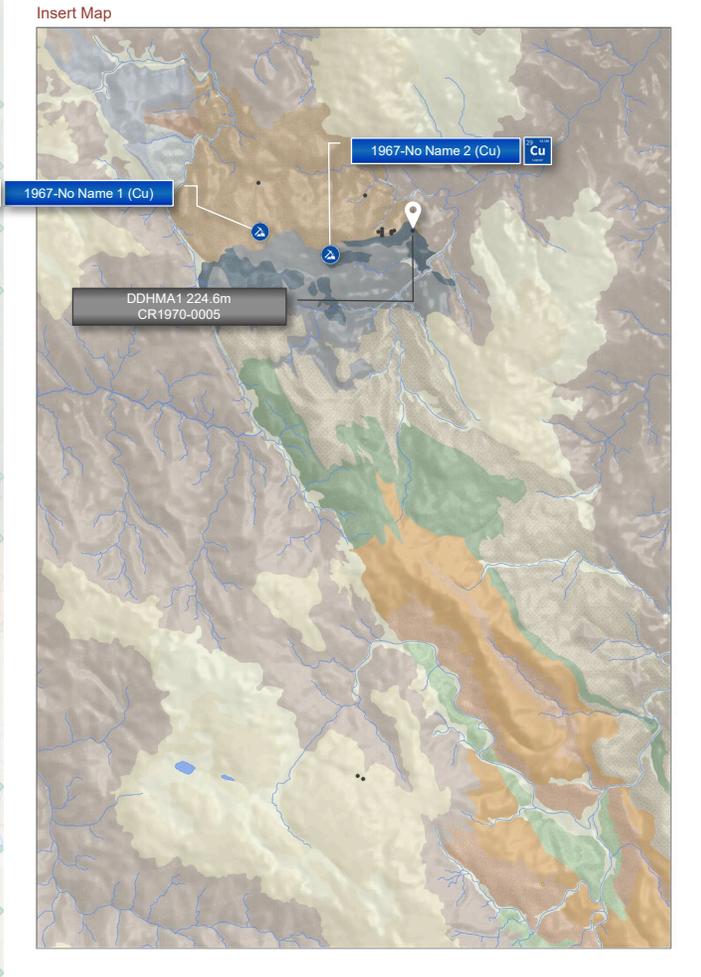
1967-No Name 2 (Cu)

ID	NAME	DEPTH (m)	DATE	STATUS	COMMENTS
WE1 843.300m	CR1982-0352	843.300	1982	Completed	
1967-No Name 1	1967-No Name 1 (Cu)		1967	Completed	
DDHMA1 224.6m	CR1970-0005	224.6	1970	Completed	
1967-No Name 2	1967-No Name 2 (Cu)		1967	Completed	

Attribution Table

25k-Geological Map Series
Drillholes (Historical)

Insert Map



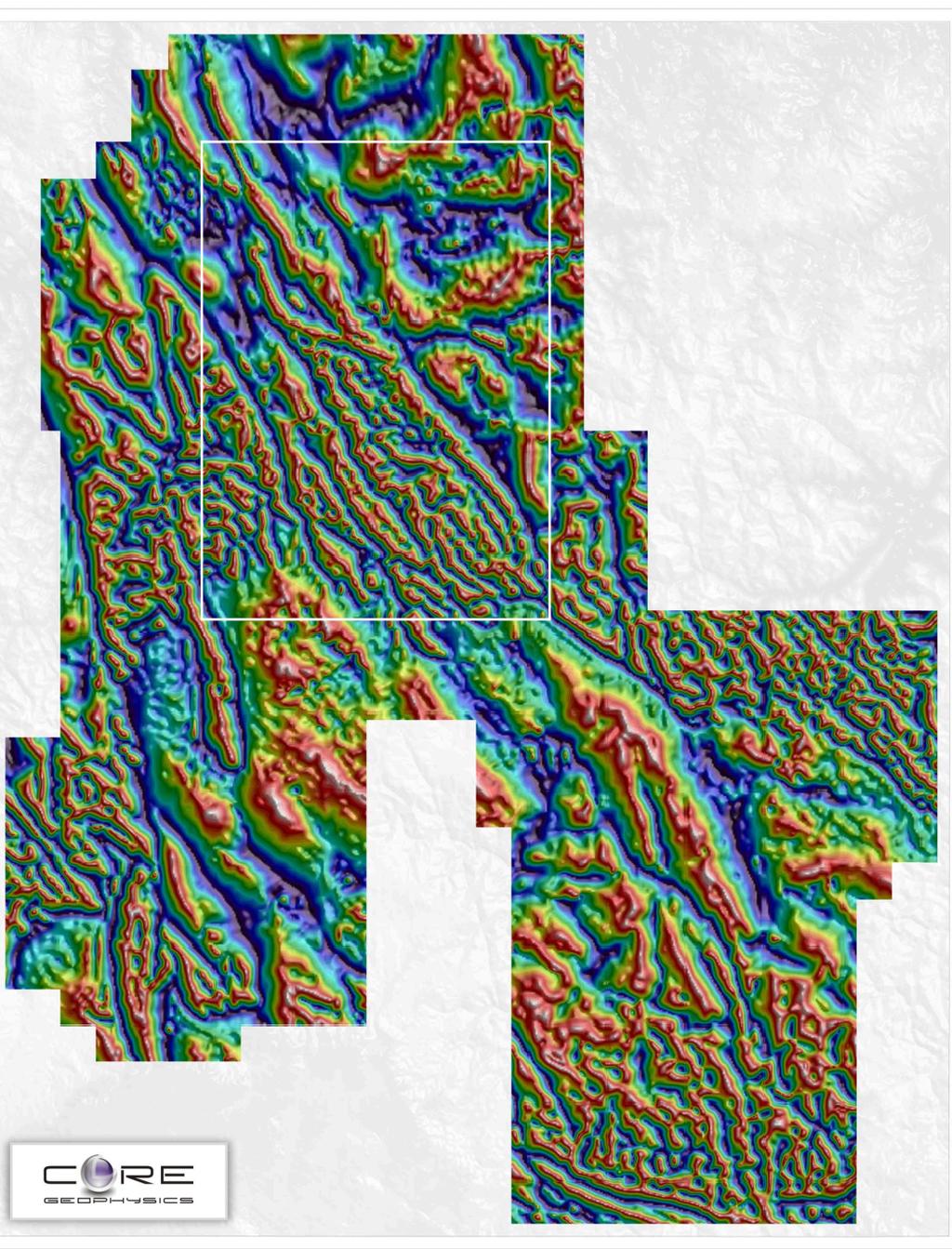
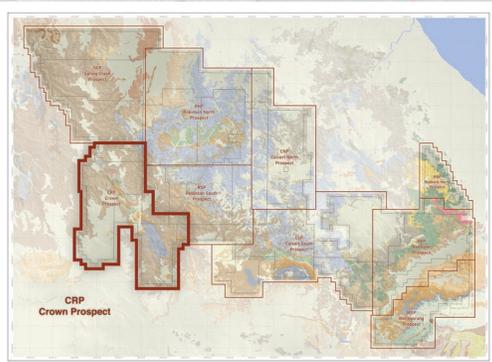
1967-No Name 1 (Cu)

DDHMA1 224.6m
CR1970-0005

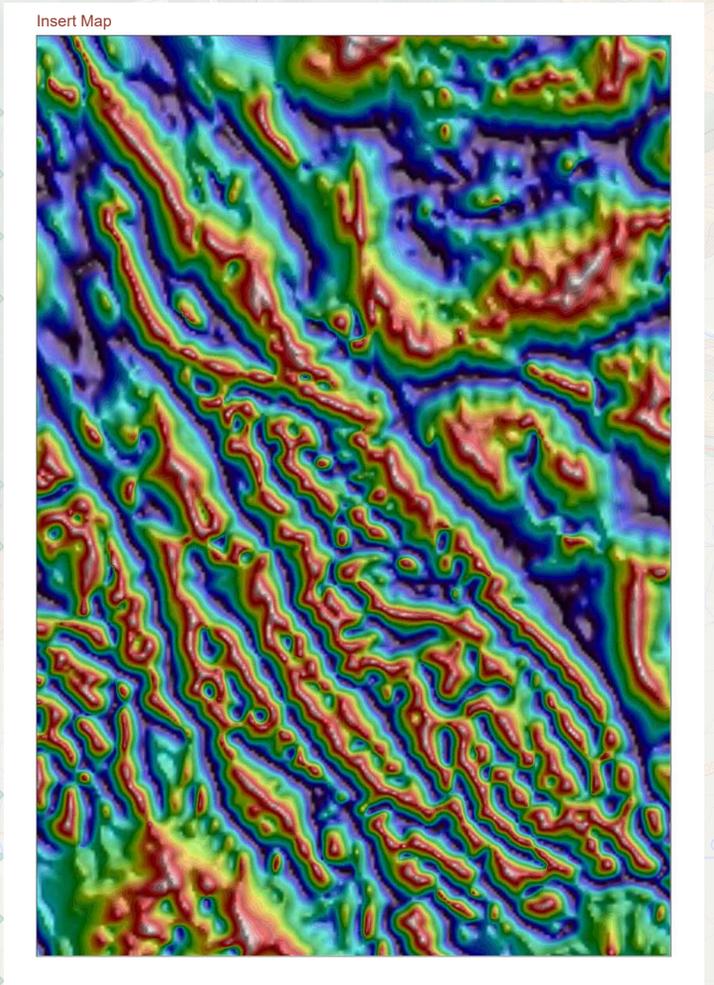
1967-No Name 2 (Cu)

Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Geophysics Images

Derived from NTGS Government Aeromagnetic Surveys
Total magnetic intensity (TMI) - reduced to pole
Tilt filter

