



中国地质调查局

CHINA GEOLOGICAL SURVEY

The Progress of Cooperation in Geological Survey between China and Zambia

Wang Jie

Tianjin Center, China Geological Survey



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Progress

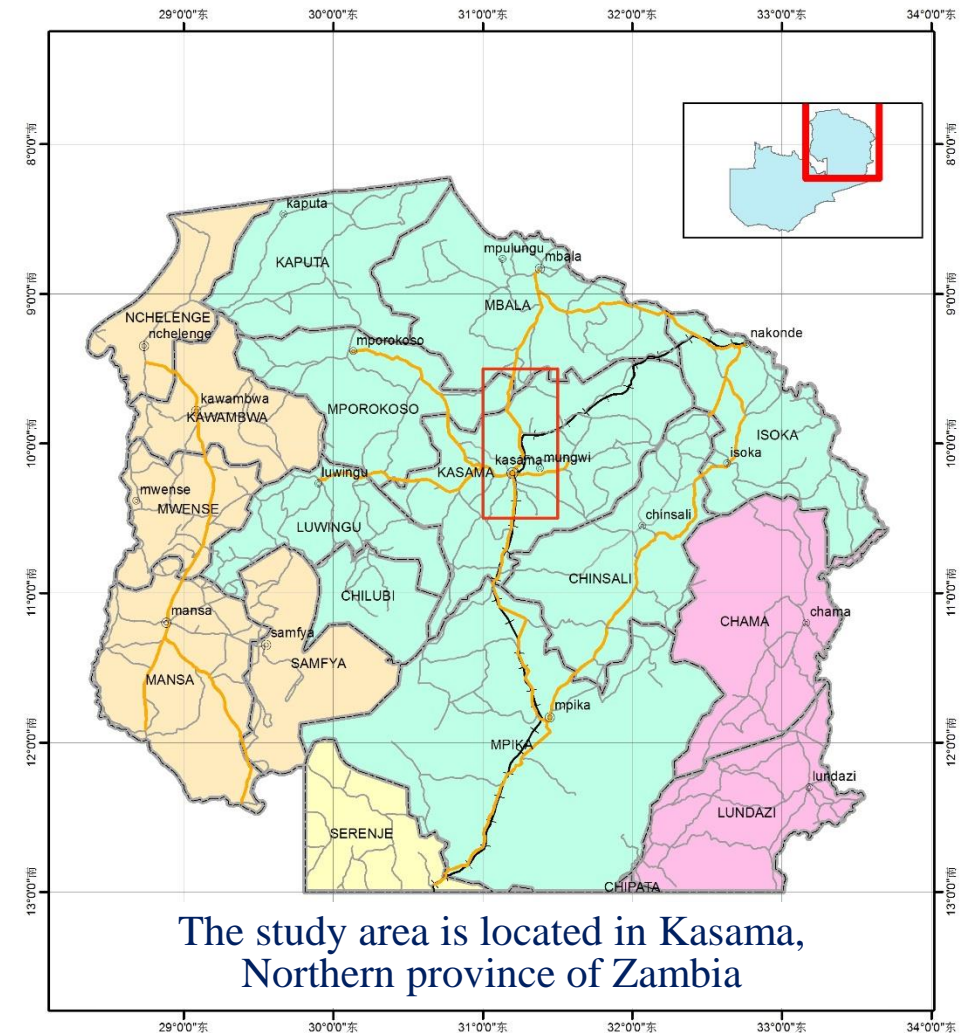


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The cooperation between China Geological Survey and Zambia Geological Survey began in 2012. In July 2012, P.R. China and the Republic of Zambia signed an agreement in respect of the project "CHINA-AIDED REGIONAL GEOLOGICAL AND GEOCHEMICAL MAPPING IN KASAMA, NORTHERN PROVINCE, ZAMBIA".

The project was put into practice in 2013, the main field work was done in 2014, and the laboratory work for the samples was finished by May 2016.

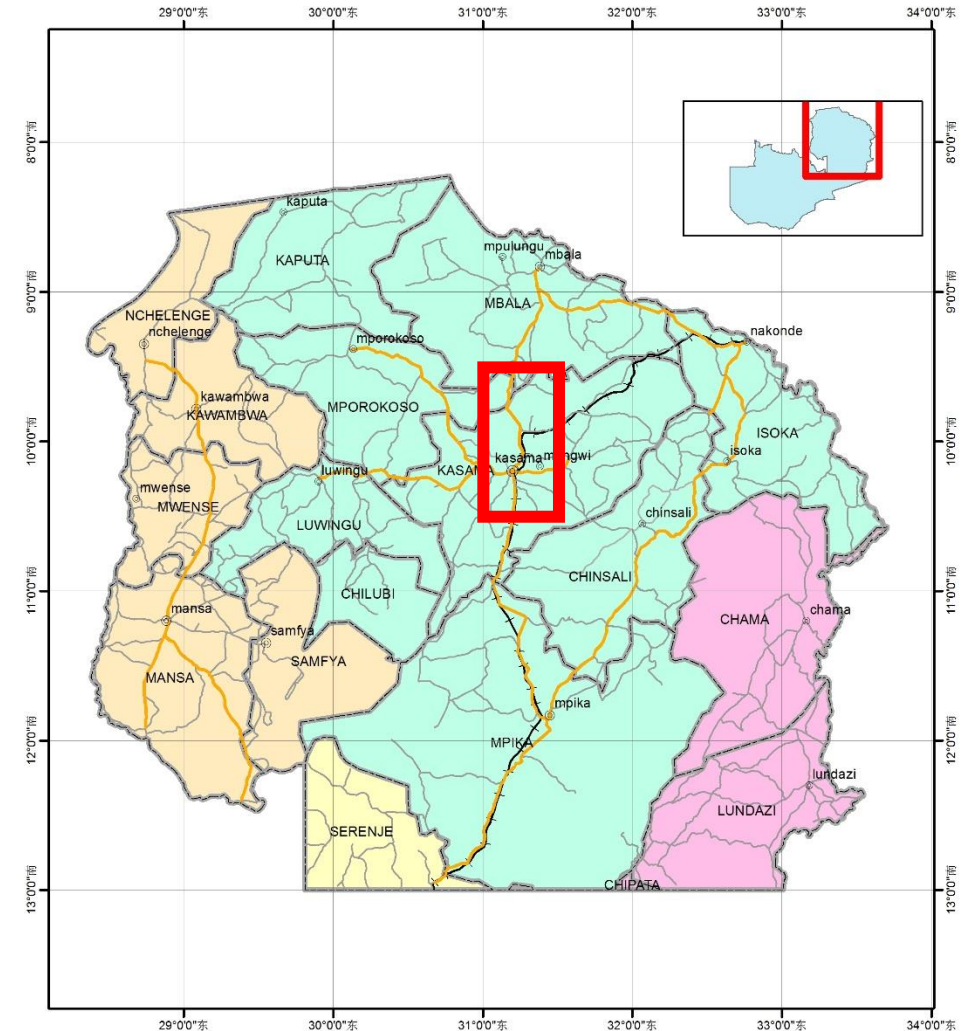




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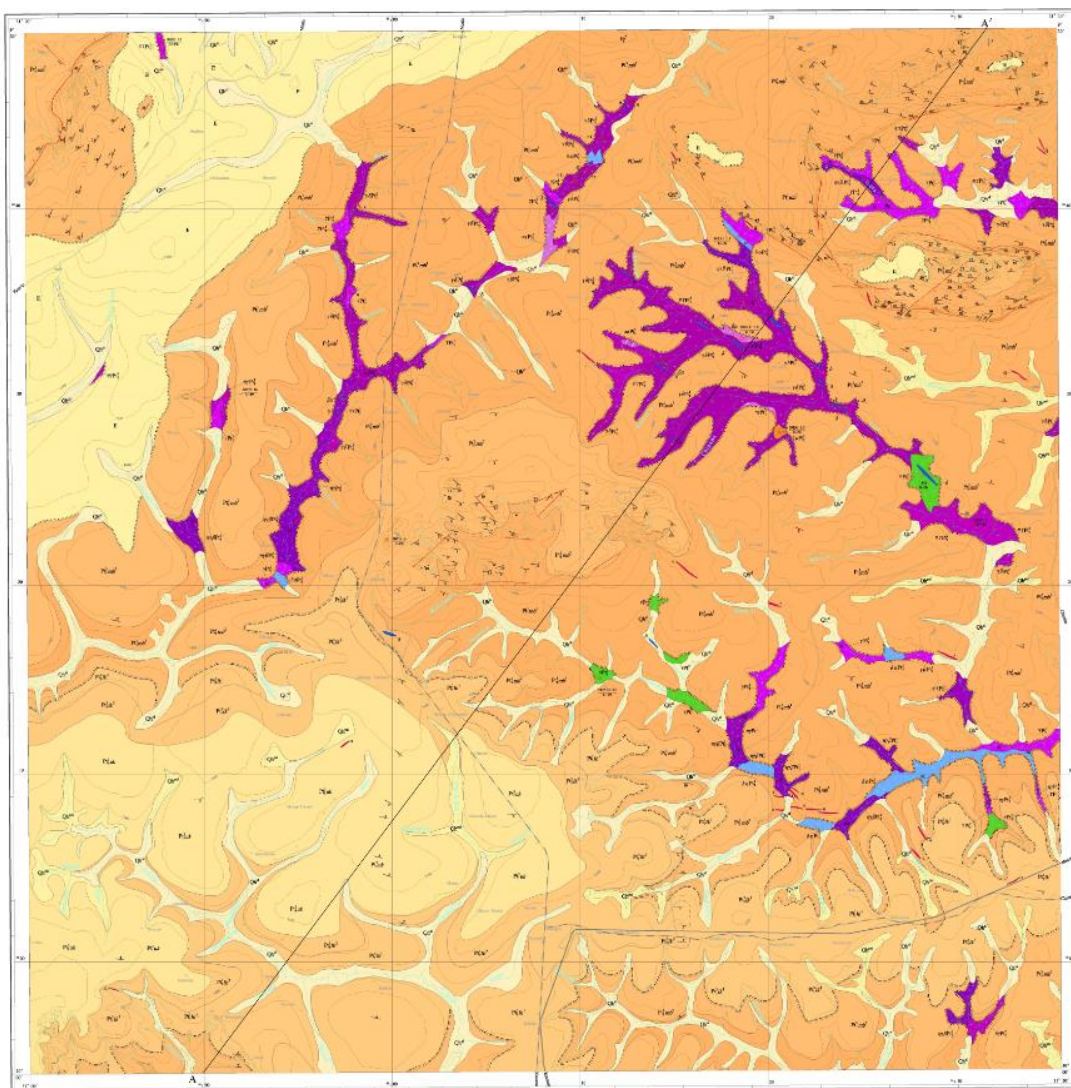
The coverage of regional geochemical survey on 1:100 000 is around 6064 square kilometers;
The coverage of regional geological survey on 1:100 000 is around 6064 square kilometers;
39 elements were determined by the various methods;
More than 180 geochemical maps are compiled.





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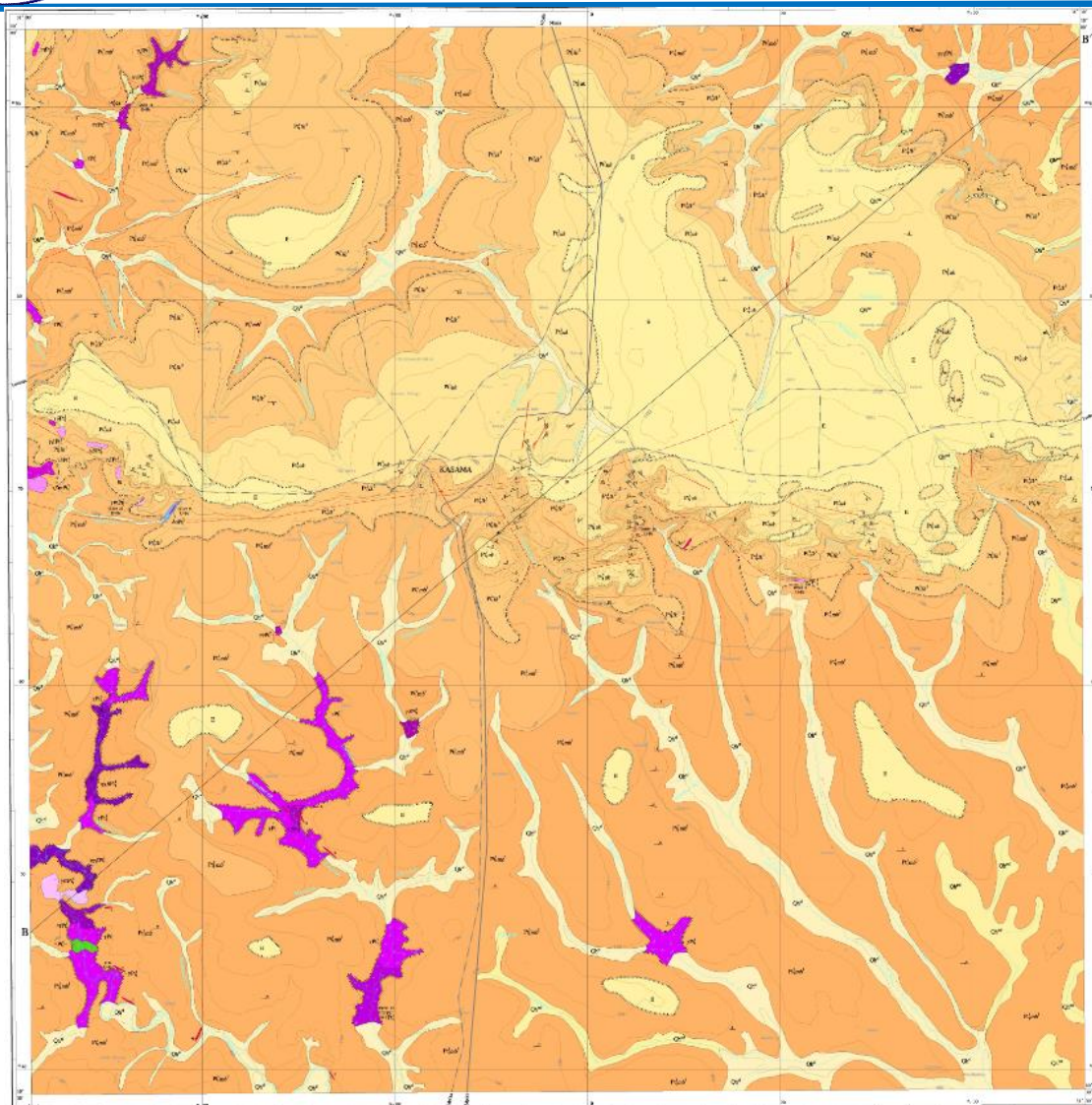
Geological Map of
Mapsheet 0931 SW

年代地层 界	岩石地层			综合岩性柱	
	系	群	组		
新生界	第四系			Qh ^{nl}	冲积物、冲洪积物
	古近系			E	风化淋滤红土，已固结成岩，岩性主要为赤铁矿化角砾岩
下元古界	卡萨马群	上卡萨马组		Pt ₁ ³ uk	灰白、肉红色石英砂岩。>123m
		下卡萨马组	二段	Pt ₁ ³ lk ²	紫红、青灰色粉砂岩与紫红色石英细砂岩互层，粉砂、砂岩之比 3: 1。厚 177.77-255.17m
		一段	Pt ₁ ³ lk ¹	紫红色页岩。厚 178-255m	
	姆波罗科索群	姆巴拉组	二段	Pt ₁ ³ mb ²	肉红色、灰白色砂岩、含砾砂岩及细砾岩，砂、砾岩之比 2: 1-3: 1。>693.61m
			一段	Pt ₁ ³ mb ¹	紫红-紫灰色含砾砂岩、砾岩及杂砾岩，砂、砾岩之比 1: 1。厚 731.4-1803.8m
	基底			斜长变粒岩、黑云二长变粒岩、黑云石英片岩、二云斜长片岩、花岗片麻岩、斜长片麻岩、钾长片麻岩	



