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Canada Silver Cobalt Works

Project: Eby Otto

High Resolution UAV Magnetometry

Report on Data Acquisition
UAV-Borne Magnetic Survey
Eby Otto Project

Report Date	Coordinate System	Prepared By
May 2022	UTM Zone -17N – NAD83	Daniel Card P.Geo, RPGeo – EarthEx Geophysical Solutions

Summary

A high resolution UAV-borne magnetic survey has been completed for Canada Silver Cobalt Works in the Kirkland Lake area. The survey was completed to provide a highly detailed magnetic map to aid in exploration mapping and drill-targeting in the area. The Eby Otto grid comprises 684.30 line kilometers with data acquired on 25 m spaced lines, with 250 m spaced tie-lines.

Overall excellent quality data were acquired, and the survey went smoothly. The daily log for the survey is provided in Appendix A. Quality control, surveying equipment and parameters, a survey log and a summary of deliverables are provided below. The general location of the survey is presented in Figure 1 and the survey block, and the line path is presented in Figure 2.



Figure 1: General location of the Eby Otto project.

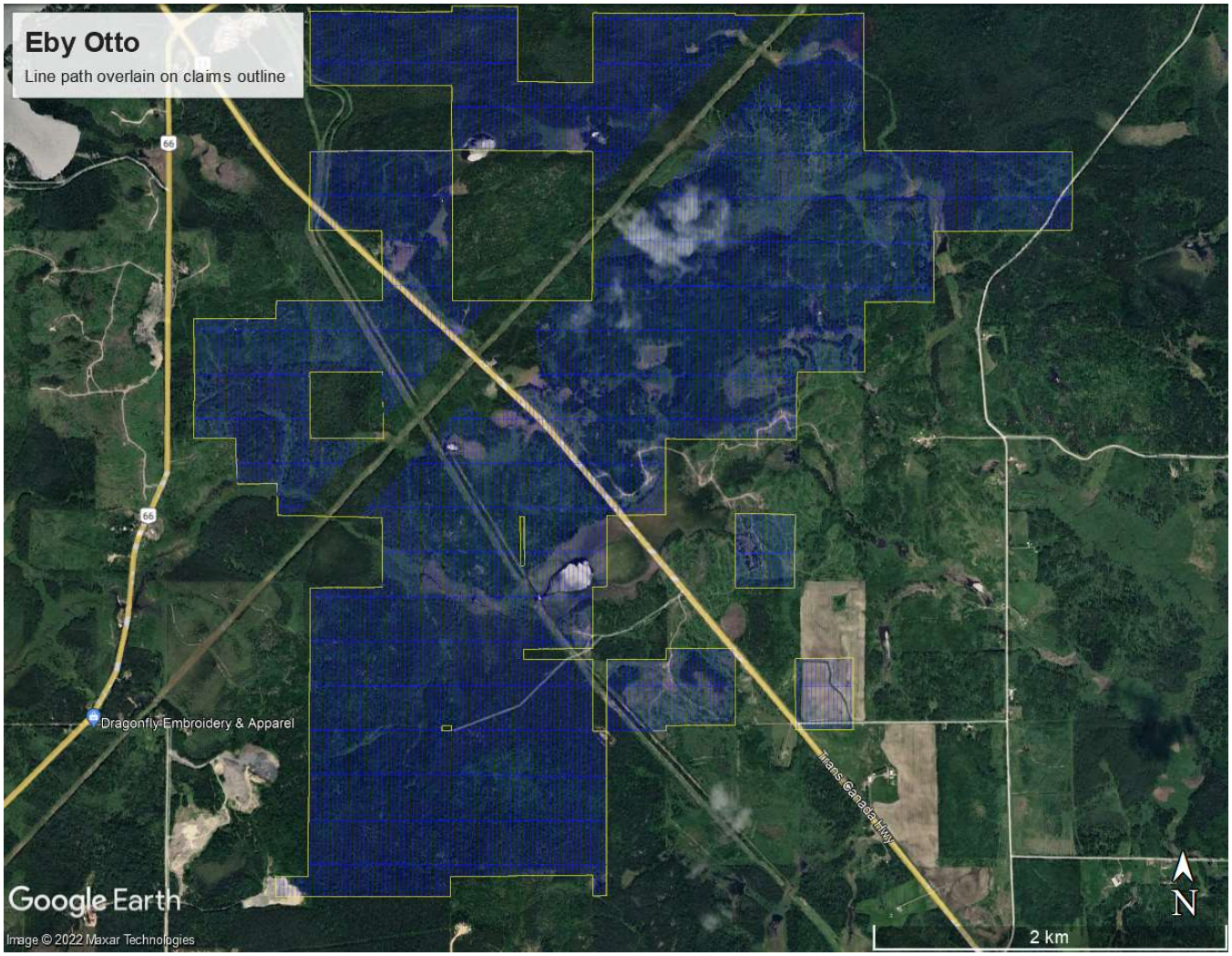


Figure 2: Flight path of the UAVMAG survey block over the Eby Otto claims outline.