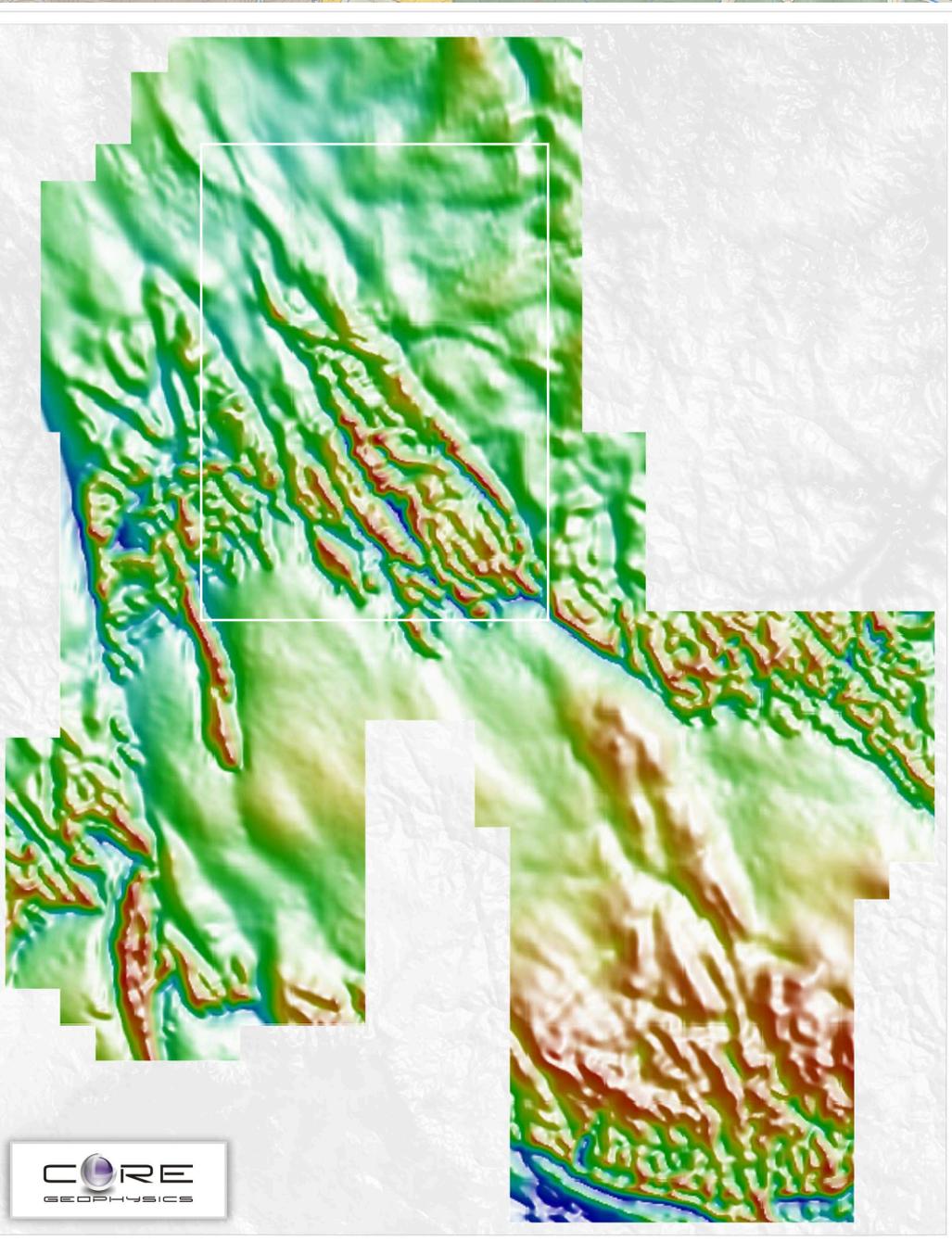
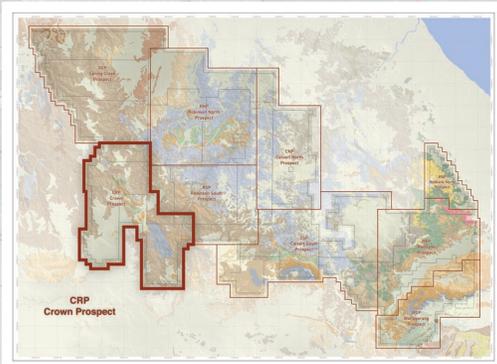


25k-Geological Map Series
TMIRTP-Tilt-nesun 99 wet



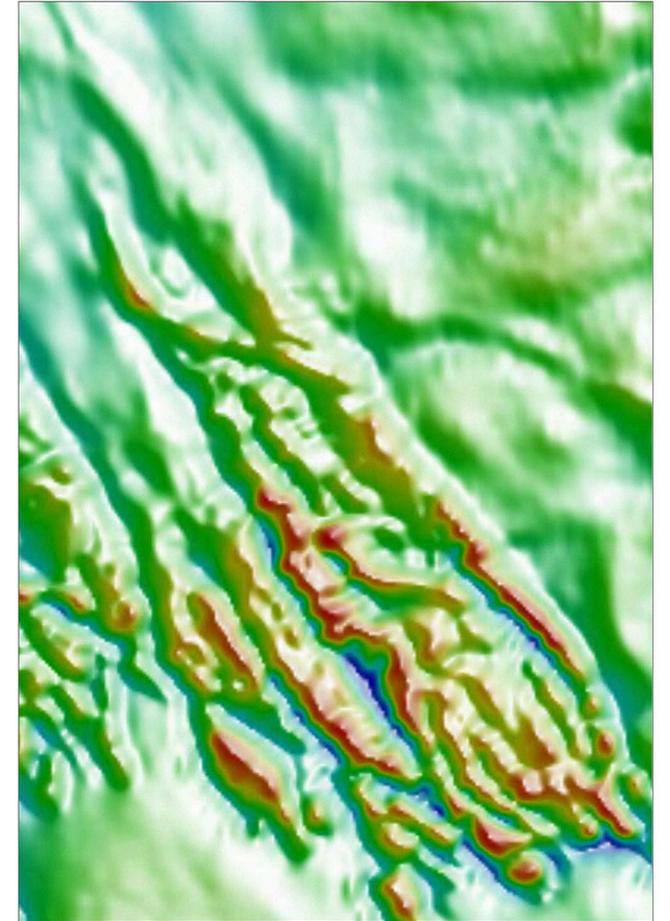
Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Geophysics Images

Derived from NTGS Government Aeromagnetic Surveys
Total magnetic intensity (TMI) - reduced to pole



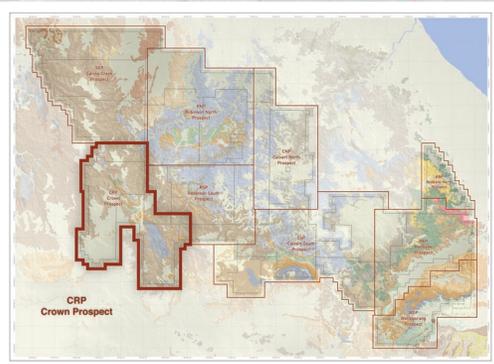
25k-Geological Map Series
TMIRTP-nesun 99 wet

Insert Map



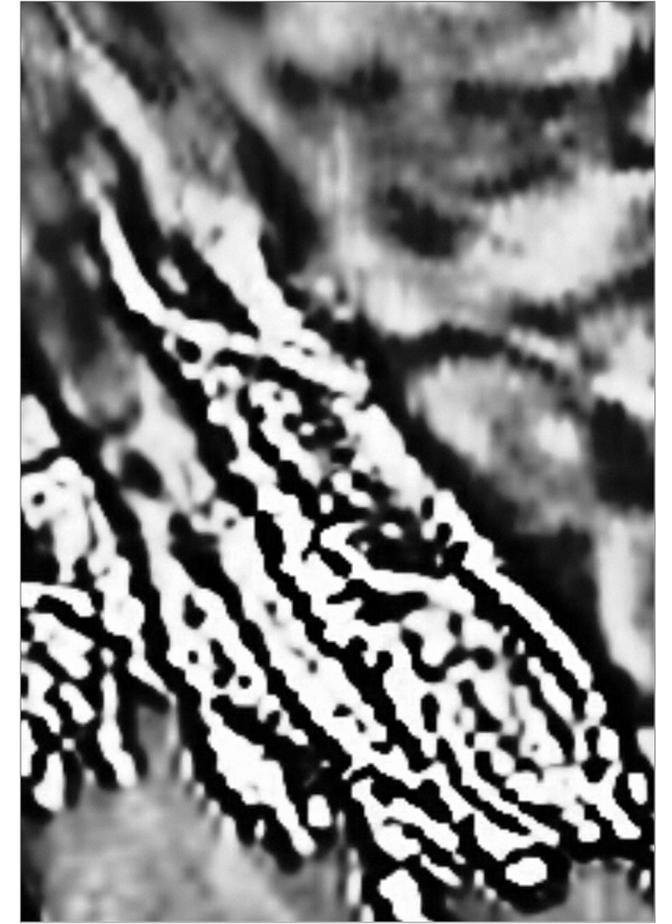
Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Geophysics Images

Derived from NTGS Government Aeromagnetic Surveys
Total magnetic intensity (TMI) - reduced to pole
First vertical derivative