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CHINA GEOLOGICAL SURVEY

Progress



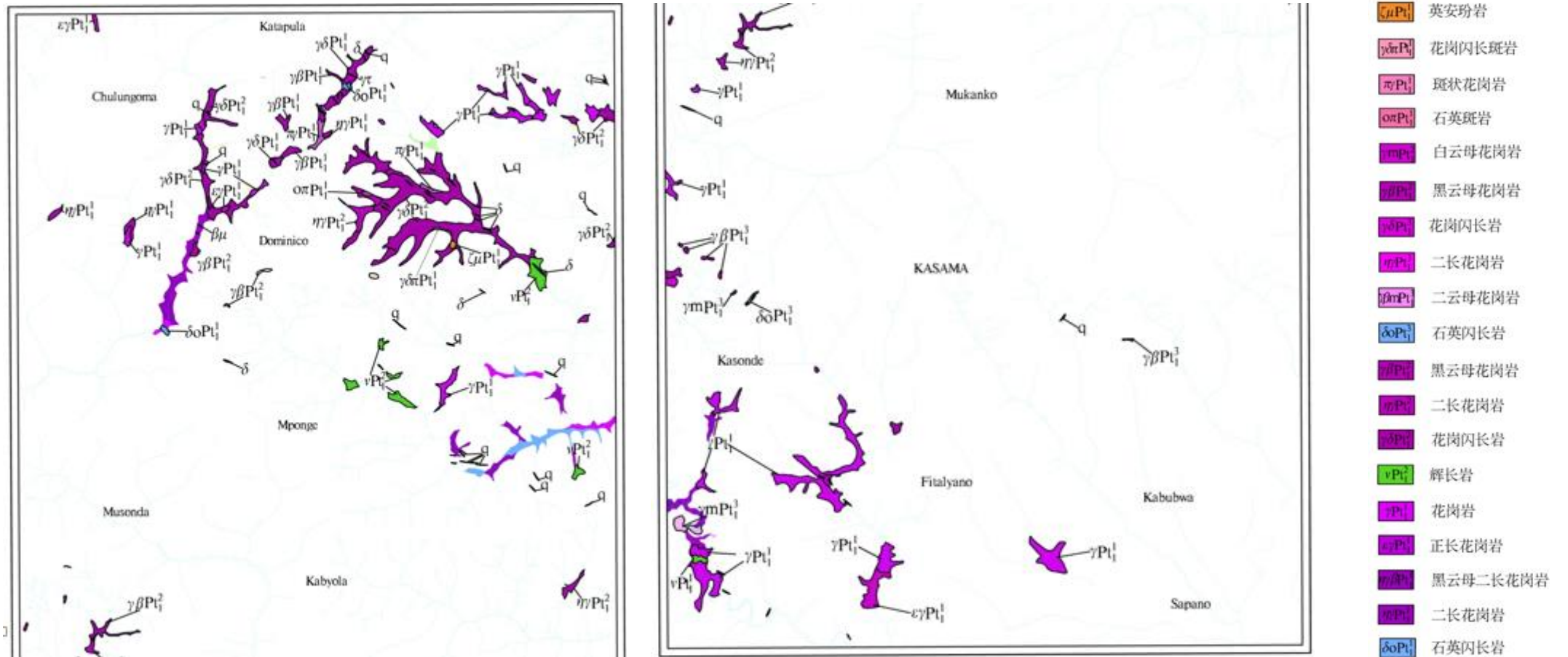
Geological Map of
Mapsheet 1031NW

年代地层		岩石地层		综合岩性柱	
界	系 群 组	段	代号		
新生界	第四系		Qh ^{nl}	冲积物、冲洪积物	
	古近系		E	风化淋滤红土，已固结成岩，岩性主要为赤铁矿化角砾岩	
下元古界	卡哇马组	上卡哇马组	Pt ₁ ³ uk	灰白、肉红色石英砂岩，>123m	
		下卡哇马组	Pt ₁ ³ jk ²	紫红、青灰色粉砂岩与紫红色石英细砂岩互层，粉砂、砂岩之比 3: 1。厚 177.77-255.17m	
		一段	Pt ₁ ³ jk ¹	紫红色页岩，厚 178-255m	
	嘉美图组		二段	Pt ₁ ³ mb ²	肉红色、灰白色砂岩、含砾砂岩及细砾岩，砂、砾岩之比 2: 1-3: 1。>693.61m
		嘉巴拉组	一段	Pt ₁ ³ mb ¹	紫红-紫灰色含砾砂岩、砾岩及杂砾岩，砂、砾岩之比 1: 1。厚 731.4-1803.8m
	麻				斜长变粒岩、黑云二长变粒岩、黑云石英片岩、二云斜长片岩、花岗片麻岩、斜长片麻岩、钾长片麻岩



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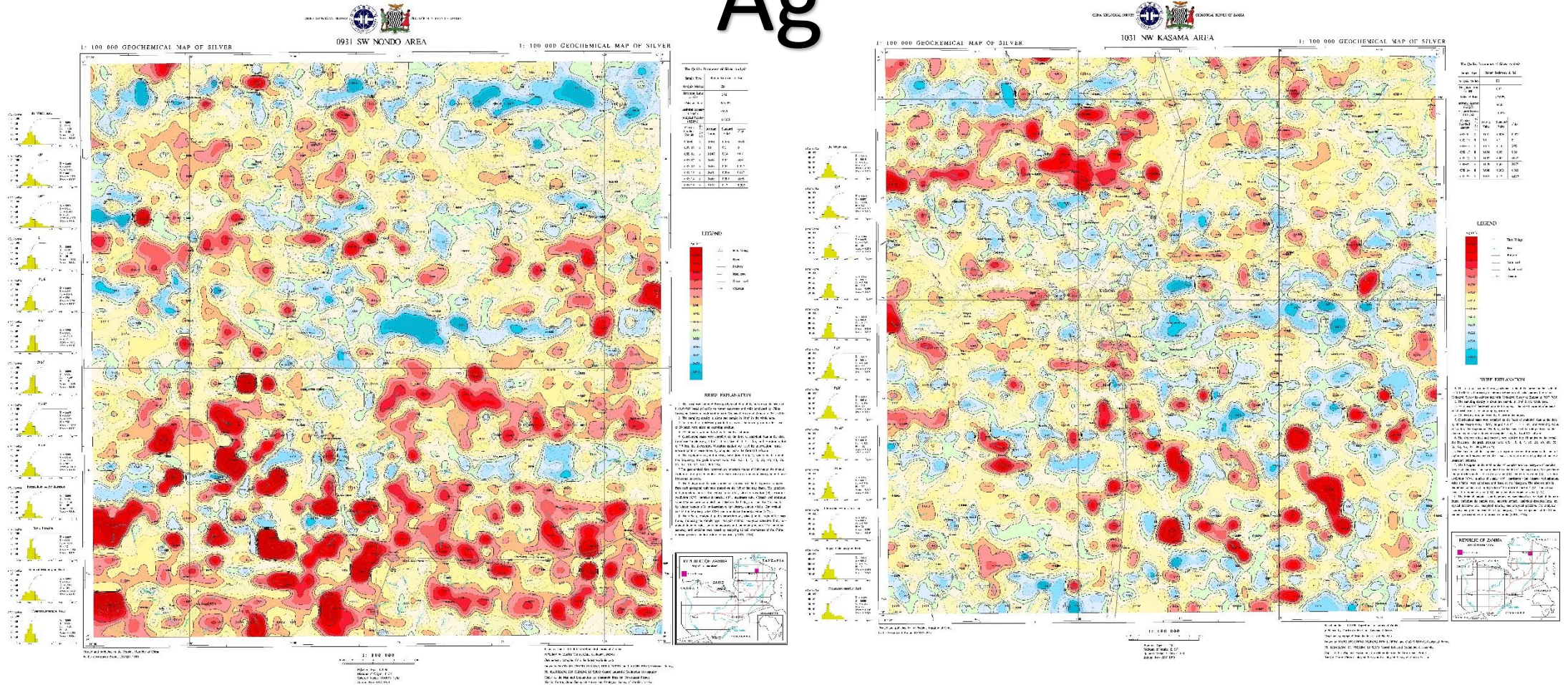
Progress



Intrusive Rocks Distribution



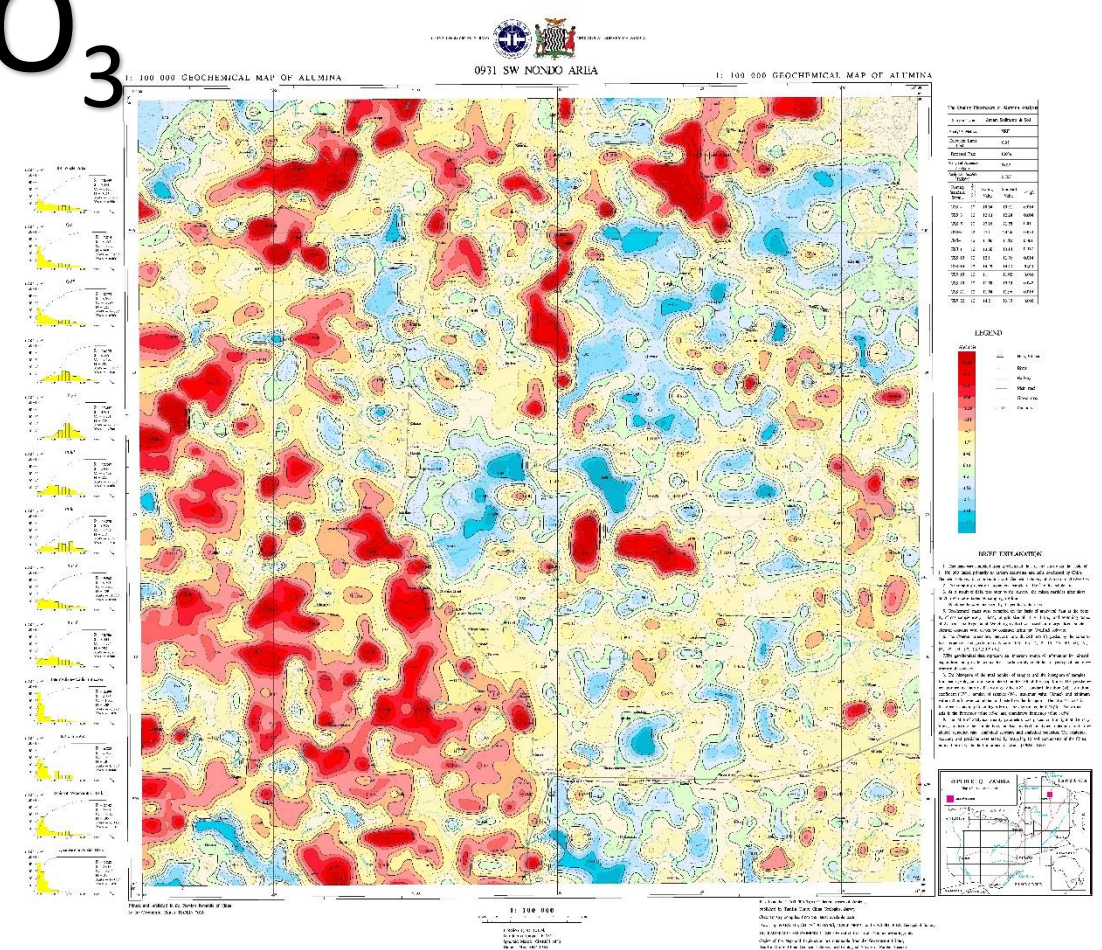
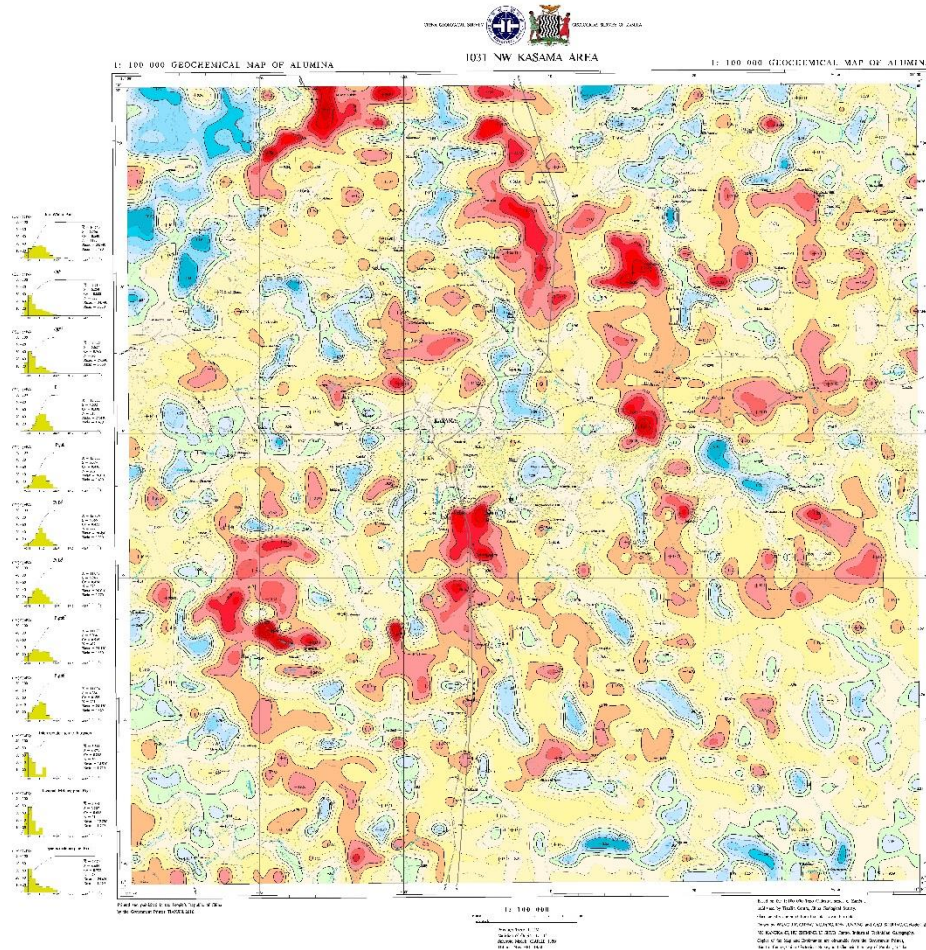
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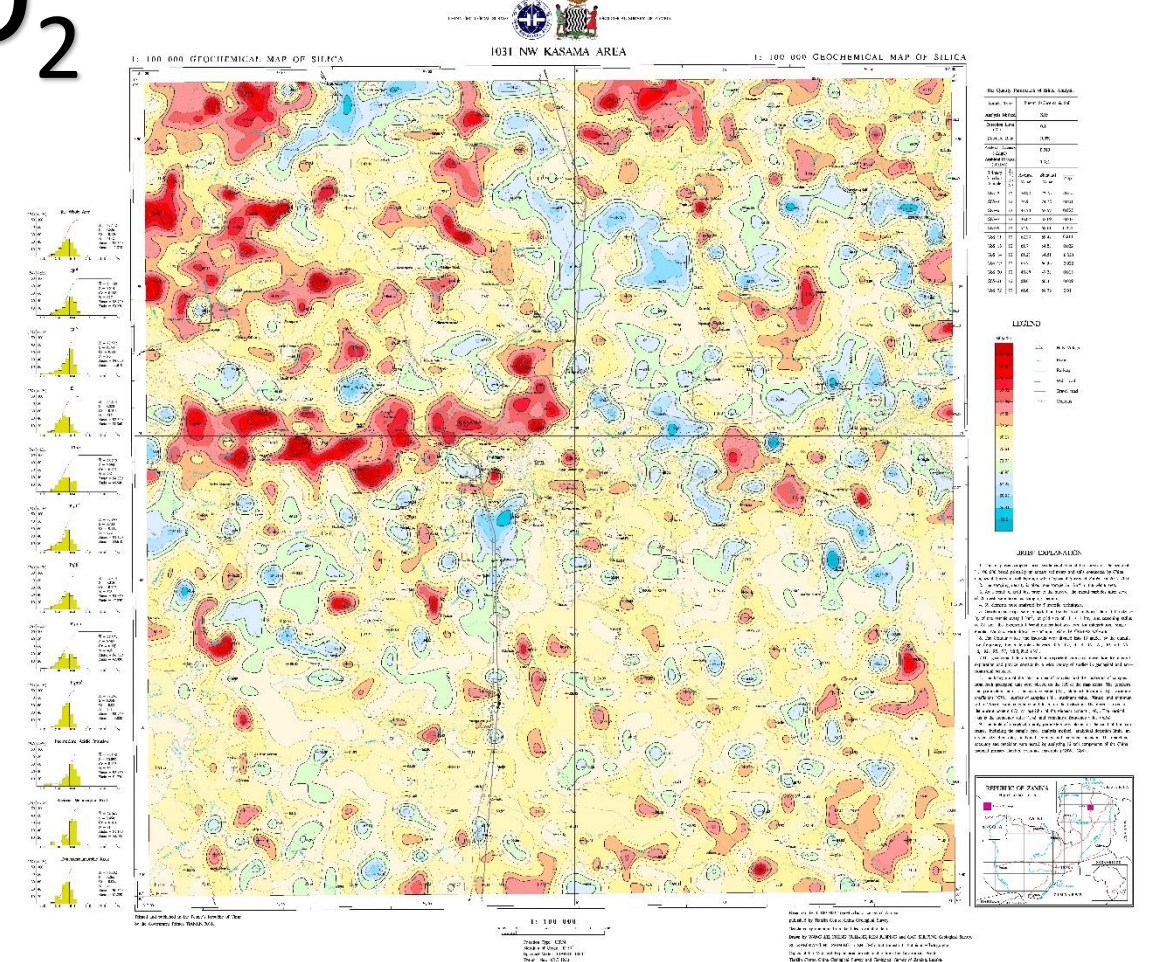
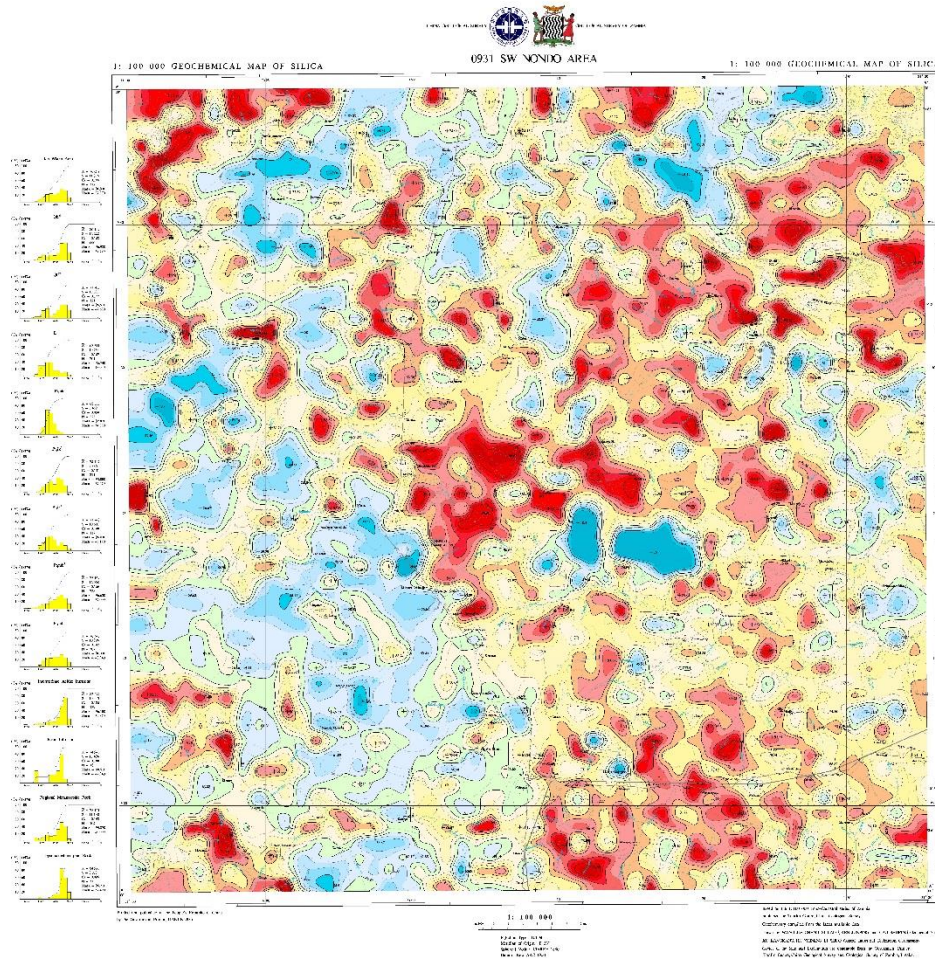