System Description

EarthEx's UAV magnetometry system is focussed on maximizing data resolution while maintaining optimum mission accuracy and efficiency. The quality of any airborne magnetometry mission to capture the highest resolution data is dependent largely upon its ability to accurately record the sensor's path and drape the topography at a low average terrain clearance.

Unlike other UAV mounted systems, EarthEx's UAV system employs an automatic obstacle avoidance system, which allows it to fly with a sensor drape performance of 5m above local obstacles. It is the only system with this capability in Canada. This is a significant advantage, allowing us to collect data down to 25m line-spacing or below, without oversampling, throughout most of the Canadian landscape. This is something that cannot be achieved without the automatic obstacle avoidance system, which allows our aircraft to fly with the magnetometer just above the canopy, automatically avoiding any taller trees which may stand in its path. Other UAV systems, without this technology, must fly higher to avoid collisions, so do not deliver any improvements on resolution by surveying with lines closer than 40m spaced. This is the reason which we are able to provide the cleanest, most detailed magnetic maps of any airborne platform on the market.

The EarthEx UAV system comprises:

- DJI Matrice Pro 600 airborne platform.
- RTK Telemetric navigation hardware.
- Scintrex Cs-VL – Cesium Vapor Magnetometer.
- Proprietary navigation system with automatic obstacle avoidance.
- GEM Overhauser or Proton Precession base station.

The combination provides the safest and most precise UAV magnetometry system operating today. The enhanced precision of this system is ideal for all applications where detailed geological mapping is desired.

UAV Magnetic Survey

The survey parameters for the survey block are shown in Table 1. The statistics were calculated to provide a quick assessment of the magnitude of magnetic anomalism in the data and is outlined in Table 2.

Table 1: Survey parameters for the UAVMAG survey data

Block ID	Data Format	Date Surveyed	Line Kms	Line Spacing/Tie line Spacing	Mean Terrain Clearance	Azimuth
Eby Otto	GDB	2022-04-06	684.30 lkm	25/250 m	30 m	0°

Table 2: Statistics of magnetic anomalism in the dataset.

Block ID	IGRF nT	IGRF Inclination (°)	IGRF Declination (°)	Minimum nT	Maximum nT	Mean nT	Range nT	Standard Deviation nT
Eby Otto	55265	72.5°	-10.8°	-964	20460	311	21424	1241

Before surveying a grid, a "cloverleaf" test is completed to confirm that the geophysical system is performing correctly. While doing this test the UAV flies in a cloverleaf pattern recording the total magnetic field in the centre of the cloverleaf on each pass, while flying in several different directions. This provides a measure of the consistency of the readings with the sensor in various orientations. The standard deviation of the centre readings should be within 2 nT to indicate that the sensor is performing well, and the drone is following its flight path accurately. The cloverleaf tests for the Eby Otto grid were successful and is shown in Figure 3 with the standard deviation stated in the figure captions of the data plots.