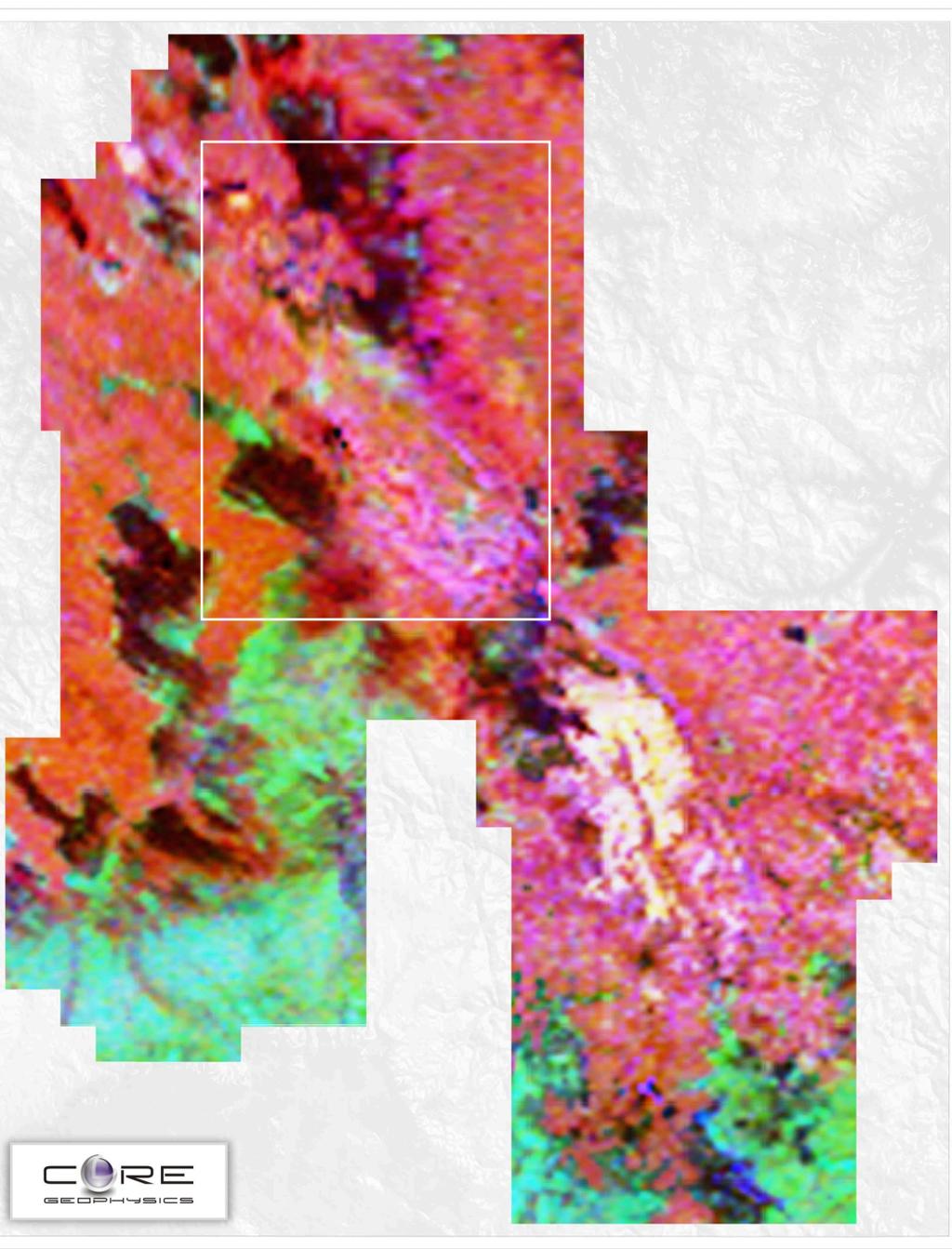
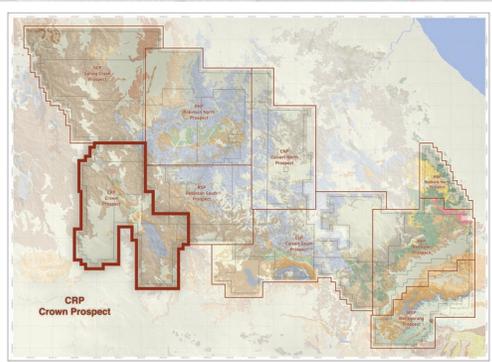
25k-Geological Map Series
TMIRTP-1VD-he-g

Insert Map

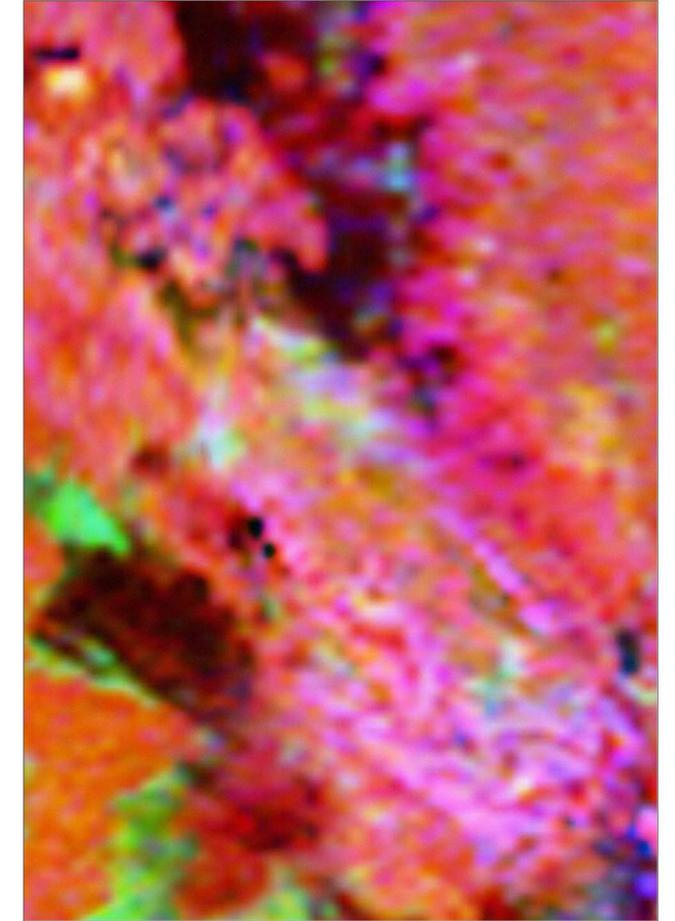


Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Geophysics Images

Derived from NTGS Government Aeromagnetic Surveys Ternary radioelement potassium(K)-thorium(Th)-uranium(U) channel data. The image is a red-green-blue (RGB) composite using a histogram-equalised colour-stretch for each of the three channels.



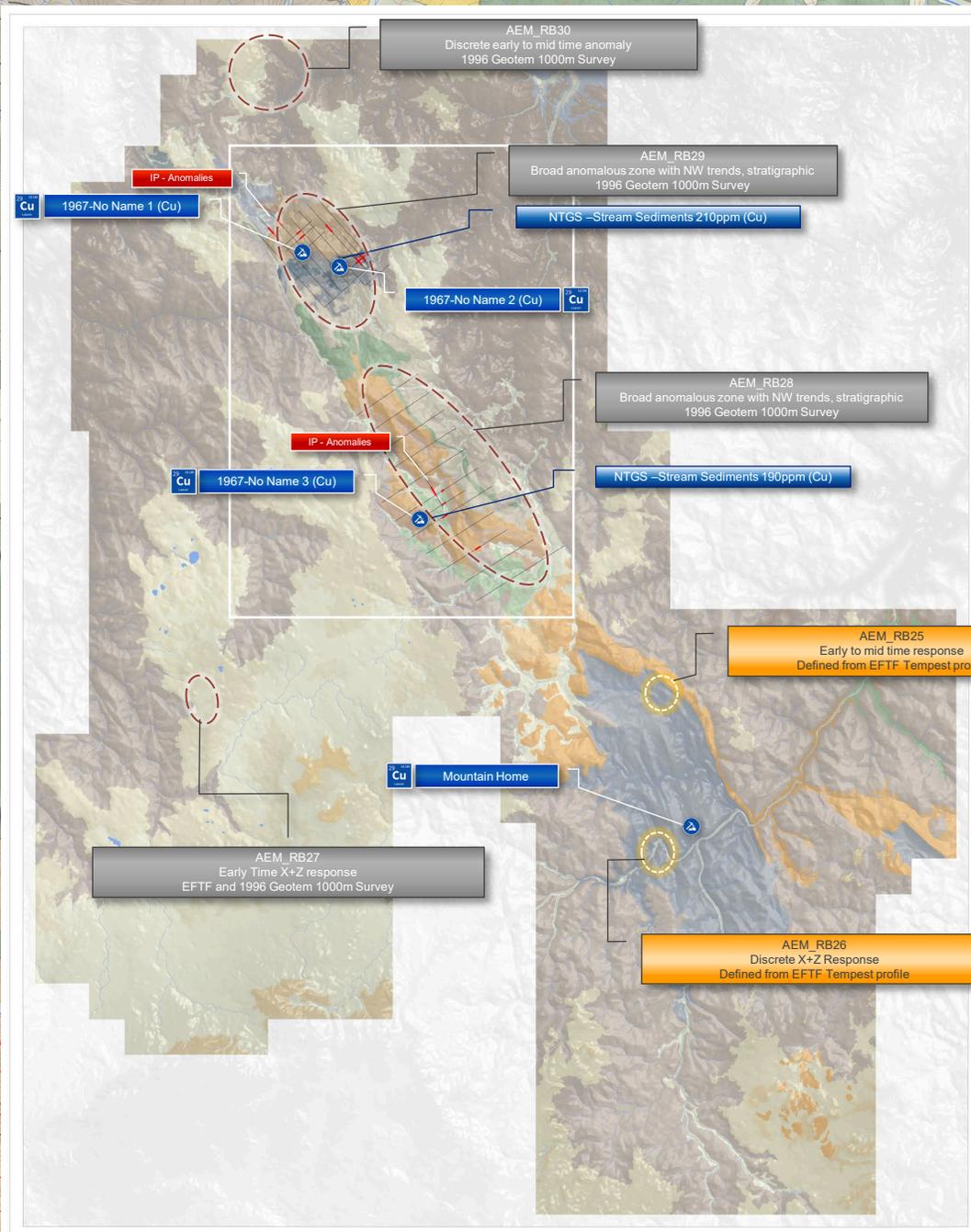
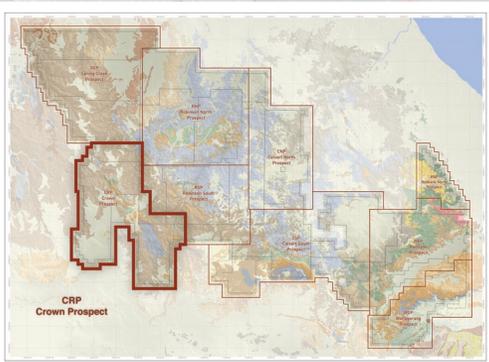
Insert Map