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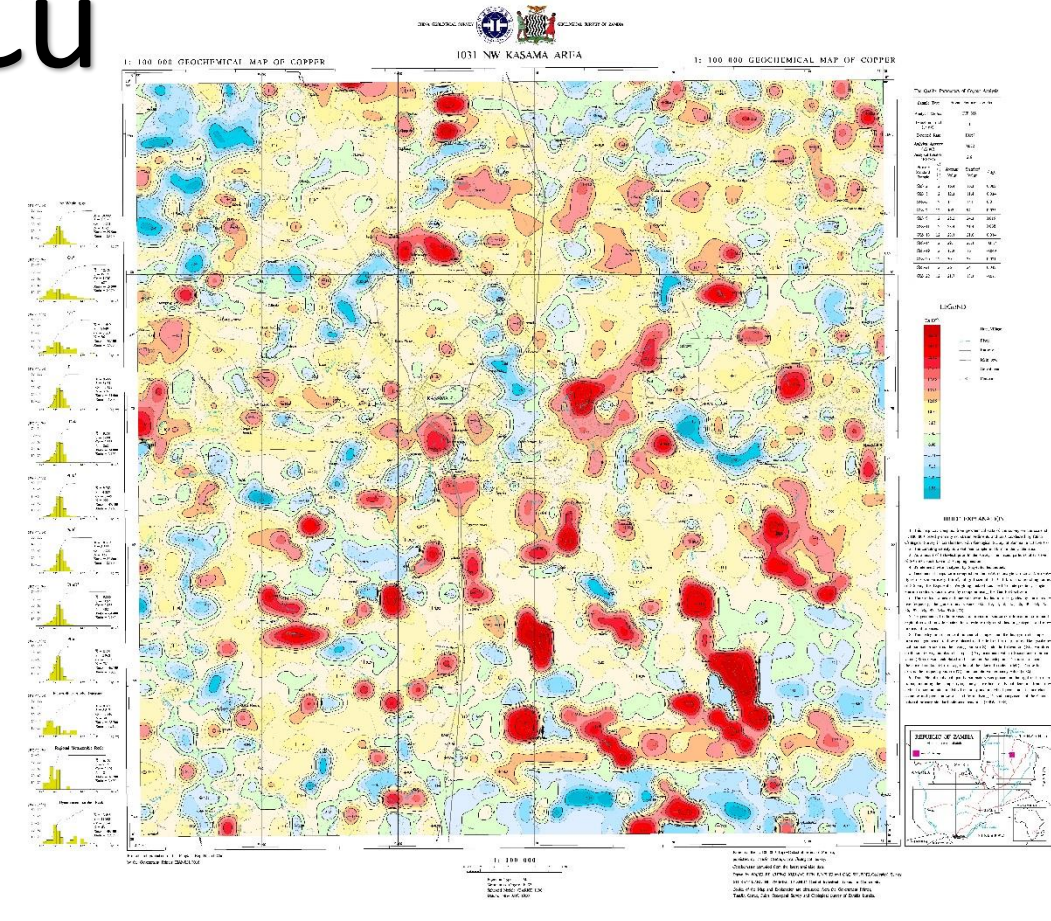
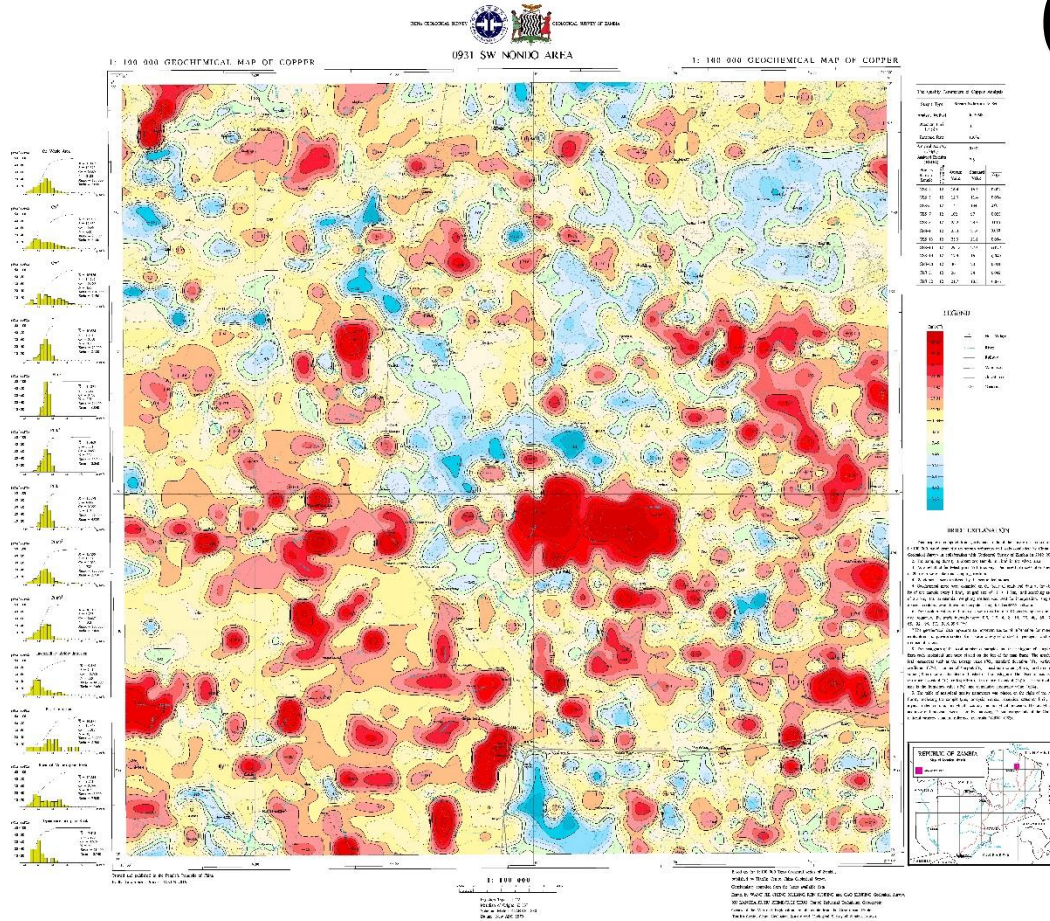




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Progress

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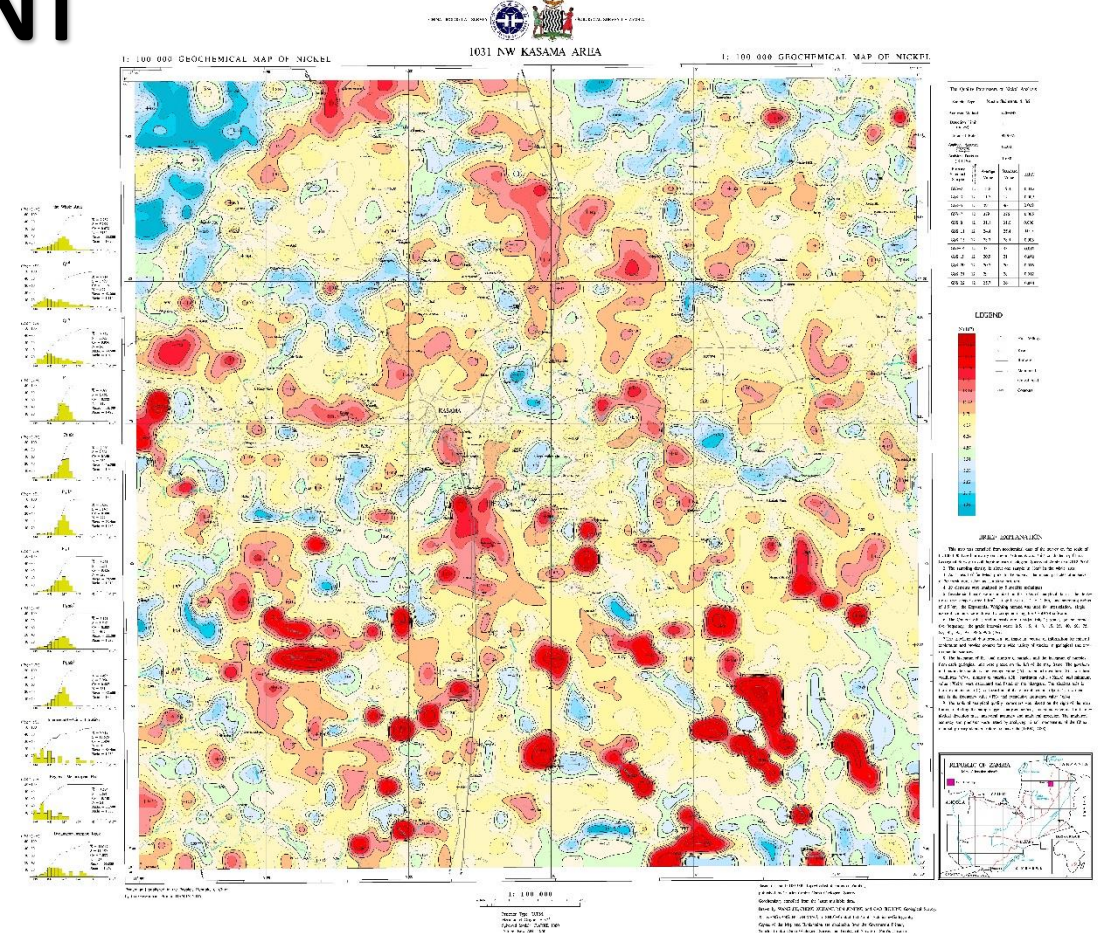
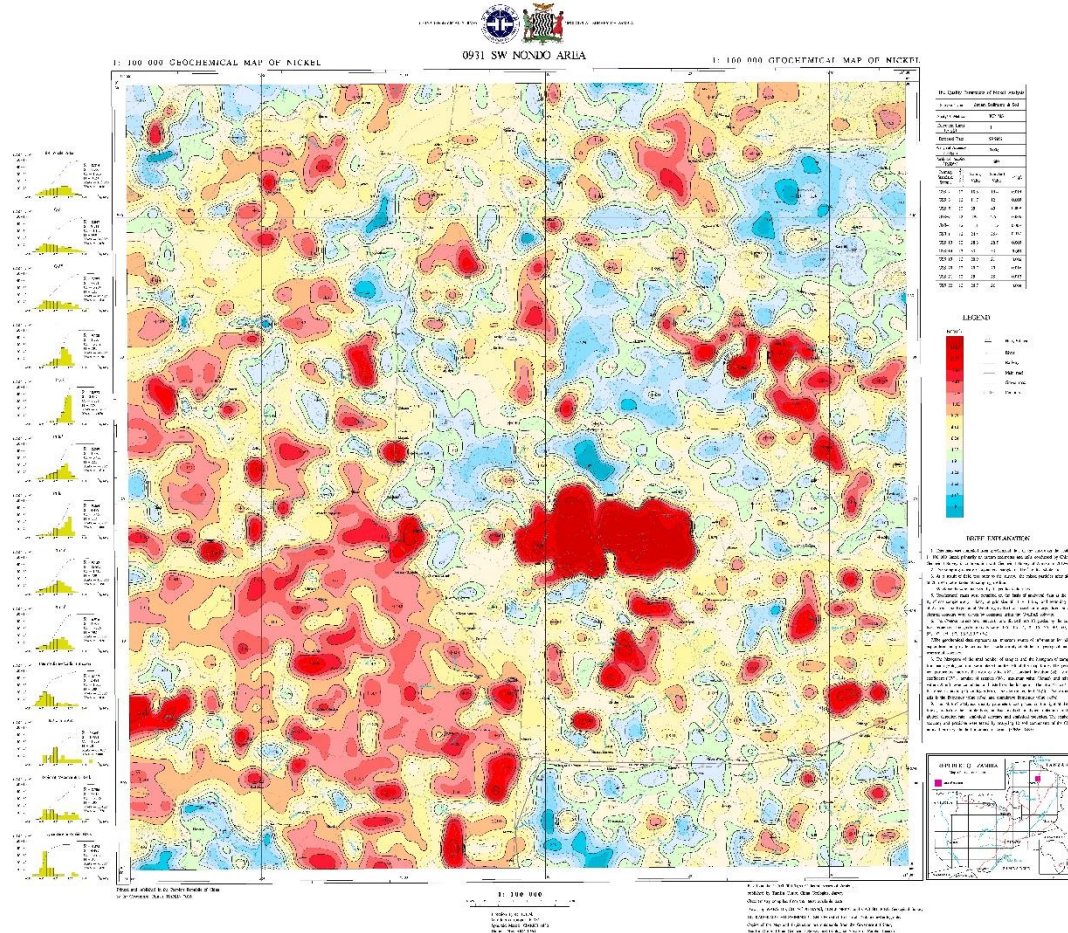