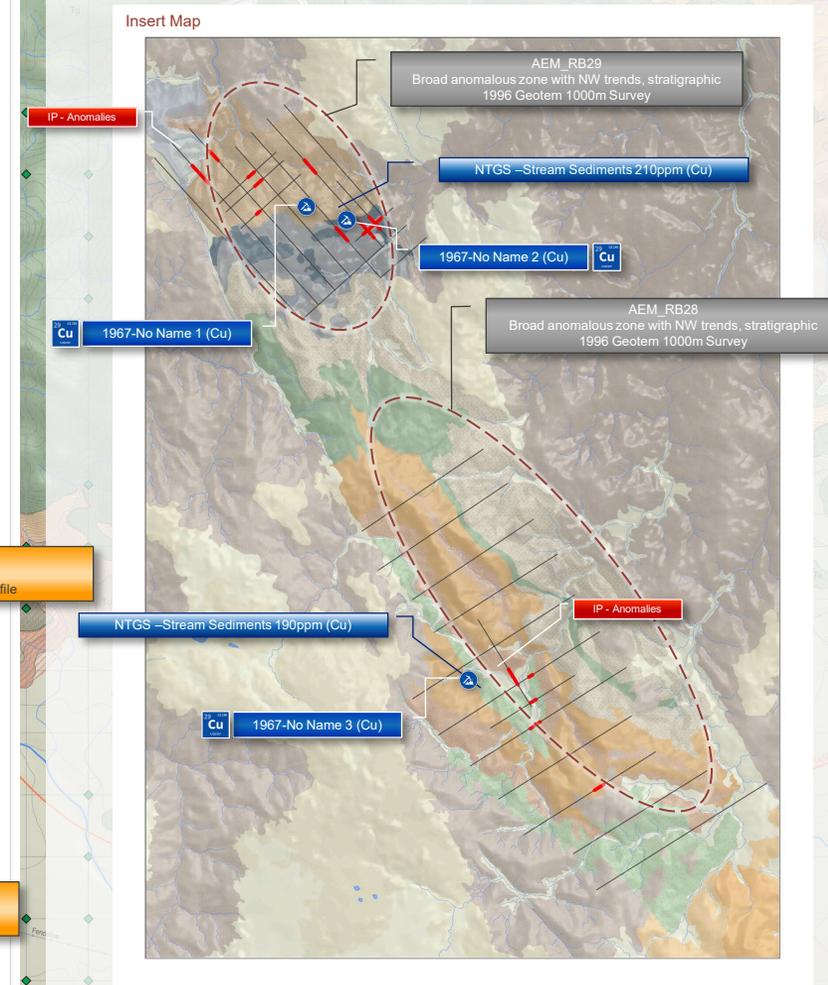
Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Areas of Interest (AOI)

AOI's available in the workspace include

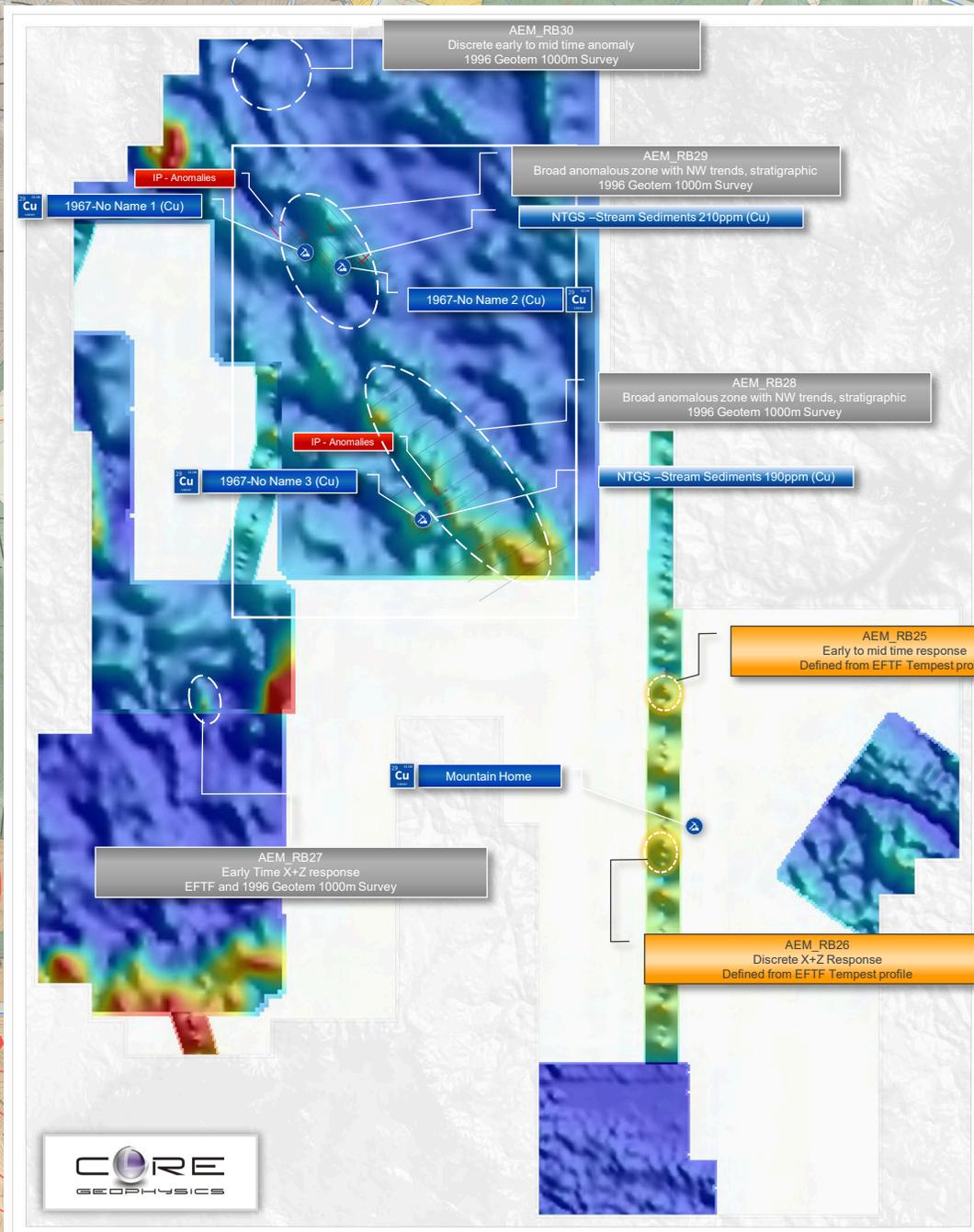
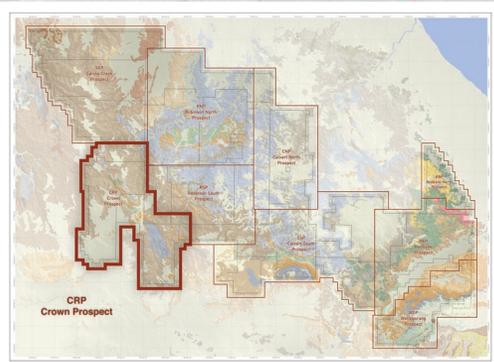
- Airborne Electromagnetics (Mat Cooper)
- Geophysical AOI (Mike Hannington)
- NTGS Stream Sediments (90+ppm Anomalies)
- 1967 Historical Cu Contacts
- 1967 Induced polarization (IP) Survey



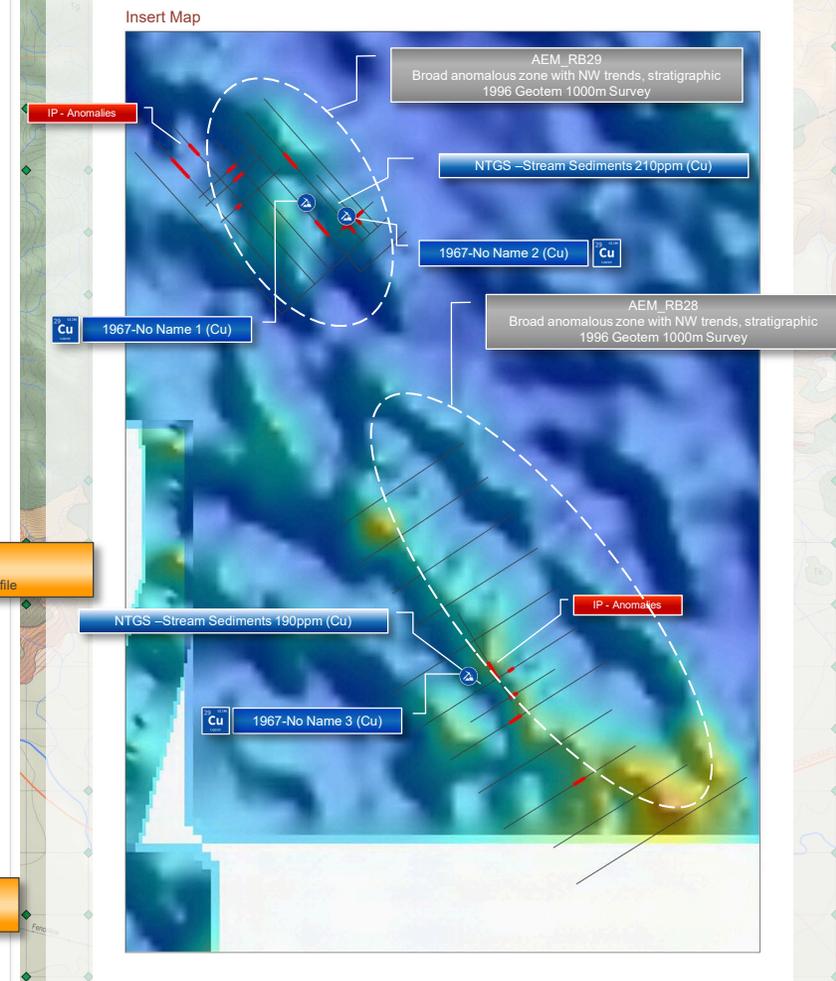
25k-Geological Map Series
Areas of Interest