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Progress

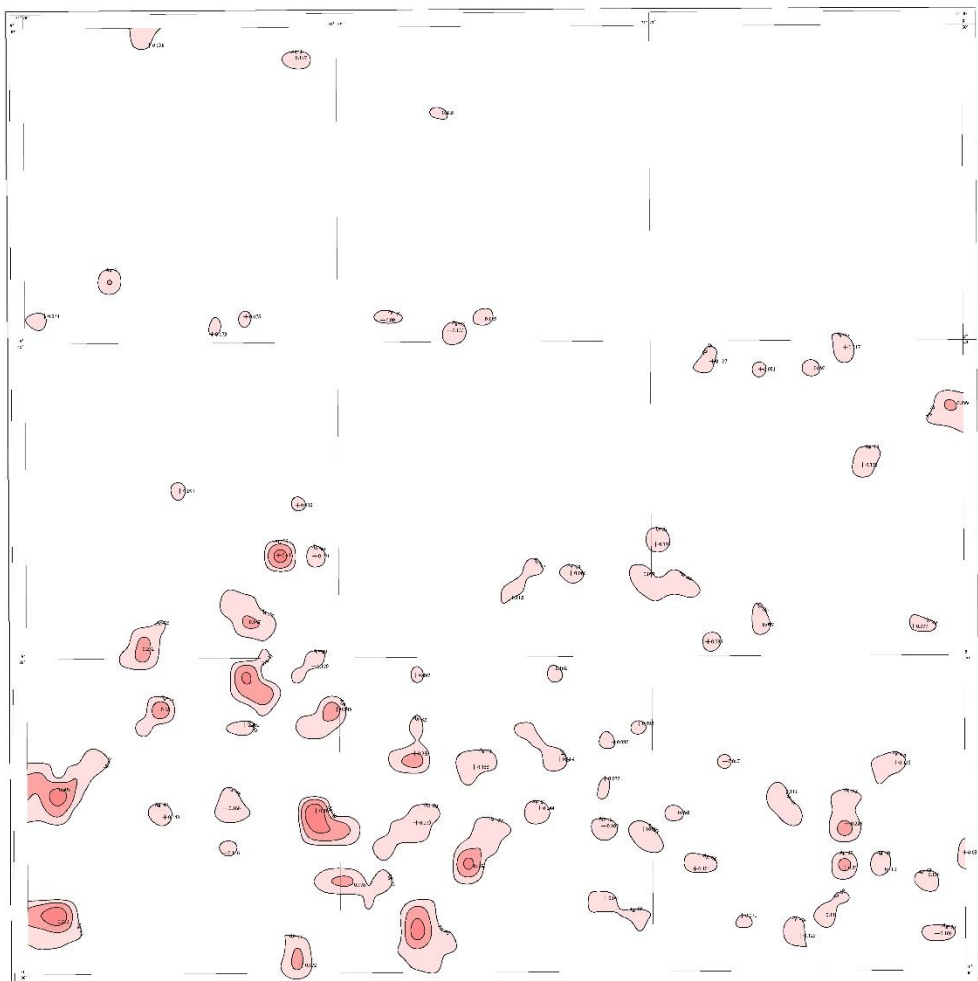
Ni



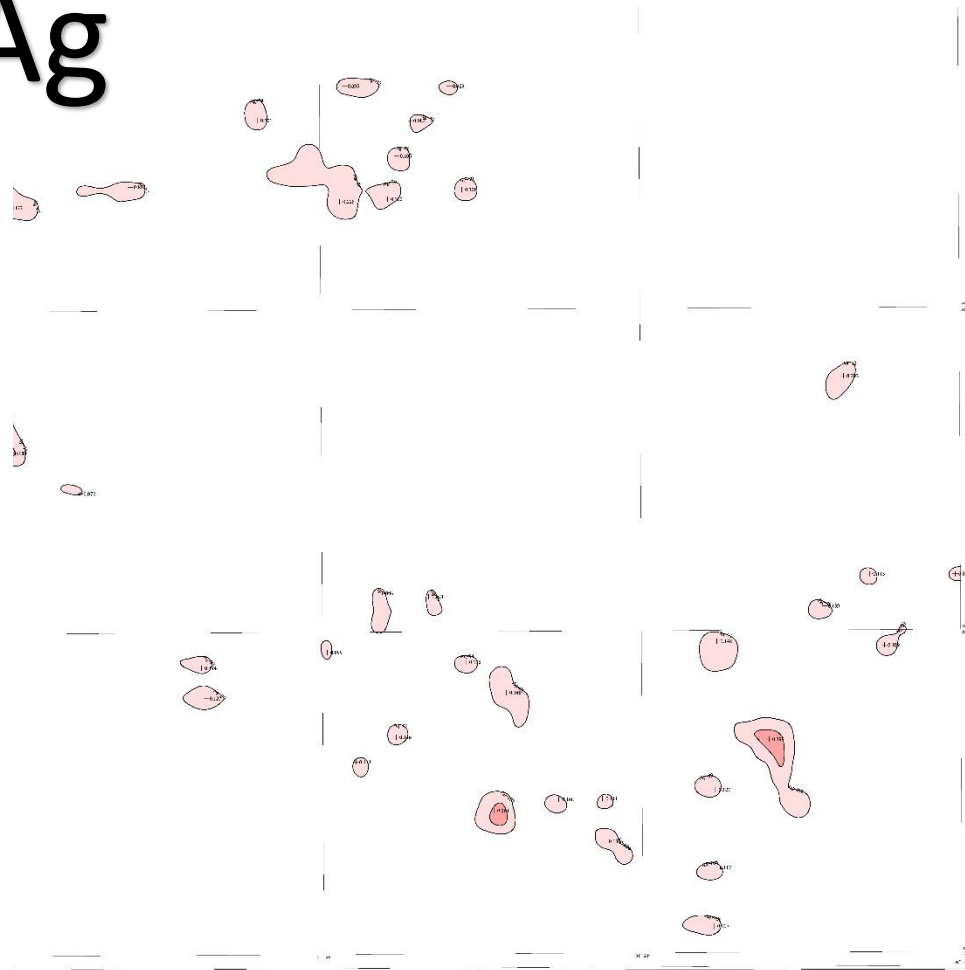


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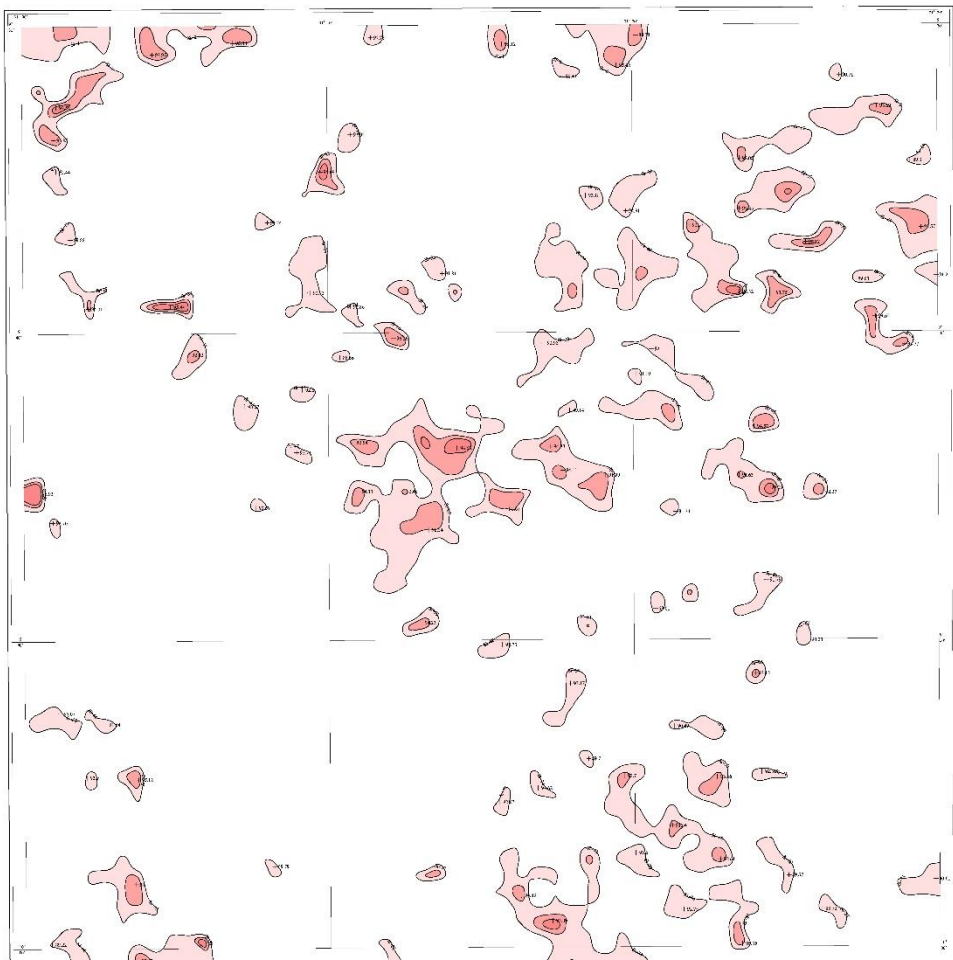
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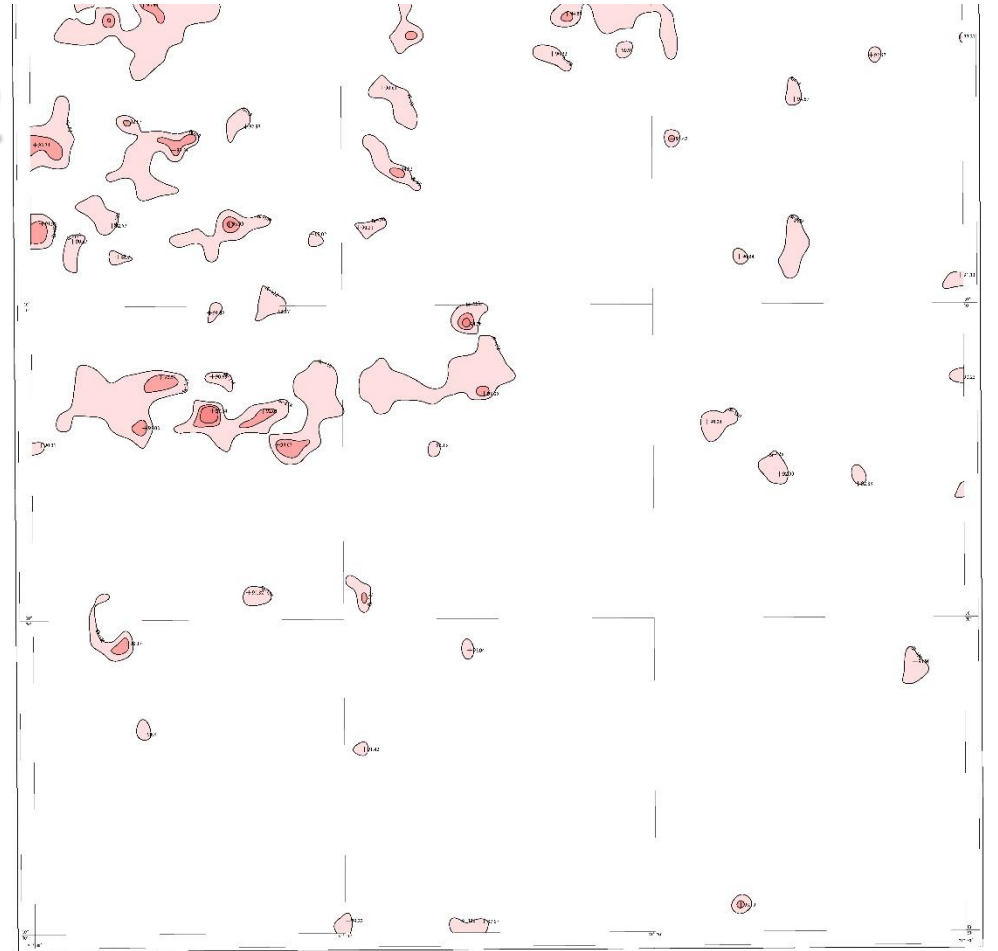