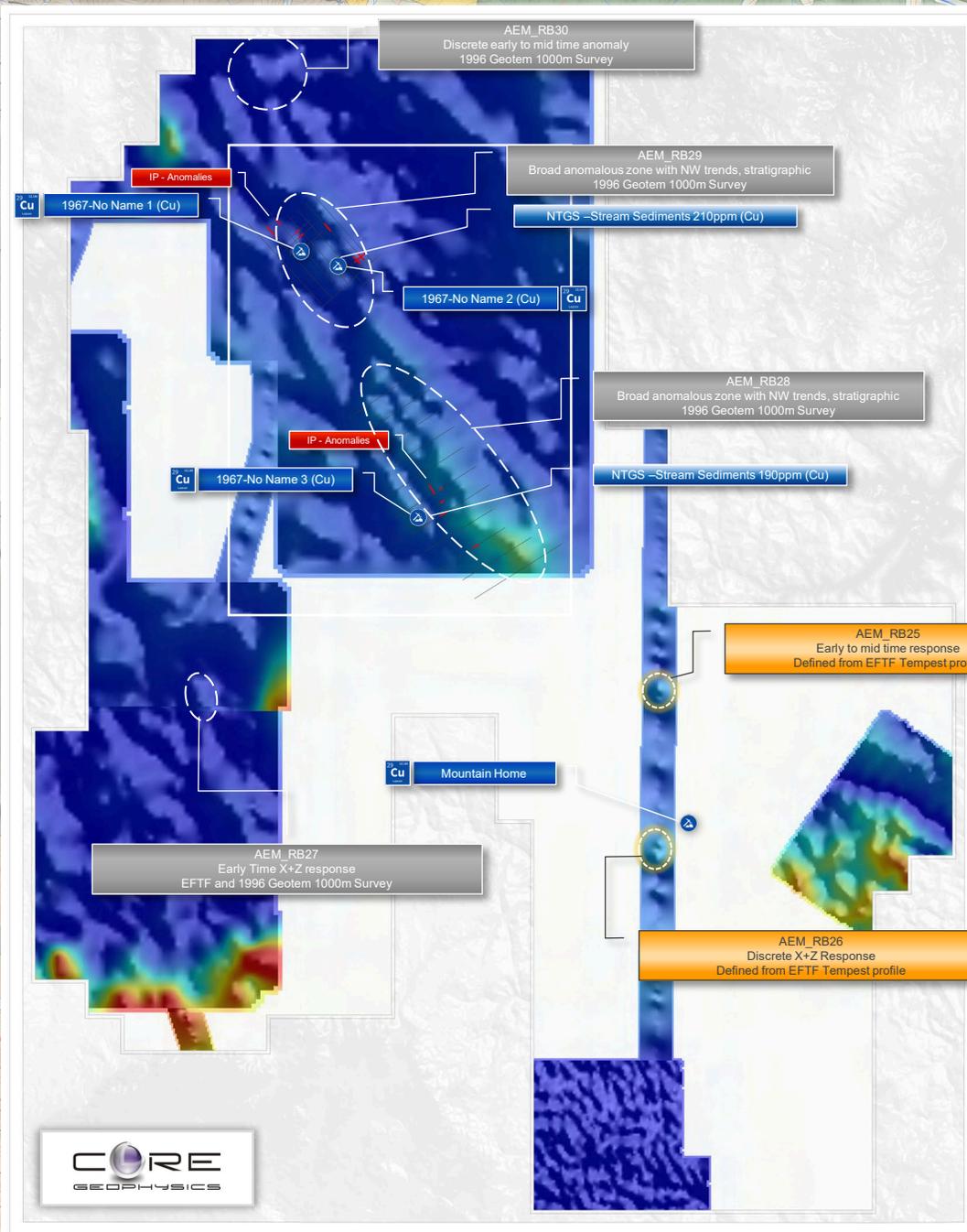
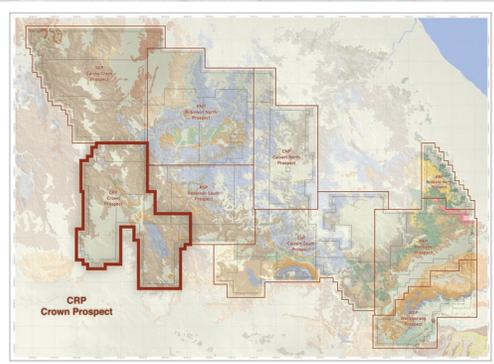
Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Areas of Interest (AOI)
Regional Government and Historical Open
File Airborne Electromagnetic (AEM)
Early Time Channel AEM Composite (ET)
Time Domain Surveys Only



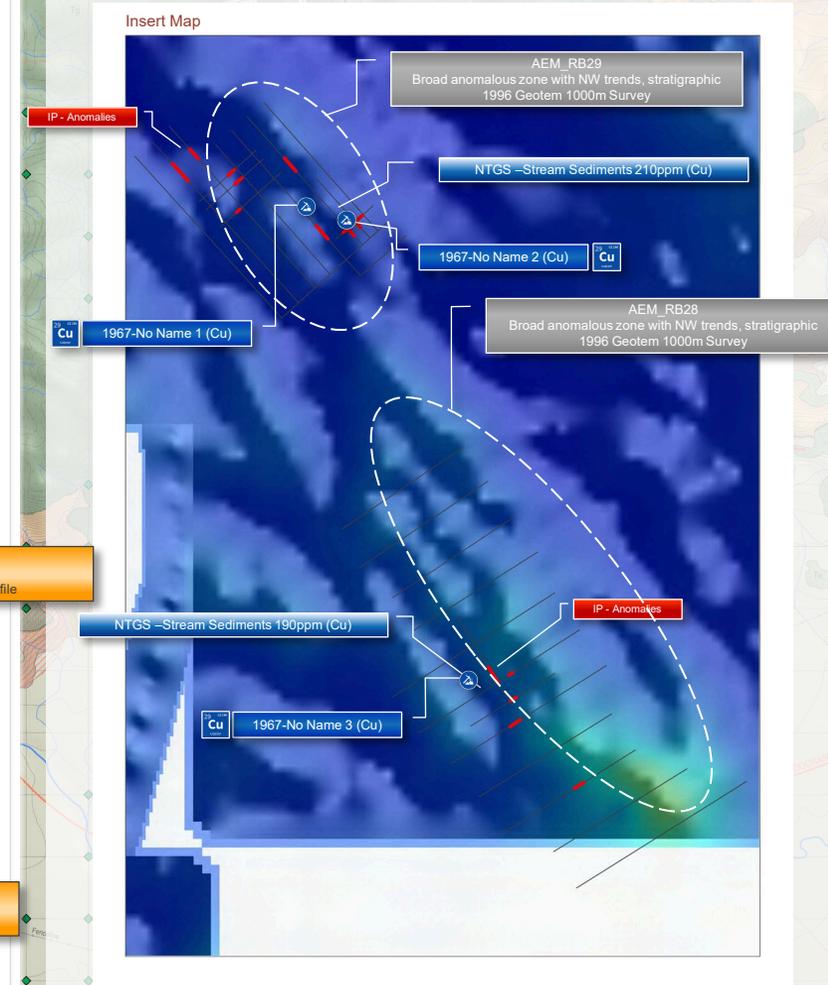
25k-Geological Map Series
Early Time Channel AEM (ET)



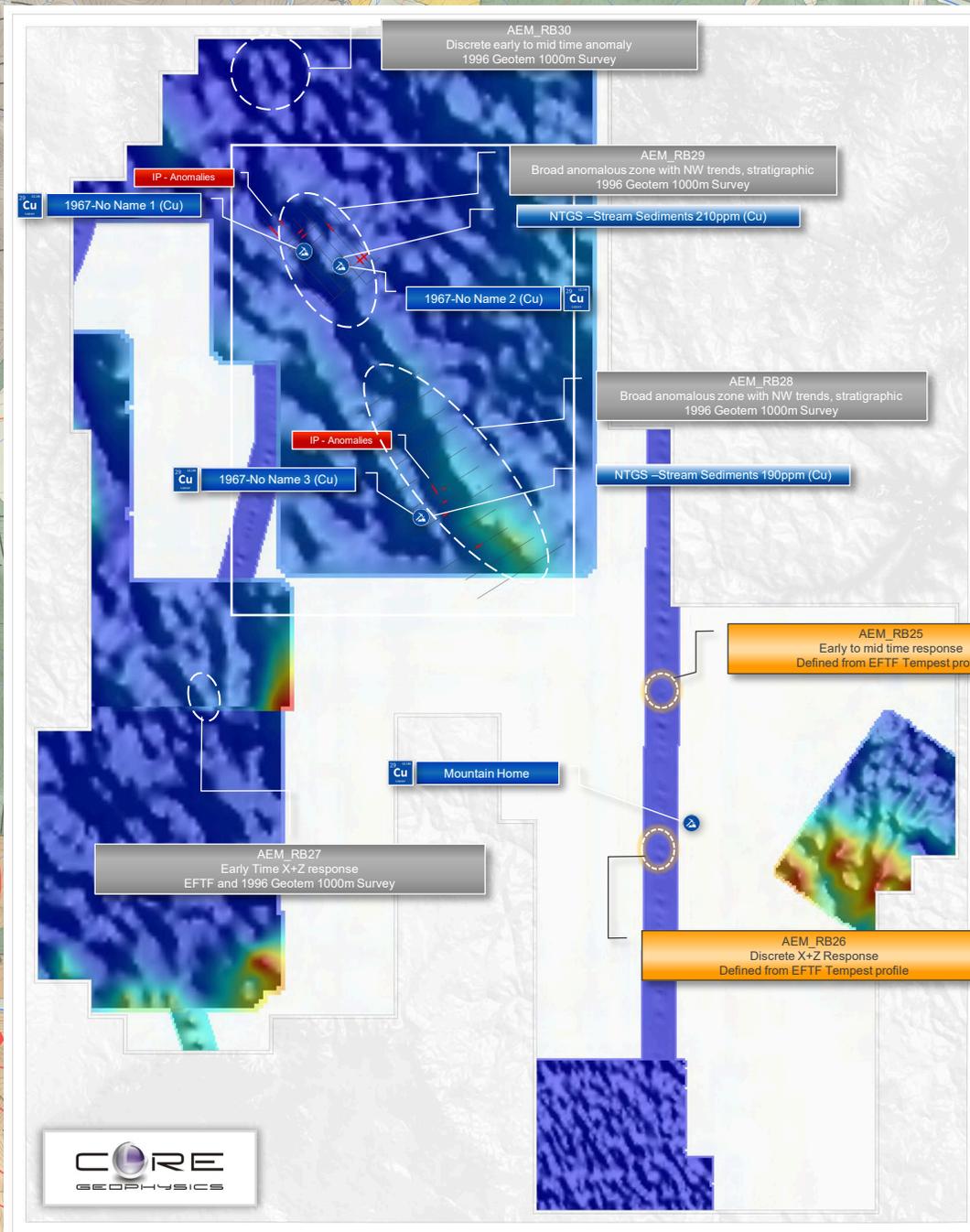
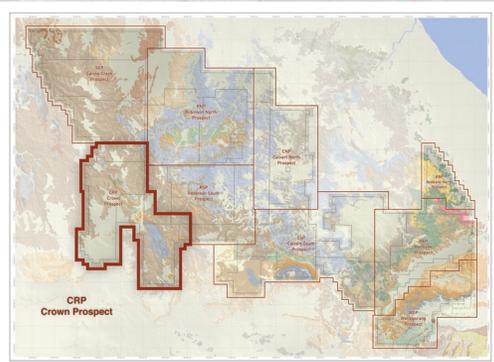
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Middle Time Channel AEM Composite (MT)
Time Domain Surveys Only