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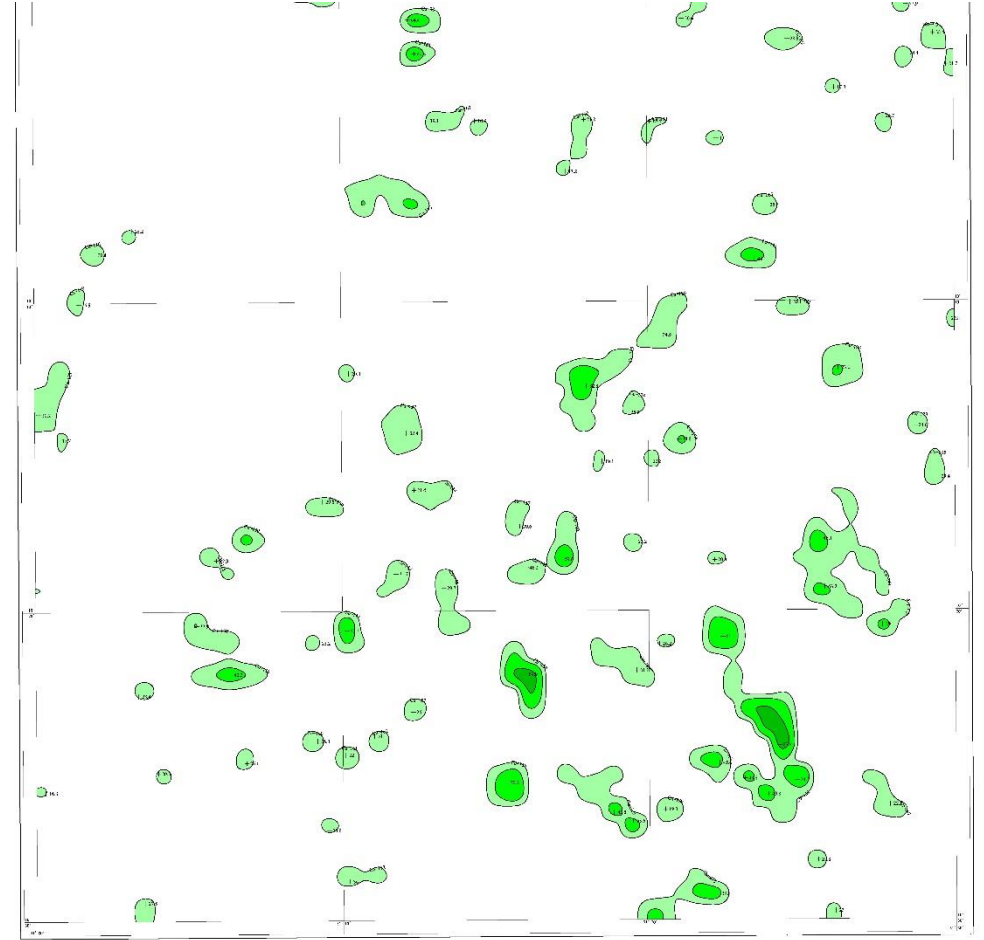
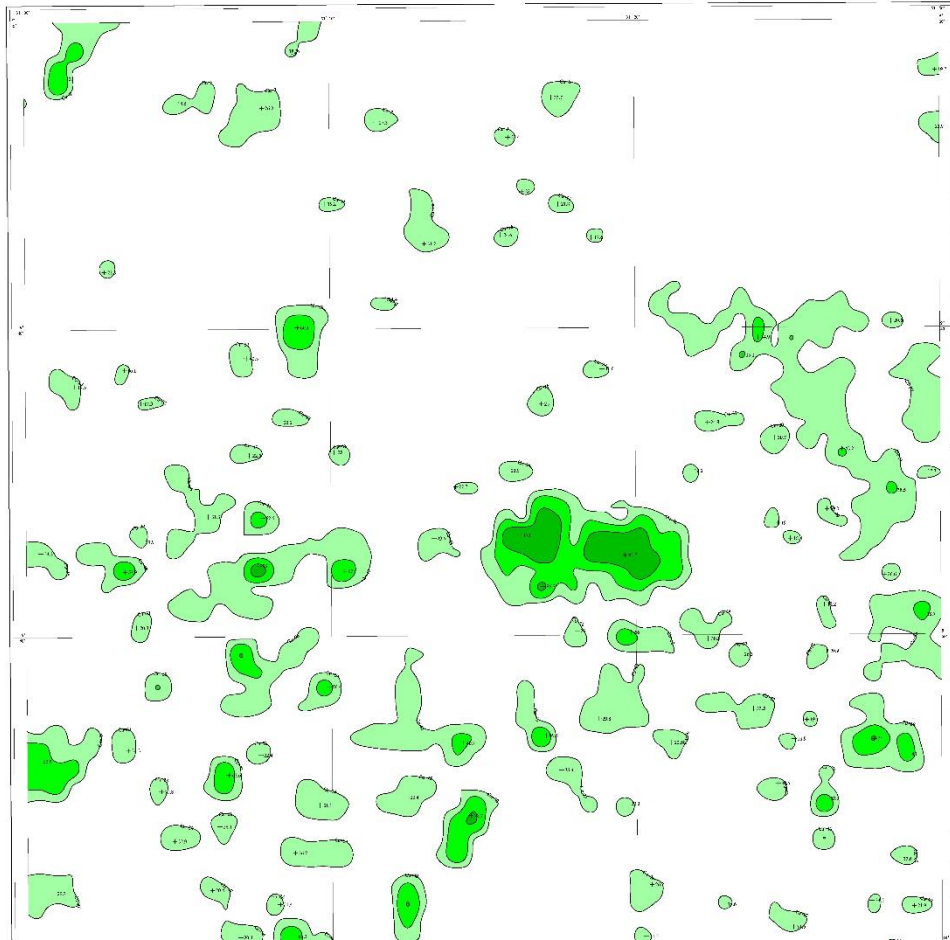




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Progress

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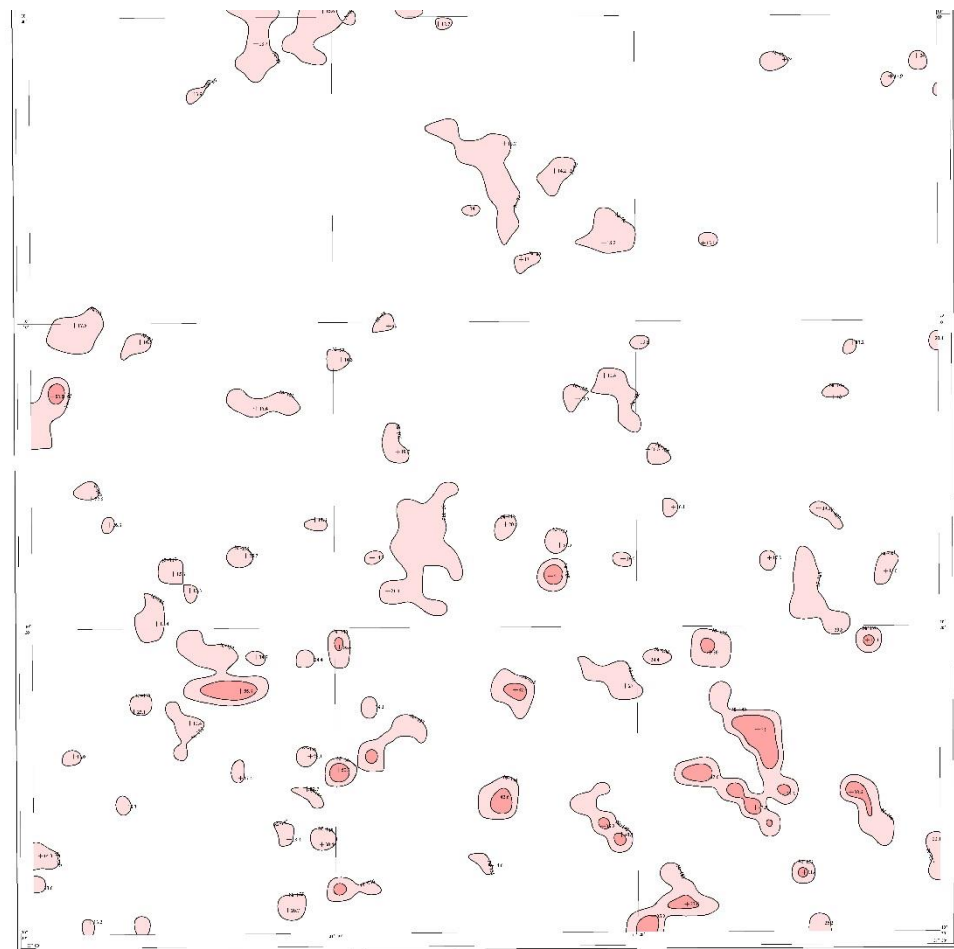
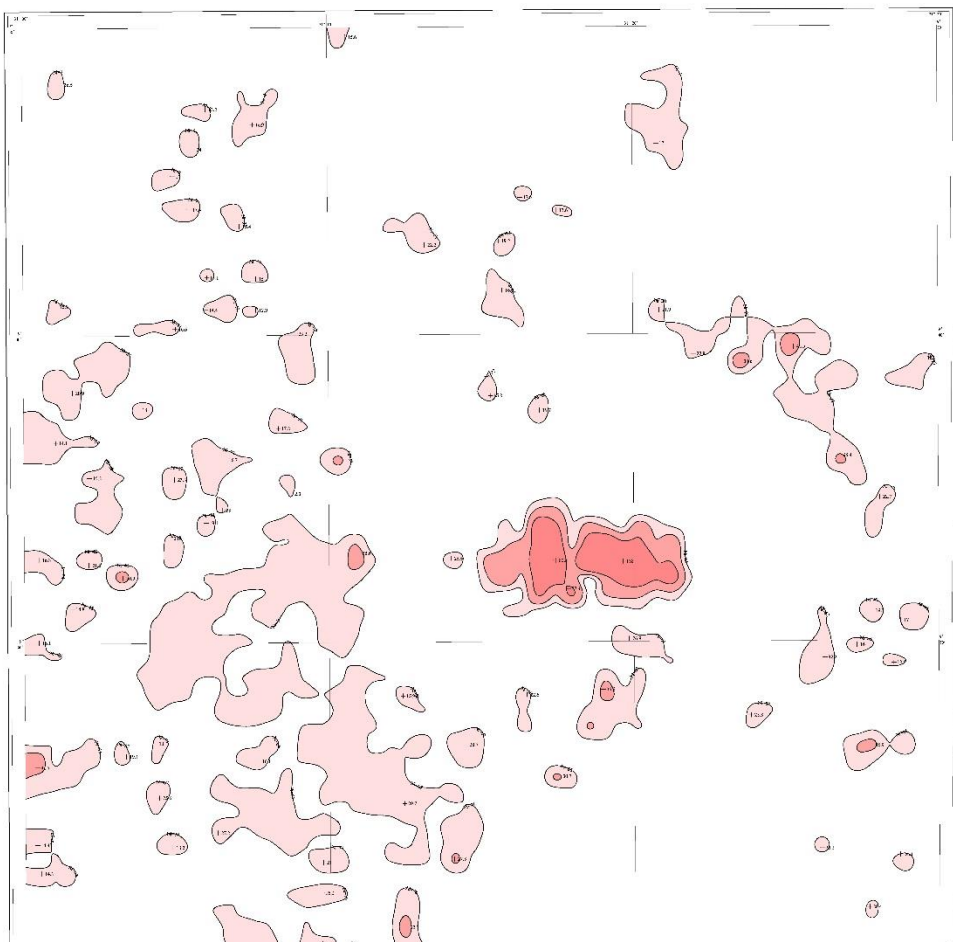




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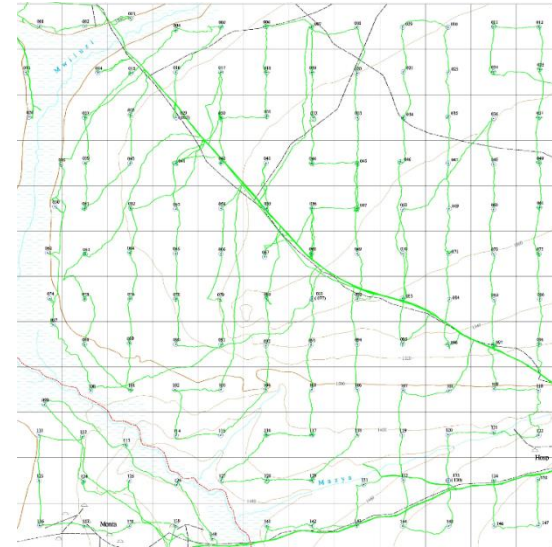
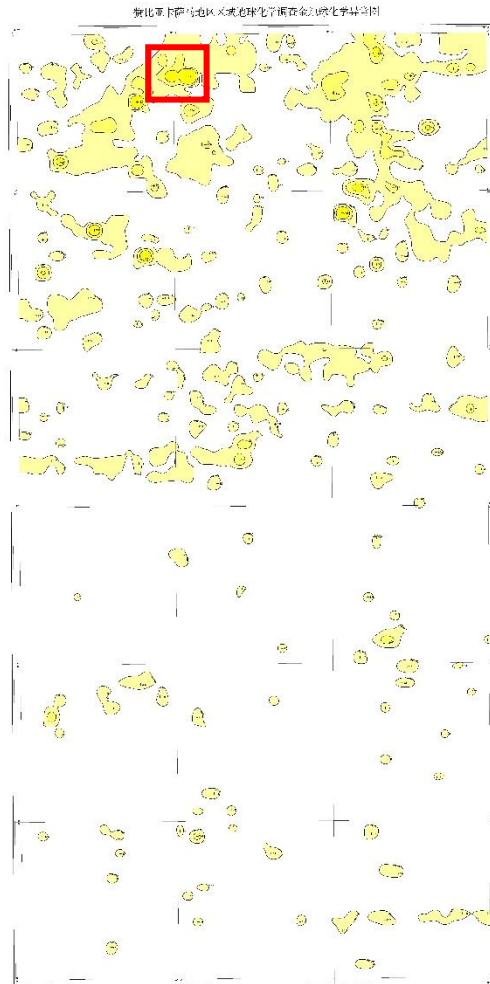
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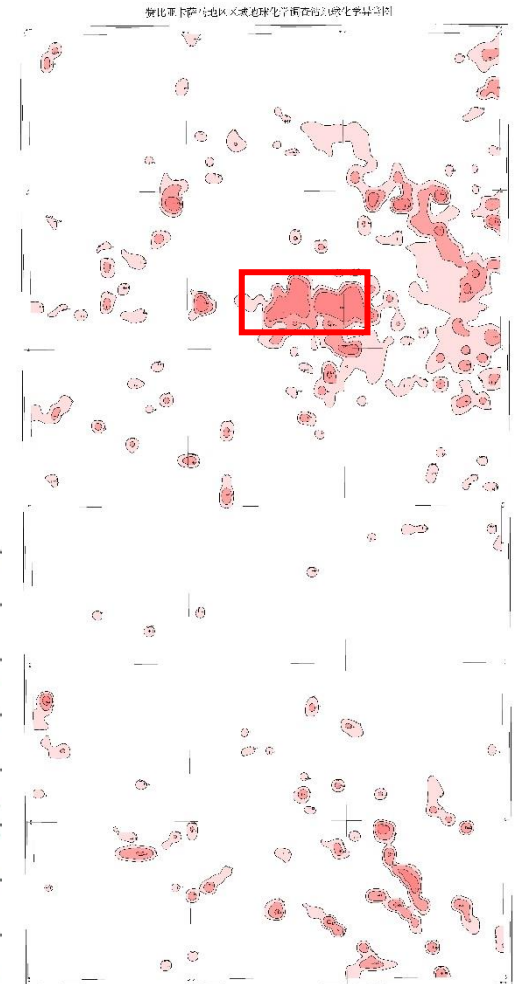
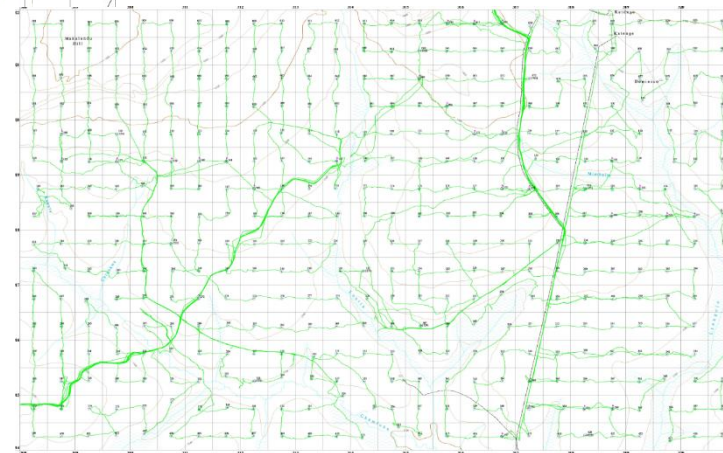
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For the one gold anomaly found in the study area, the follow-up investigation covers an area of 36 square kilometers with 147 samples, 6 elements are determined.