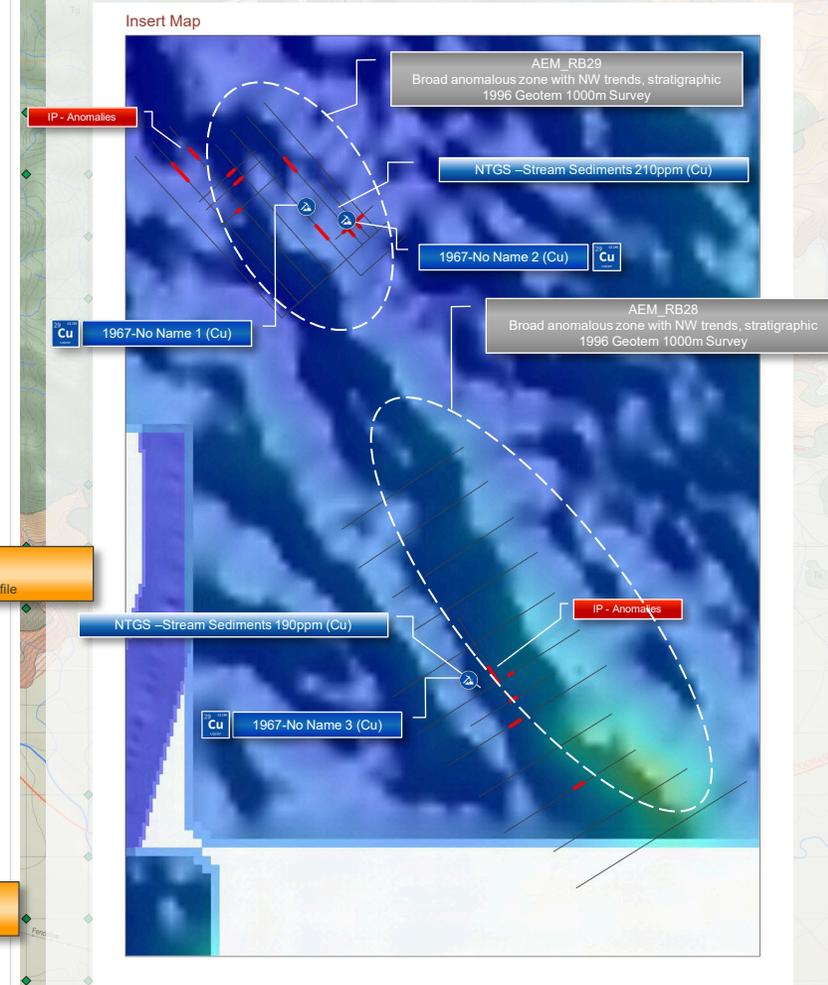
25k-Geological Map Series
Middle Time Channel AEM (MT)



Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Areas of Interest (AOI)
Regional Government and Historical Open
File Airborne Electromagnetic (AEM)
Late Time Channel AEM Composite (LT)
Time Domain Surveys Only

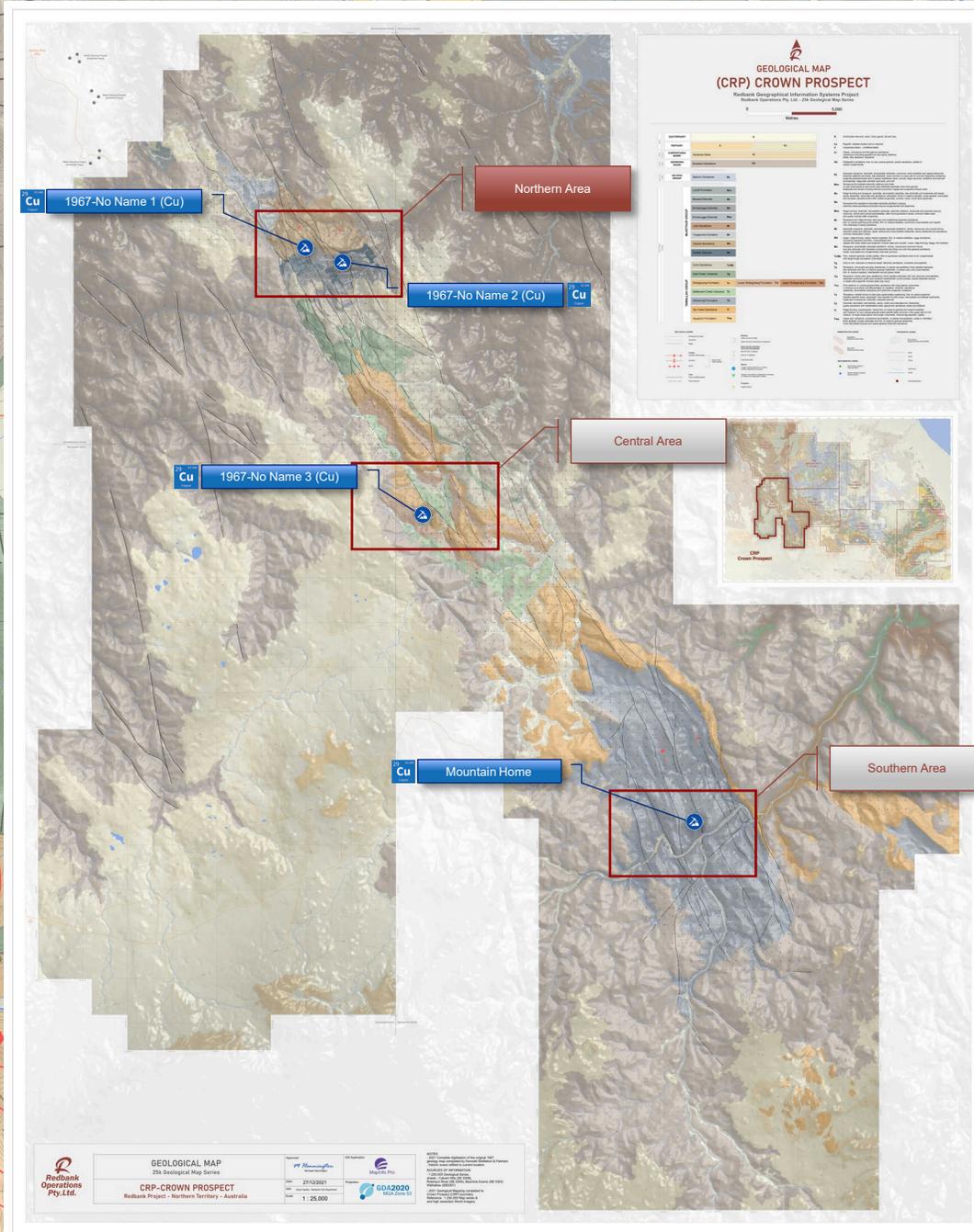
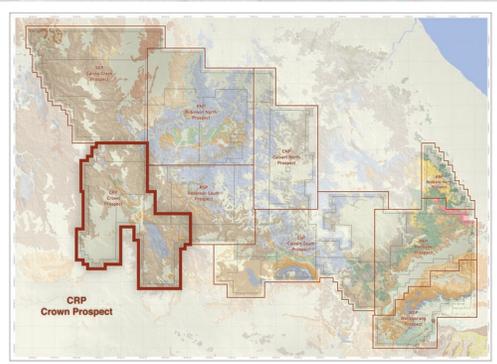


25k-Geological Map Series
Late Time Channel AEM (LT)

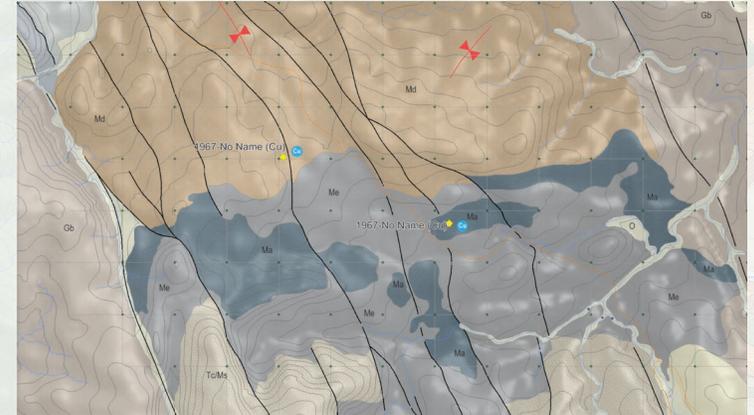


Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Cu Contacts 1967 (Northern Area)

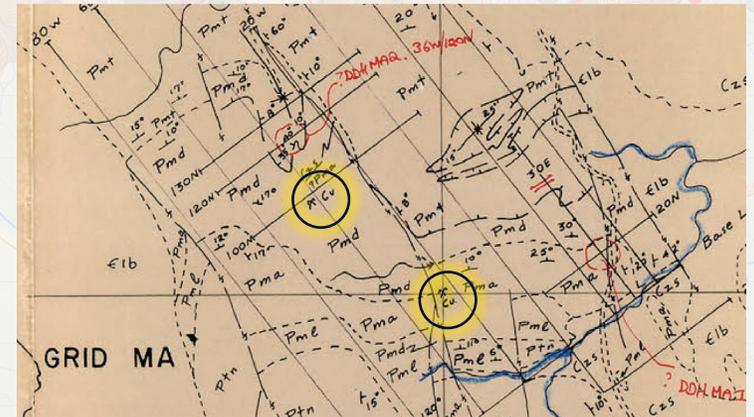
The 1967 Mapping has uncovered Cu Contacts, these contacts had been hard to get a precise location due to the map sheets geo-referencing, the contacts are approximate (within 50m) and would need locating in the field to confirm location.



25k-Geological Map Series
Crown-Northern Area

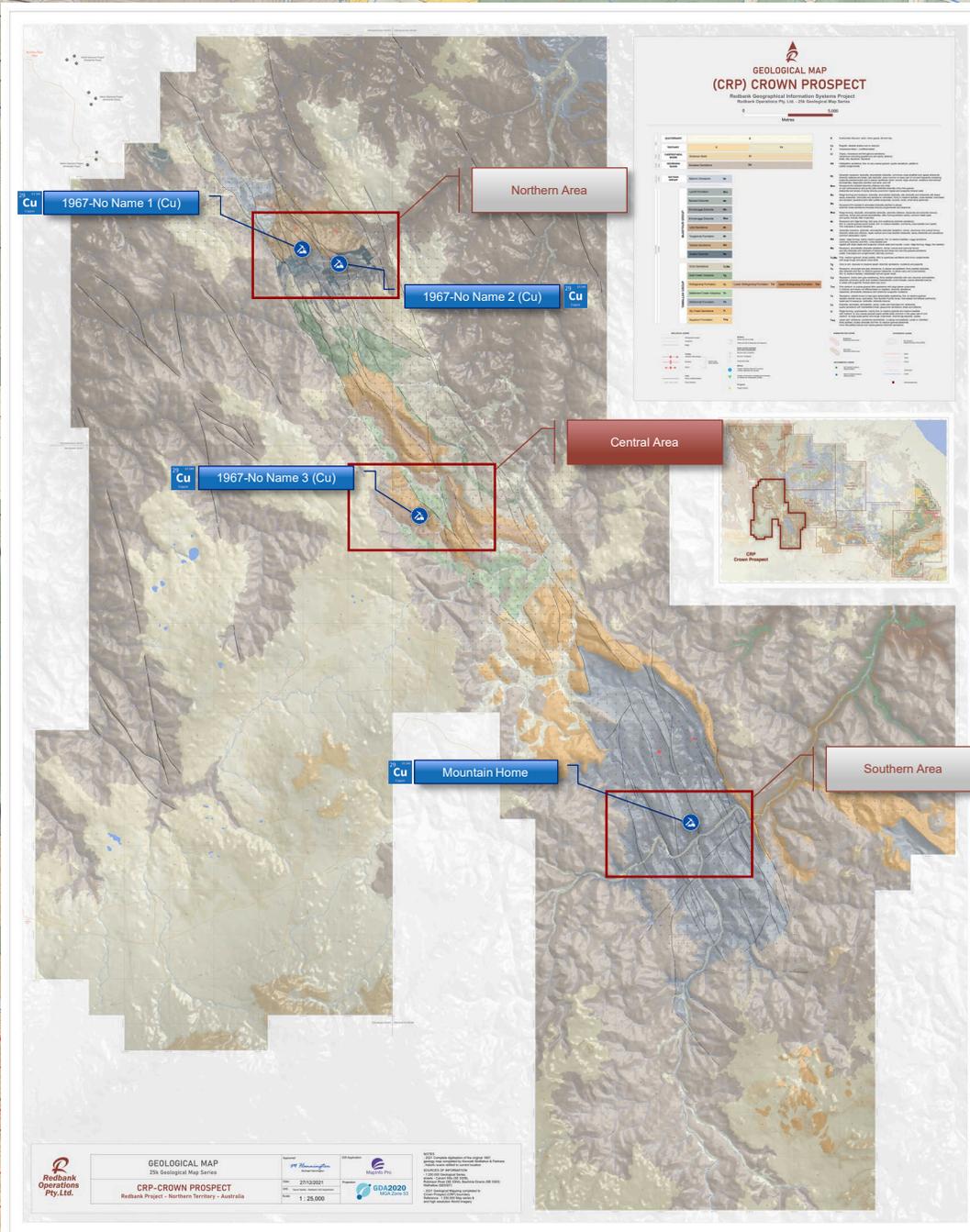
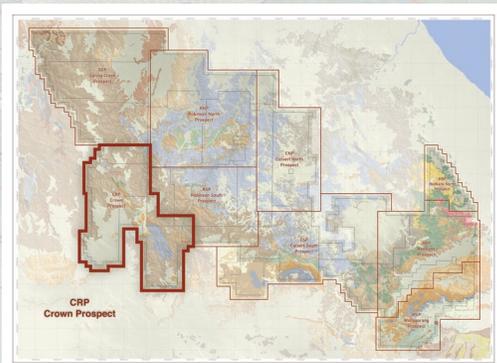


The 1967 Cu Contacts have been incorporated in our database, locations are approximate, currently attributed as "No Name" Please advise on preferred Redbank names.



Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
Cu Contacts 1967 (Central Area)

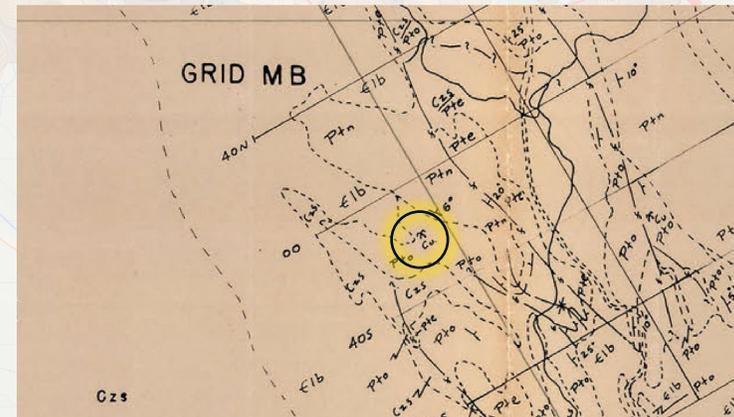
The 1967 Mapping has uncovered Cu Contacts, these contacts had been hard to get a precise location due to the map sheets geo-referencing, the contacts are approximate (within 50m) and would need locating in the field to confirm location.



25k-Geological Map Series
Crown-Central Area



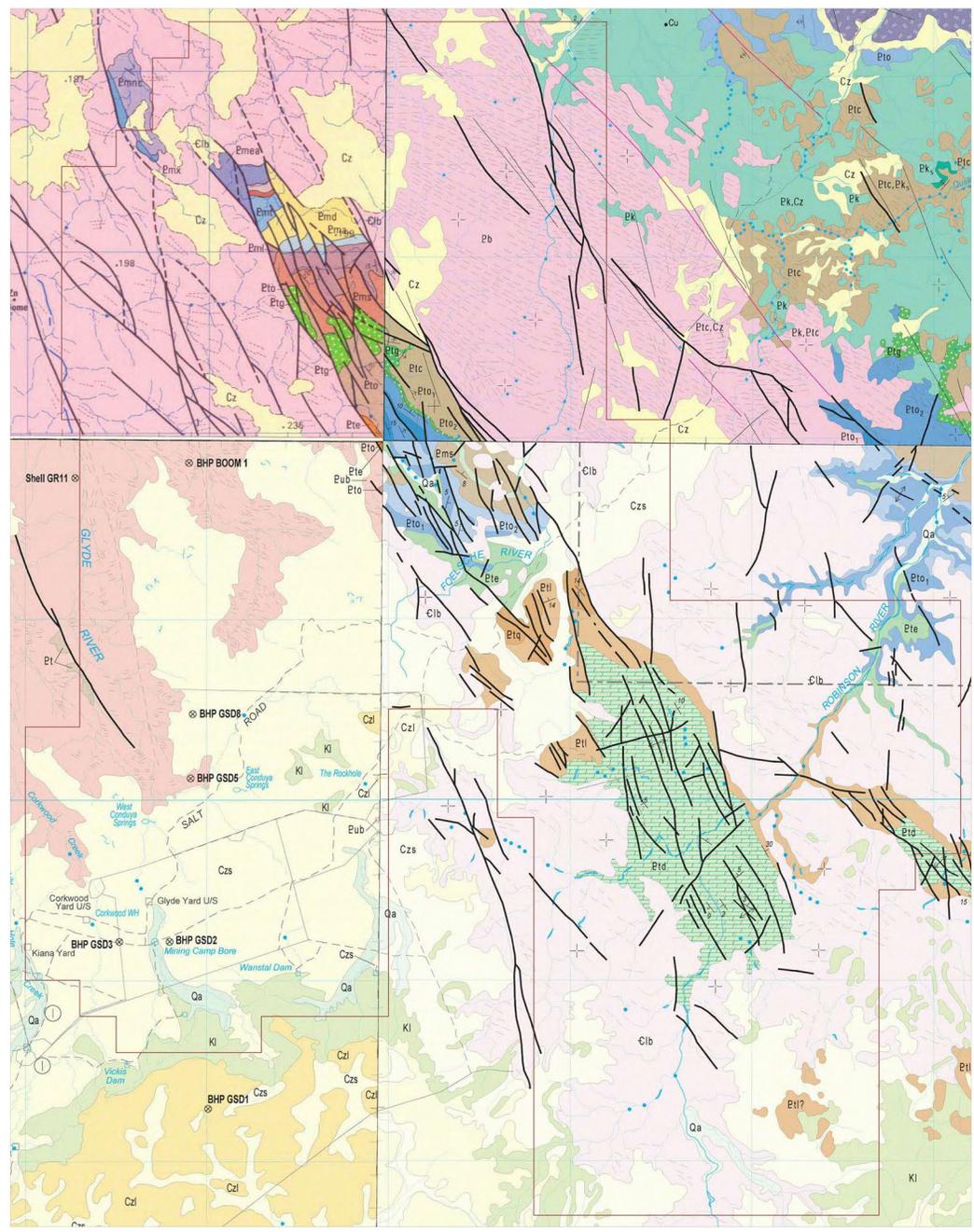
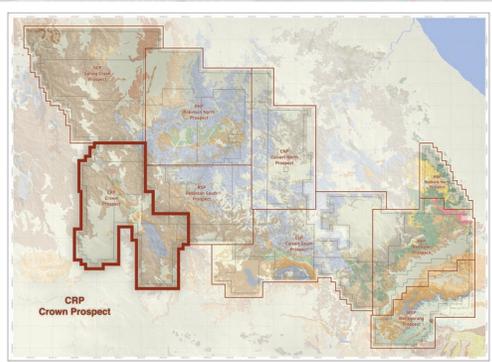
The 1967 Cu Contacts have been incorporated in our database, locations are approximate, currently attributed as "No Name" Please advise on preferred Redbank names.