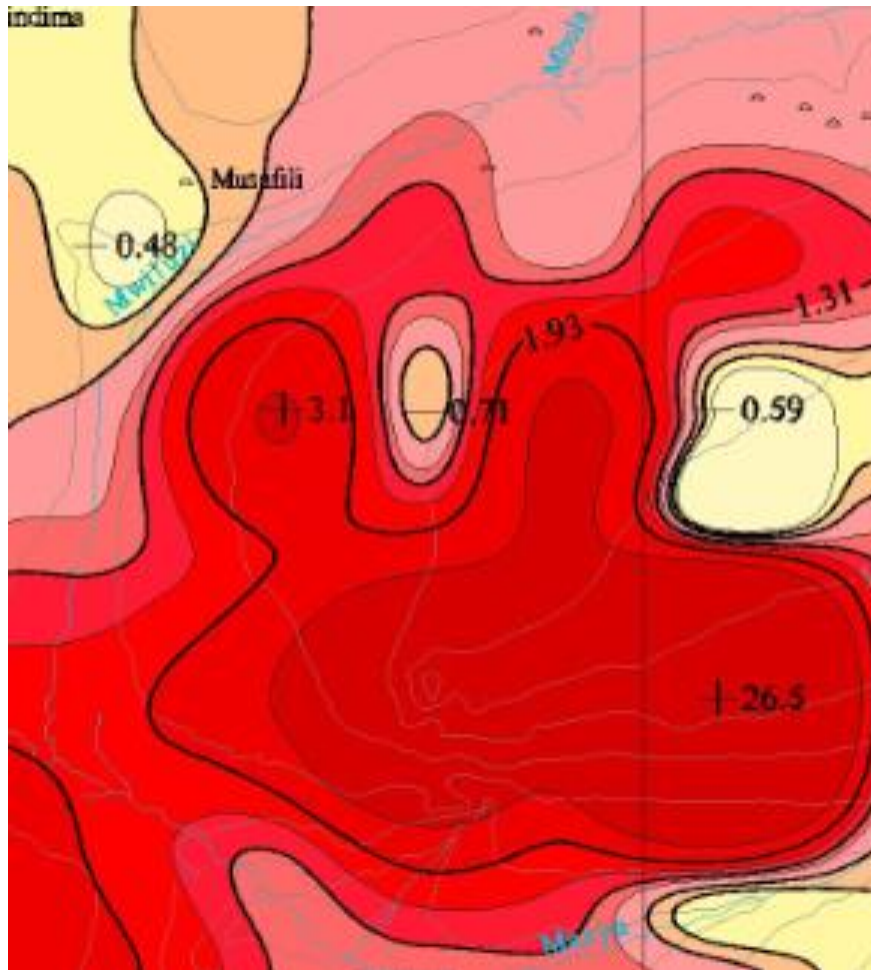
For the multi-element anomaly area of copper, chromium and nickel, the follow-up investigation covers an area 104 square kilometers with 425 samples, 15 elements are determined.



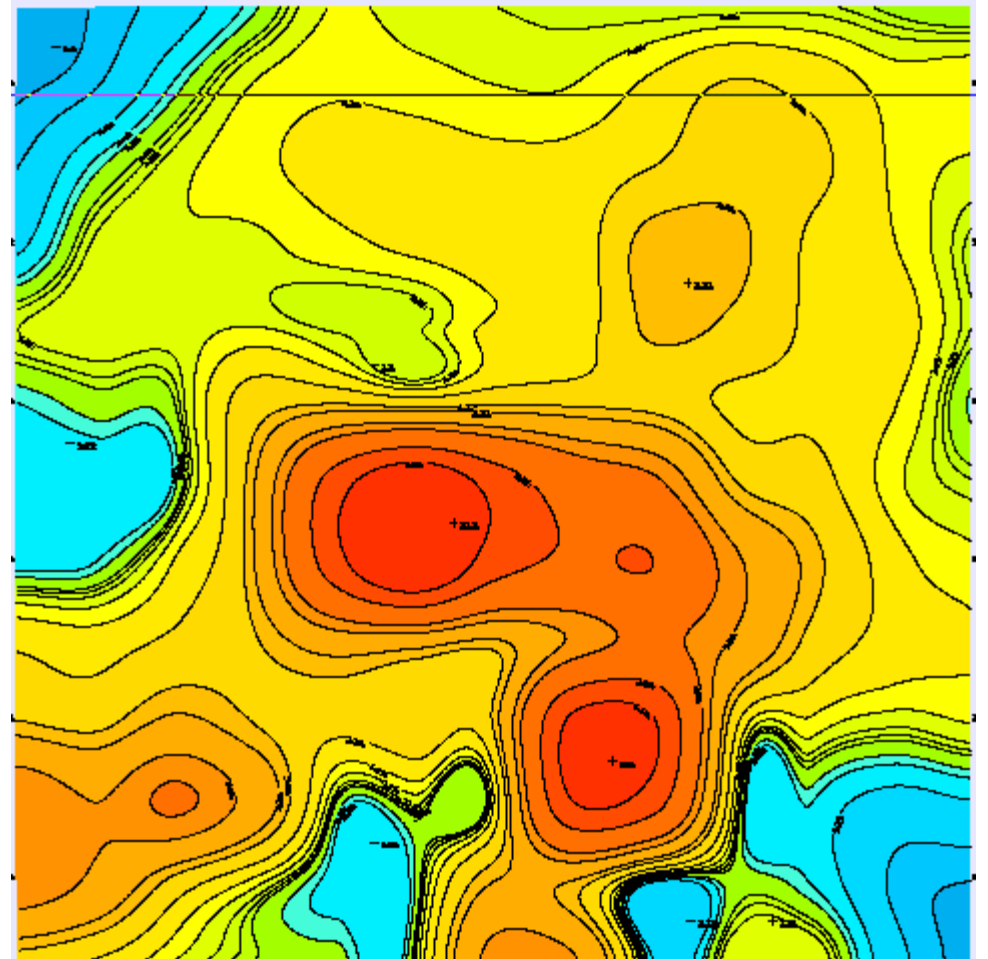


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Progress



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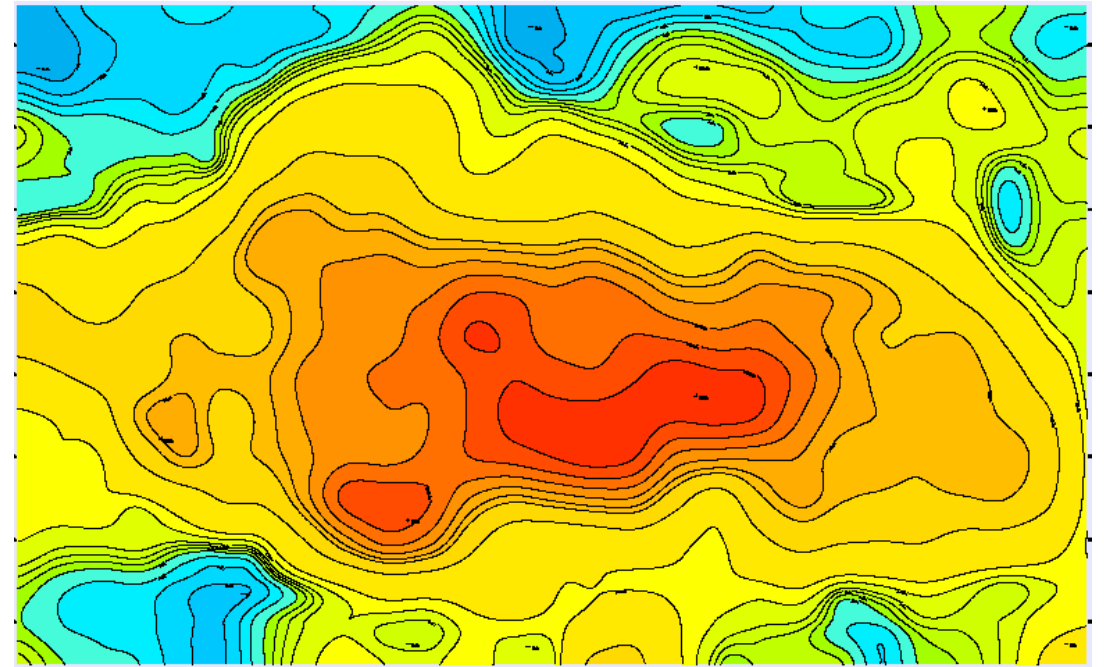
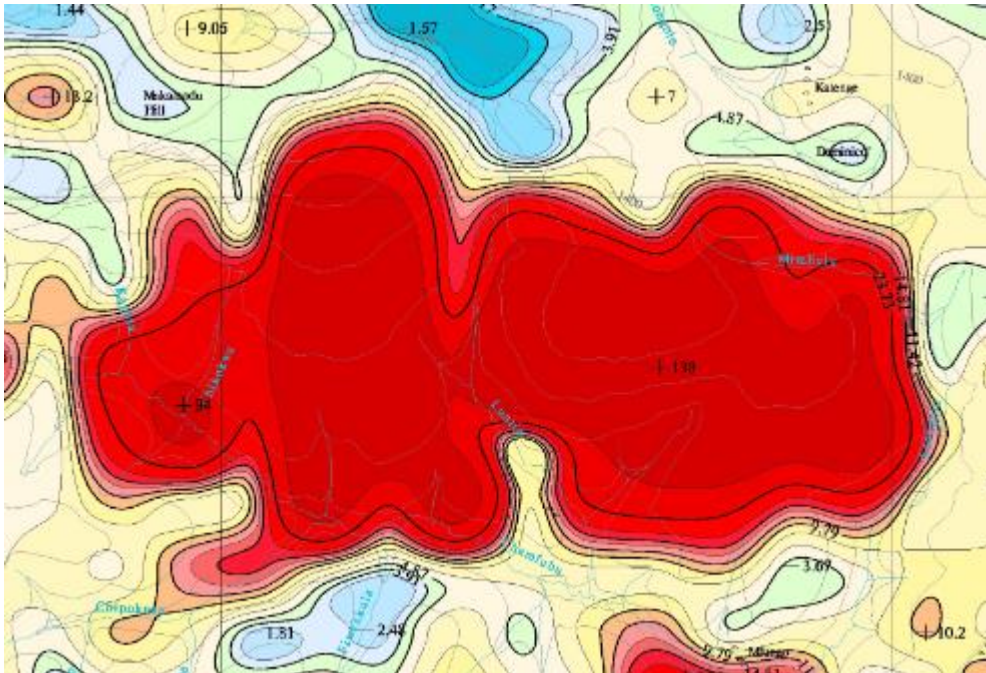




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Progress

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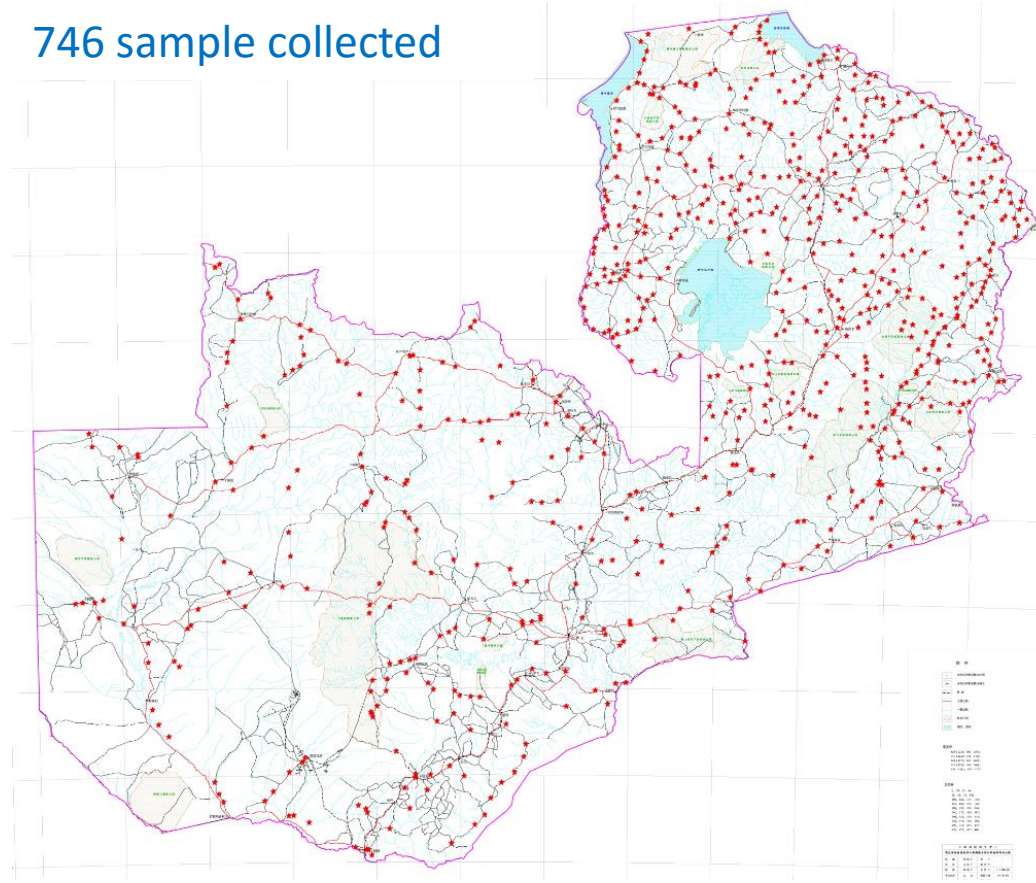