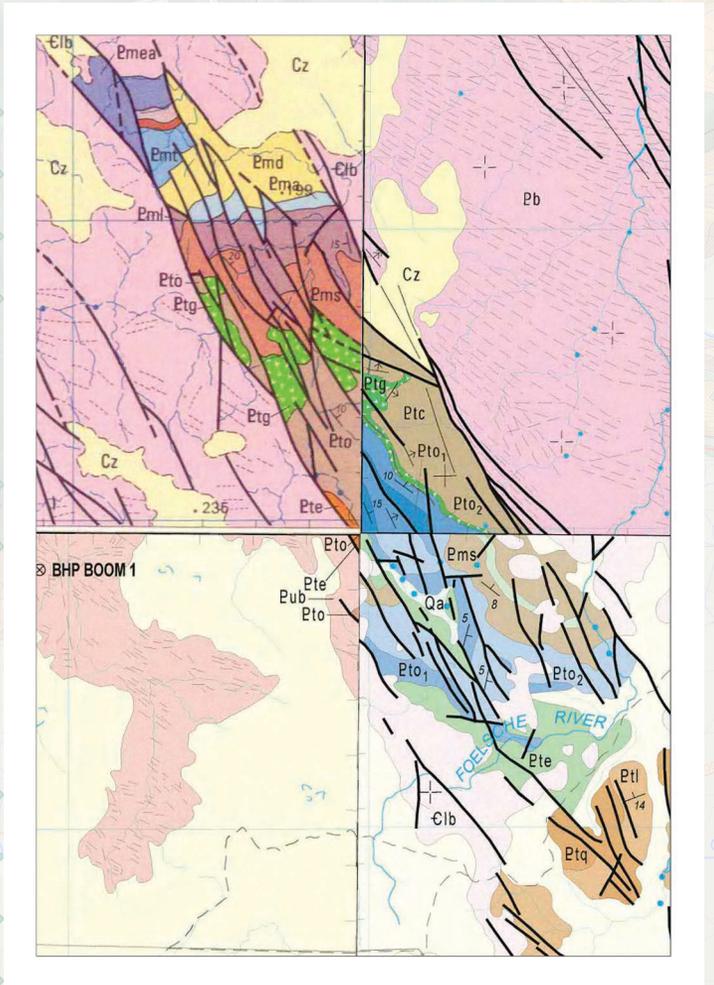
1967 mapped Cu Contacts, not in NTGS data

Redbank Exploration Project NT
25k Geological Map Series
CRP-Crown Prospect
250k Map Sheets

As you can see the focus area for the CRP is covered by the "4 Corners" of the 250k GA map sheets, this would need further investigations in the 2022 field season if we believe the area warrants it.



25k-Geological Map Series
"4 Corners"

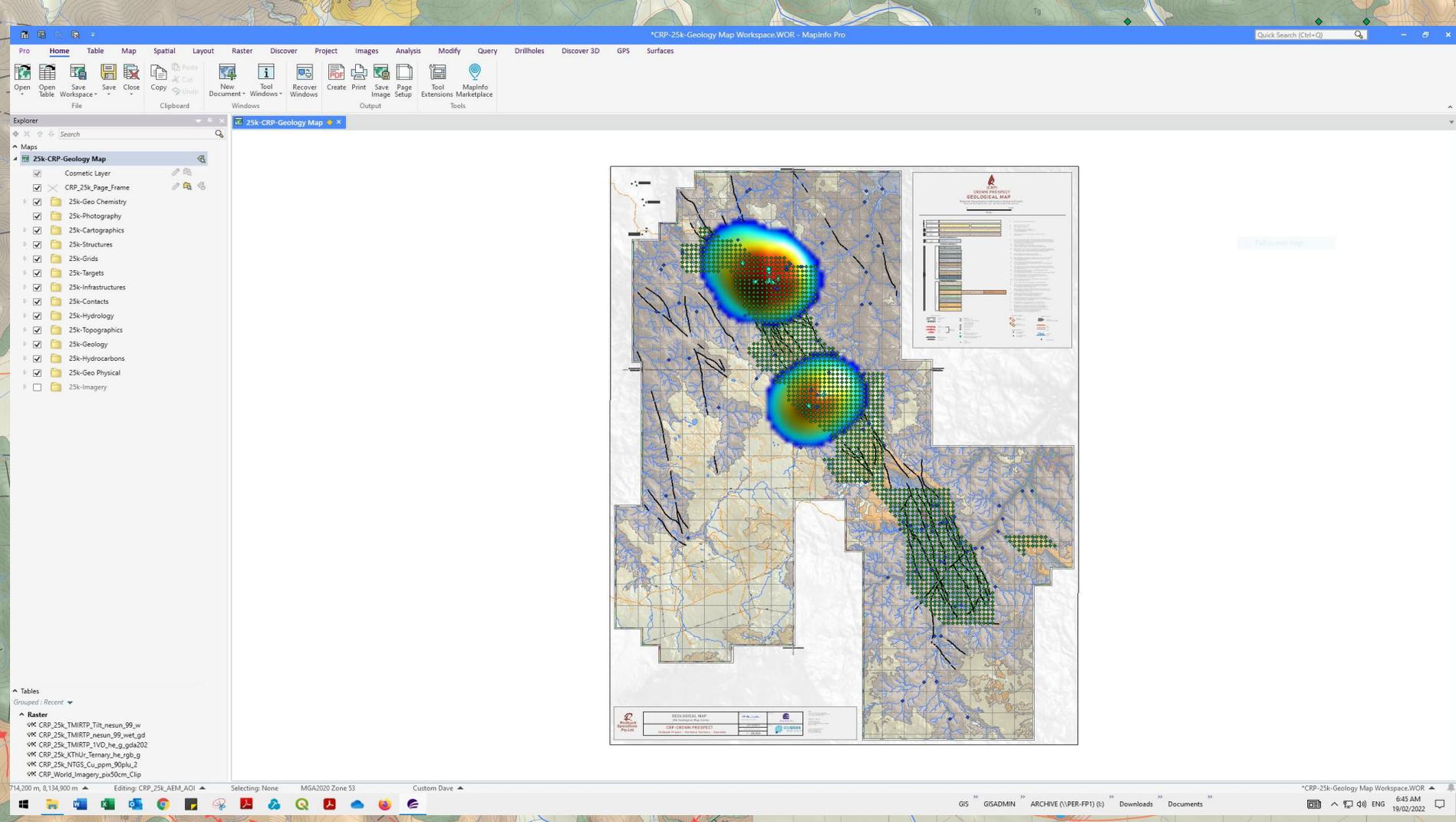
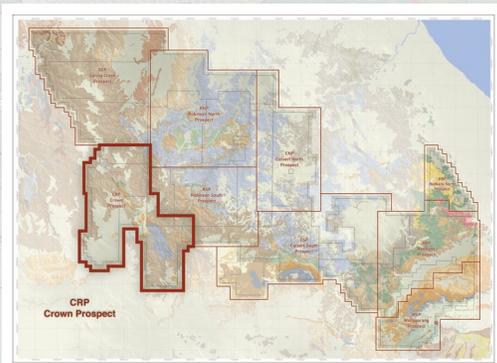


Above is a focus area where we see the 4 corners of the 250k map sheets, yes there are overlap areas that need attention. With my GIS hat on, the corners of maps tend to get less attention as the middle of a map gets the focus, I have adjusted the border strata in the Redbank main regional mapping with assistance from John Beeson, but again the strata would need confirmation from field work.



Redbank Exploration Project NT 25k Geological Map Series CRP-Crown Prospect MapInfo Workspace

The CRP MapInfo Workspace has been set-up and available in the RBK-Exploration Folder, this workspace is our base dataset for the CRP



25k-Geological Map Series MapInfo Workspace Location

File Explorer path: Network > per-fp1.rc.local > GROUPS > GIS > GIS-NT-Northern Territory > RBO-GIS-Redbank Operations > RBK-Redbank Project > RBK-Exploration > CRP-Crown Prospect > CRP-25k-WorkPro

Name	Date modified	Type	Size
CRP-25k-Geology Map Workspace.WOR	17/02/2022 9:25 AM	MapInfo Workspace	38 KB
CRP-25k-Geology Map Workspace.wox	17/02/2022 9:25 AM	MapInfo Workspa...	4 KB