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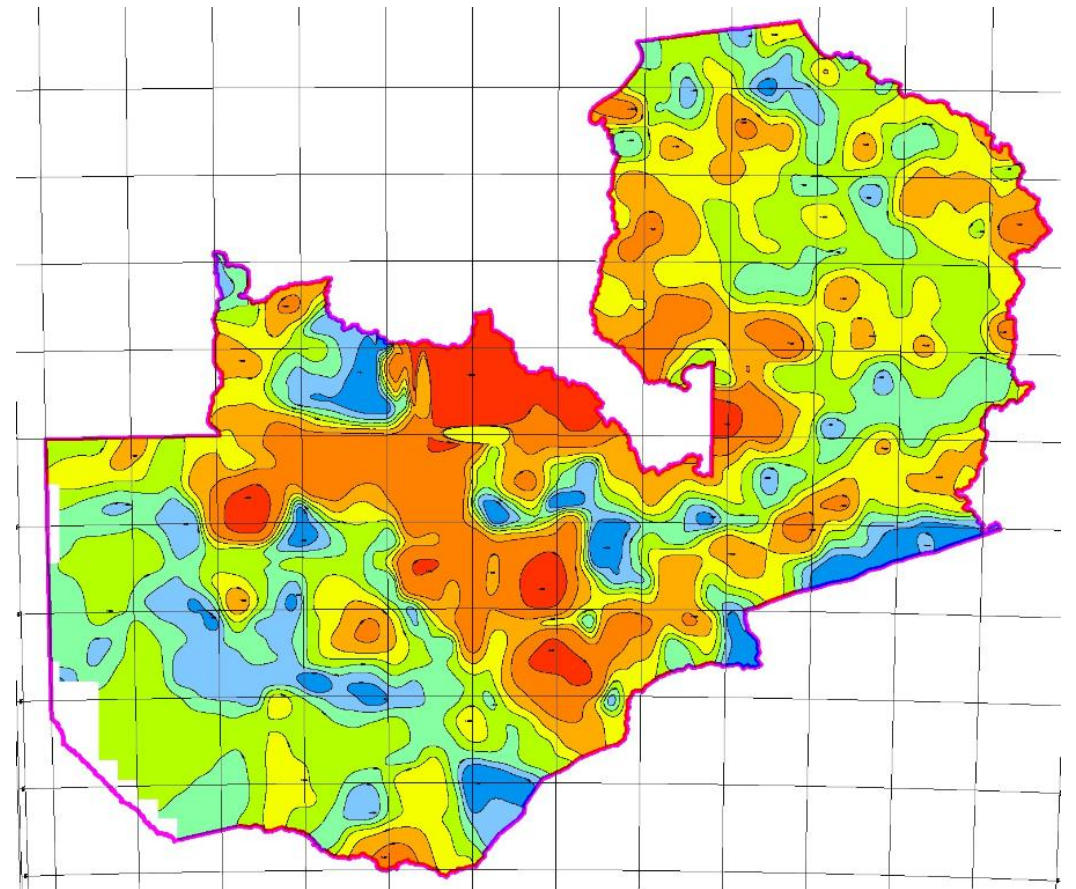
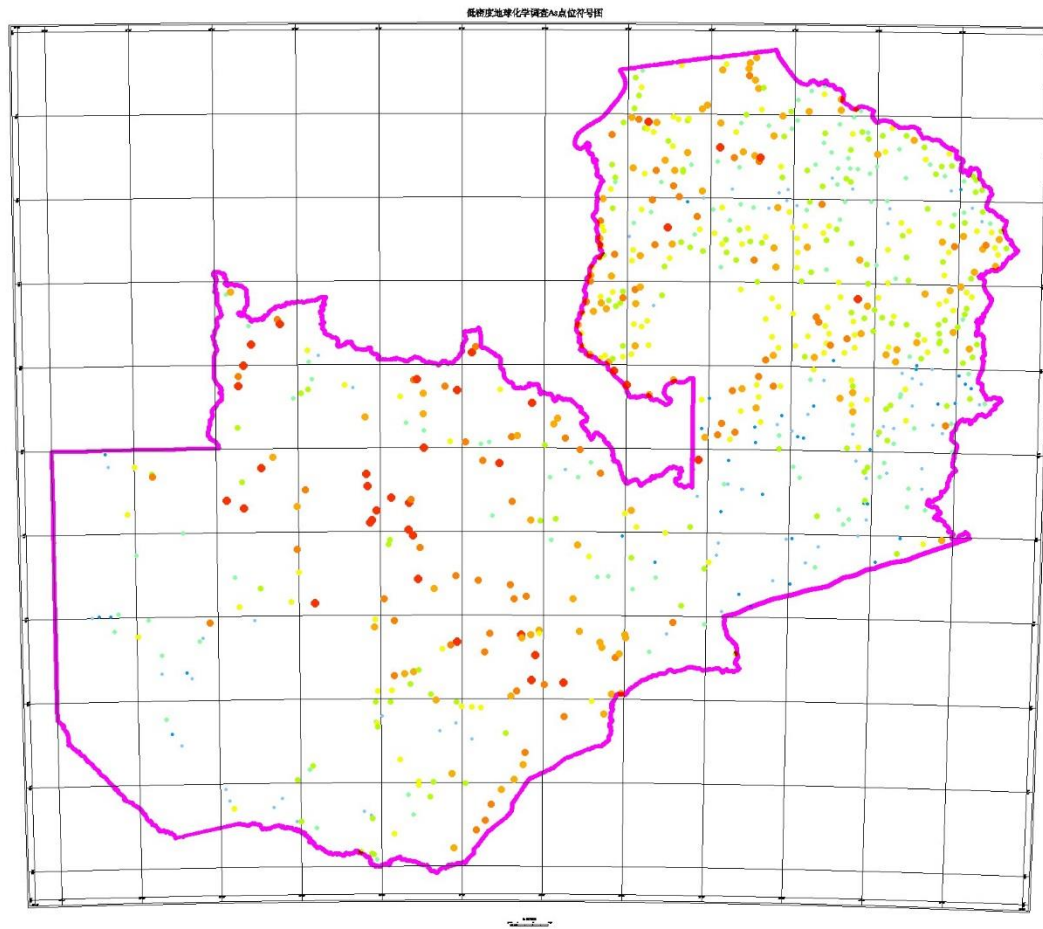
746 sample collected





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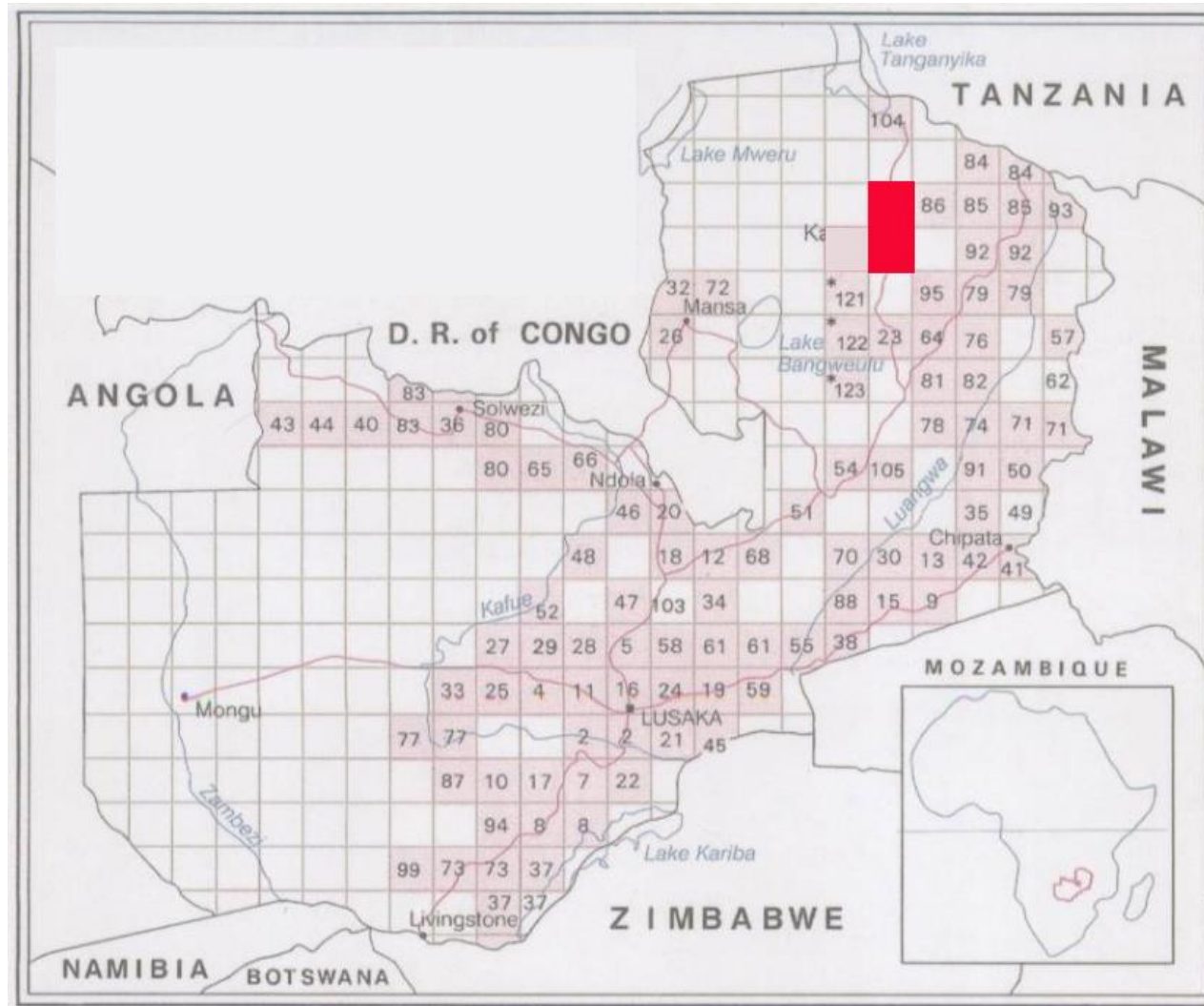
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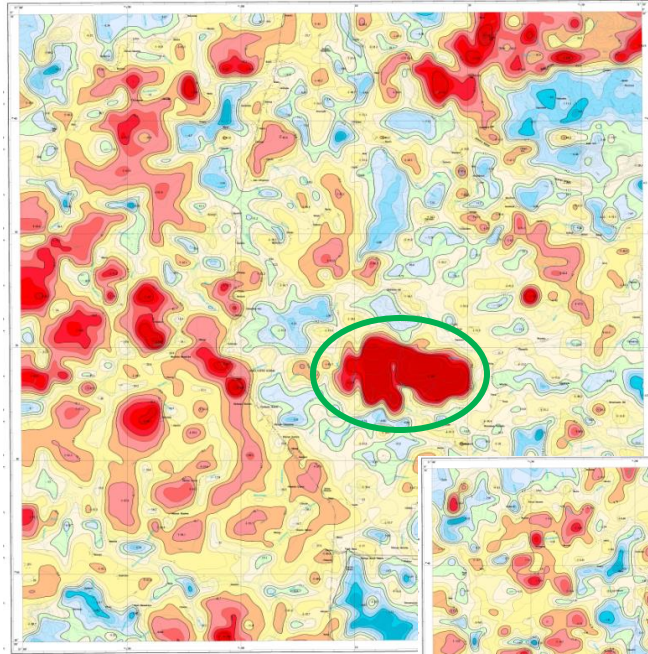
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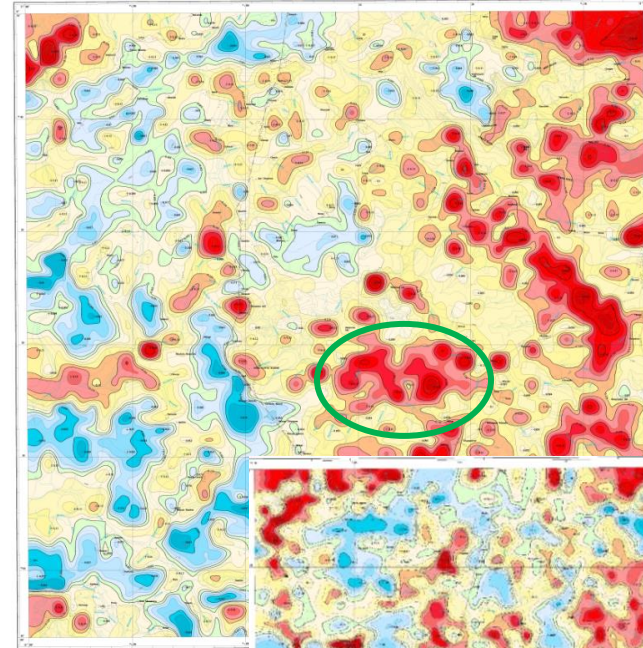


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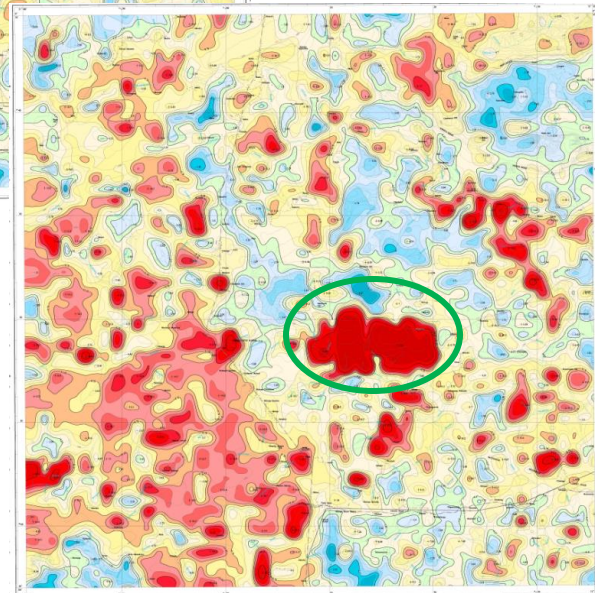
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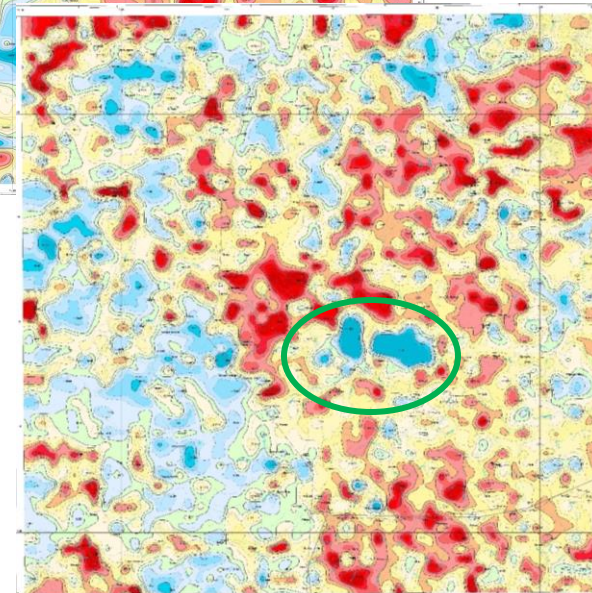
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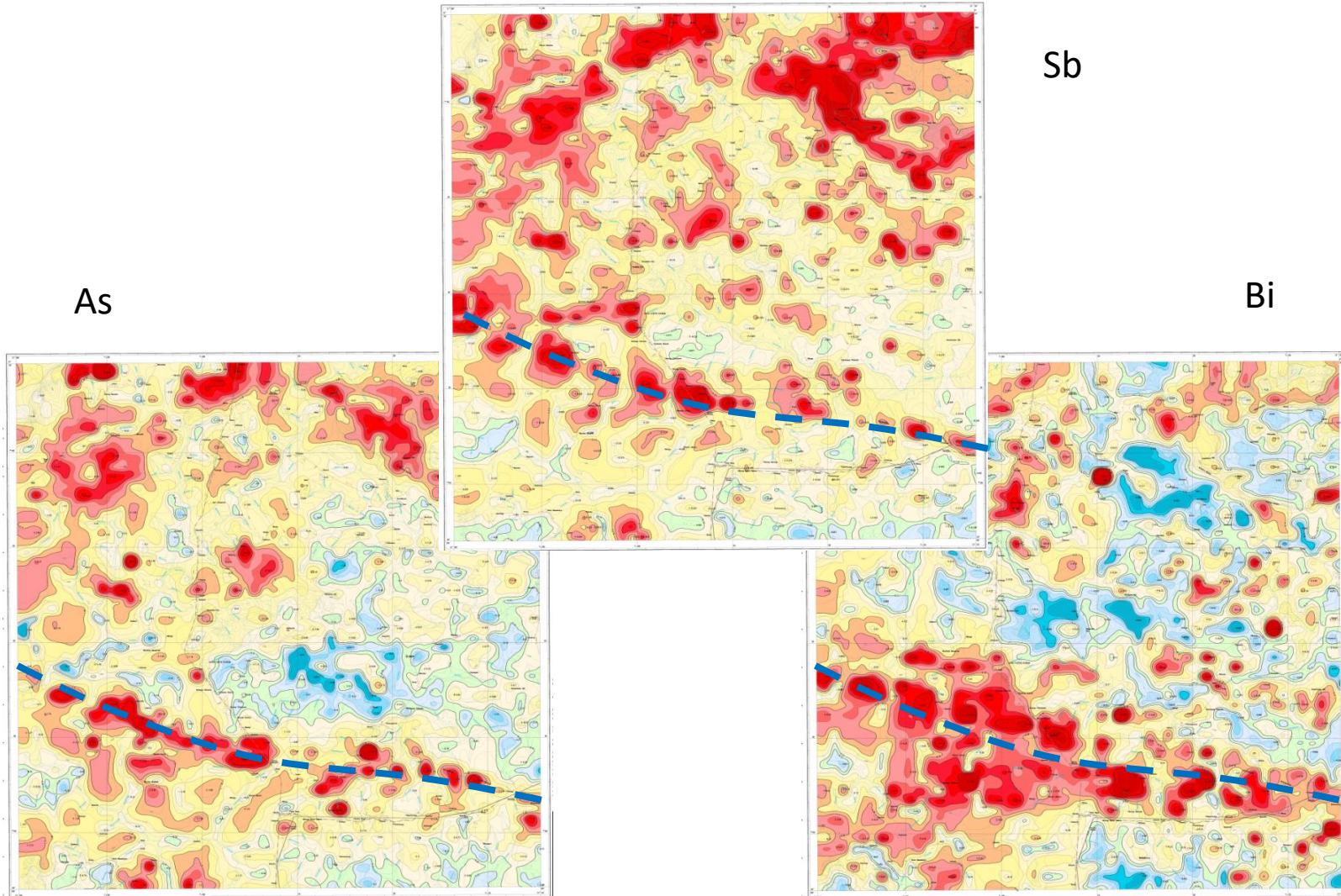


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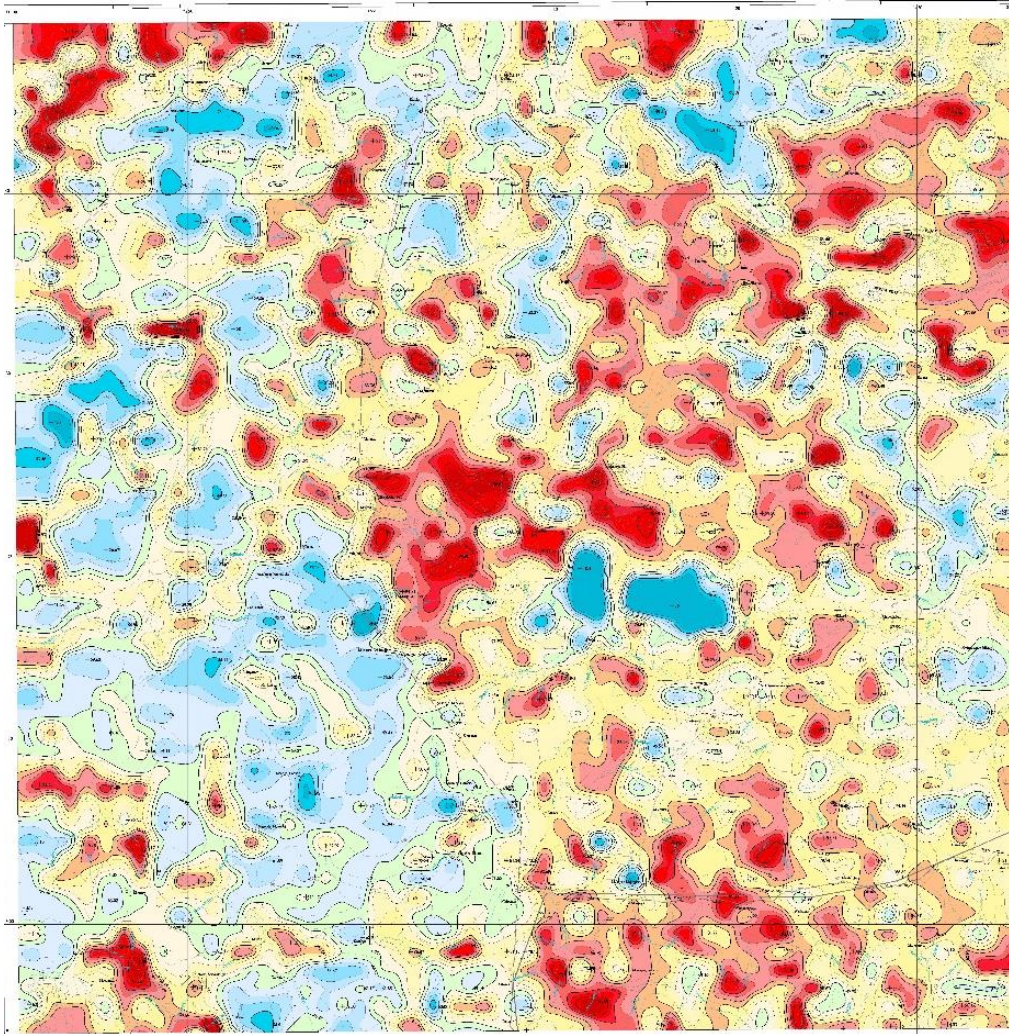
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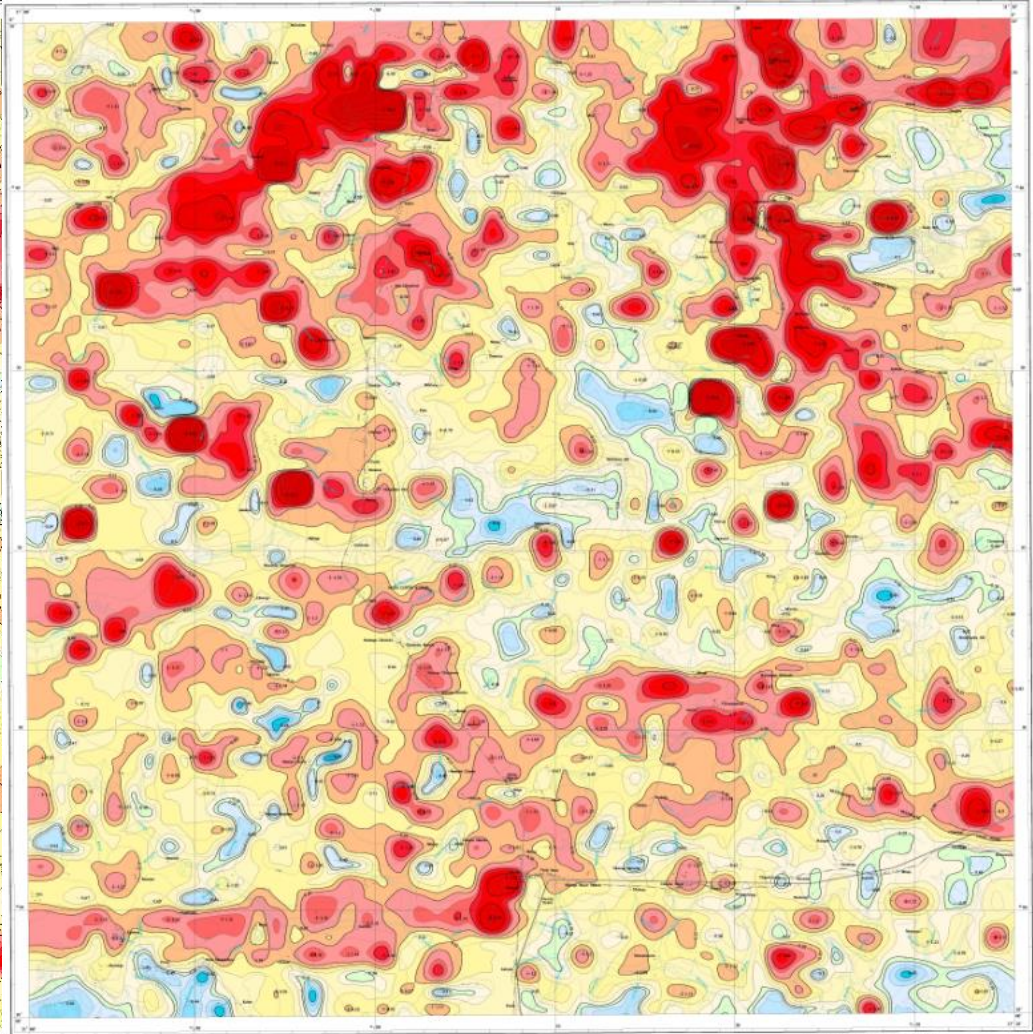


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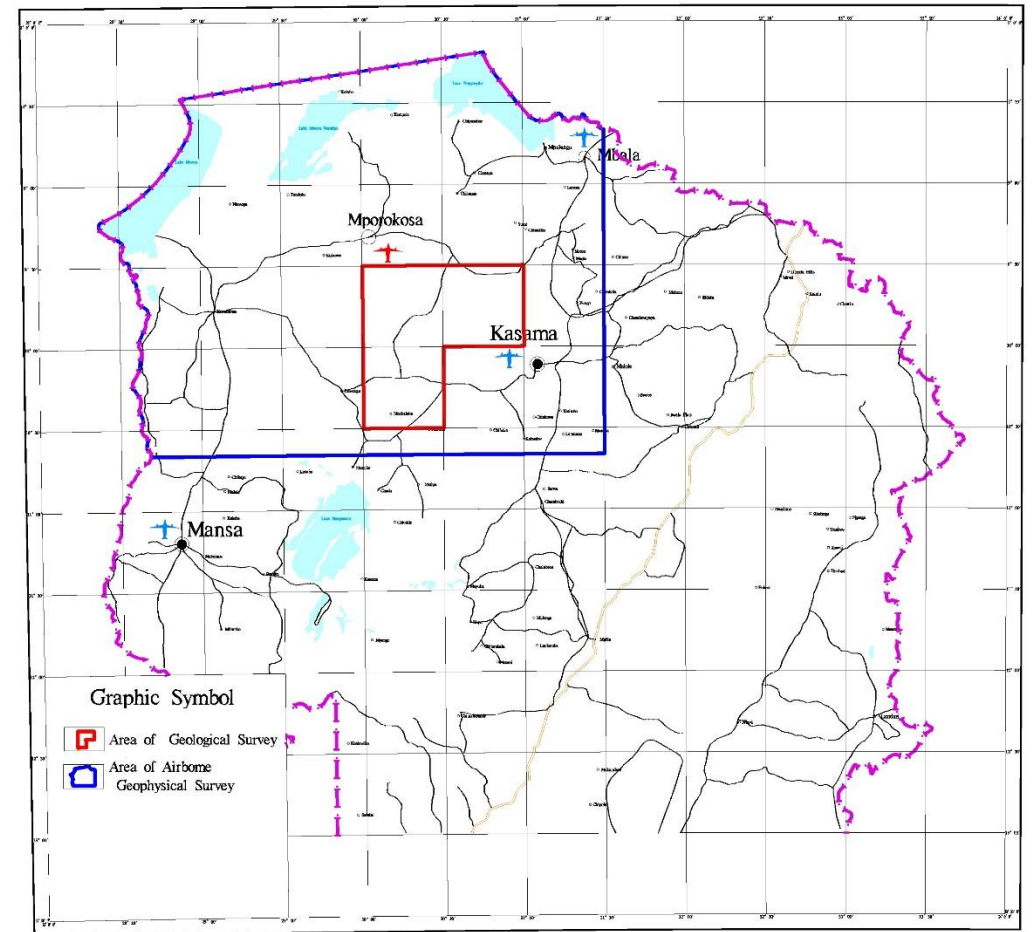


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Progress

Based on the above-mentioned investigation, in December 2014, P.R. China and the Republic of Zambia signed an agreement to carry out the project China-aided airborne geophysical survey and geological-geochemical comprehensive mapping in north-eastern part of Zambia

The project includes: the aerogeophysical survey in Northern and Luapua Provinces of Zambia, 1:100000 geological mapping in the west of Kasama, Northern province, and 1:250000 regional geochemical mapping in Kasama, Northern province.





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Progress

The aerogeophysical survey will use the advanced drone (CH-3), as the carrier for aeromagnetic and areoradioactivity equipment .

We have managed to obtain the flying authorization in the relevant airspace from the related departments of Zambia.





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Further cooperation



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Further cooperation

In April 2016, Director Zhong, China Geological Survey, paid a visit to Zambia, and signed a Memorandum of Understanding in geosciences with Geological Survey Department of Zambia.

Built on the corner stone of existing geological cooperation projects, carry out more extensive cooperation in geosciences. Carry out the research of basic geology, mineral geology, environment geology, agricultural geology, and so on. Through the comprehensive study of geology, deposit and remote sensing, evaluate resource potential. In the important metallogenic regions, carry out the cooperative research favorable for mining development.

China Geological Survey and Geological Survey Department of Zambia have agreed on the Global Geochemical Baselines and National Geochemical Mapping on 1:1 000 000 in Zambia.



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Further cooperation

During the project implementation, we will carry out extensive technical exchanges and cooperation, such as airborne remote sensing technology, spatial positioning technology, analysis technology, beneficiation and smelting techniques, so as to propel the advancement of geological theory and technology, enhancing the ability of scientific research, mineral exploration and so on. Concerning talent cultivation, many joint training models such as short-term training, joint training of young geologists, high-level specialized personnel exchanges, regular academic seminars, will be used to promote scientific and technological progress and talent growth in the field of geosciences for both countries.



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Thoughts



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Thoughts

The communication and cooperation between related departments of both governments are prerequisite and necessary guarantee for the successful geological cooperation.

In February, 2010, the Ministry of Land and Resources (MLR) of the People's Republic of China and the Ministry of Mines and Minerals Development of the Republic of Zambia signed the MEMORANDUM OF UNDERSTANDING in the field of geology and mining;



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Thoughts

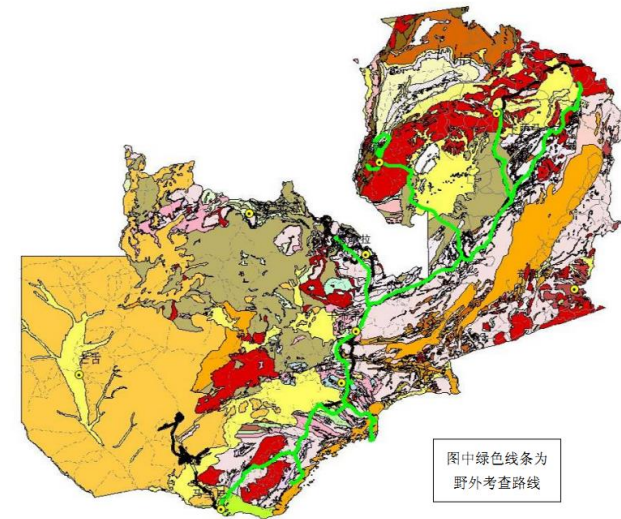
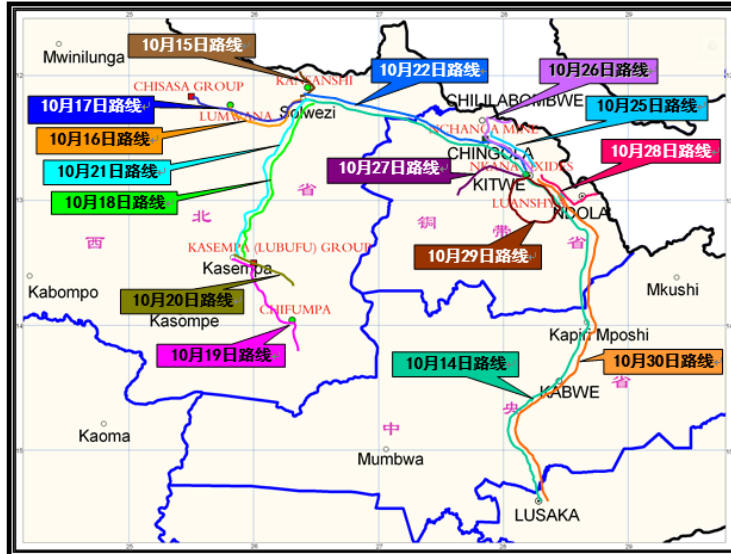
The communication and cooperation between related departments in geological survey of both countries are key to the success of a geological project.

October 8, 2005 - November 9, 2005:

In accordance with the agreement signed between the governments of China and Zambia, China Geological Survey dispatched a delegation consisting of 8 experts to Zambia for an investigation.

October 8, 2010 - November 9, 2010 :

China Geological Survey dispatched a delegation consisting of 7 experts to Zambia for a second investigation.





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Thoughts



The team reports to the Economic and Commercial
Counselor's Office of China in Zambia





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Thoughts

Paul Chanda



Chipilauka Mukofu

A. P. Dokowe





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Thoughts



Project field personnel

The director of Geological Survey
Department of Zambia and project
team work in the field





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Thoughts

Geological technical personnel
of both countries work jointly
in the field





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Thoughts

Geological technical personnel of
both countries exchange ideas





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Thanks