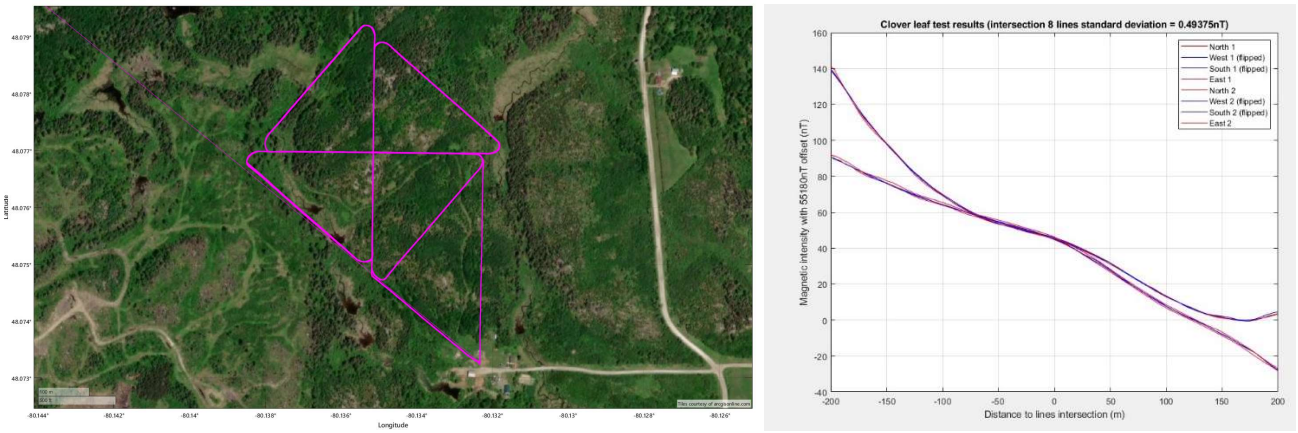


Figure 3: LEFT: Flight path of cloverleaf test for the Eby Otto UAVMAG project. Multiple measurements are completed at the centre of the cloverleaf and the standard deviation between measurements is calculated to ensure the system is performing correctly and the data are repeatable with low noise levels. RIGHT: Standard deviation of 0.49 nT from the measurements at the centre of the cloverleaf. The target standard deviation for this test is 2 nT or below.

A statistical analysis of tree heights was performed based on the Canada Trees database, followed by calibration flights on the grid to map actual tree heights for comparison. An average terrain clearance of 30 m was then selected for the survey.

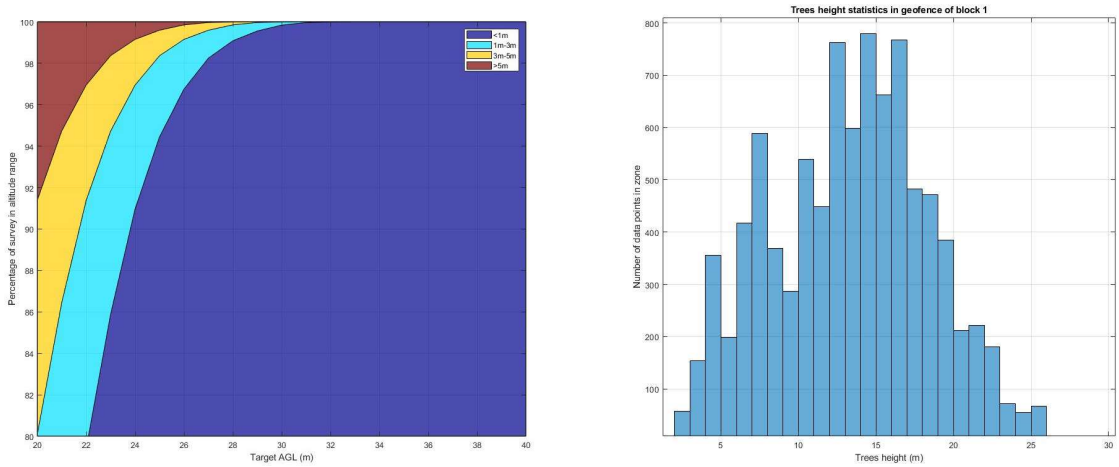


Figure 4: An average terrain clearance of 30 m was then selected for the survey.

Residual magnetic intensity (RMI) and the first derivative of the residual magnetic intensity (RMI_1vd) are presented for the Eby Otto grid in a linear 2% percent clip colour stretch in Figures 5 and 6. The RMI and RMI_1vd with a histogram-equalized non-linear stretch are presented for the grid in Figures 7 and 8. These colour stretches are designed to prevent outliers from skewing the images and serve to highlight the greatest number of features (non-linear stretch) and clearly define the strongest and weakest features (linear stretch).

An exclusion zone was established around the high-voltage powerline present on site running in the NE-SW direction, in order to ensure safe surveying. An interpolation algorithm has been used to fill the gap in the images and this area is shown as somewhat faded in the images below to illustrate where the interpolation has been performed.

Hazards in the NW-SE direction included the Trans-Canada highway and lower powerline running along it, which were addressed by programming an obstacle, which instructs the drone to fly higher over that area. A stippled pattern resulting from that powerline is visible in the data and should not be interpreted as having a geological source.

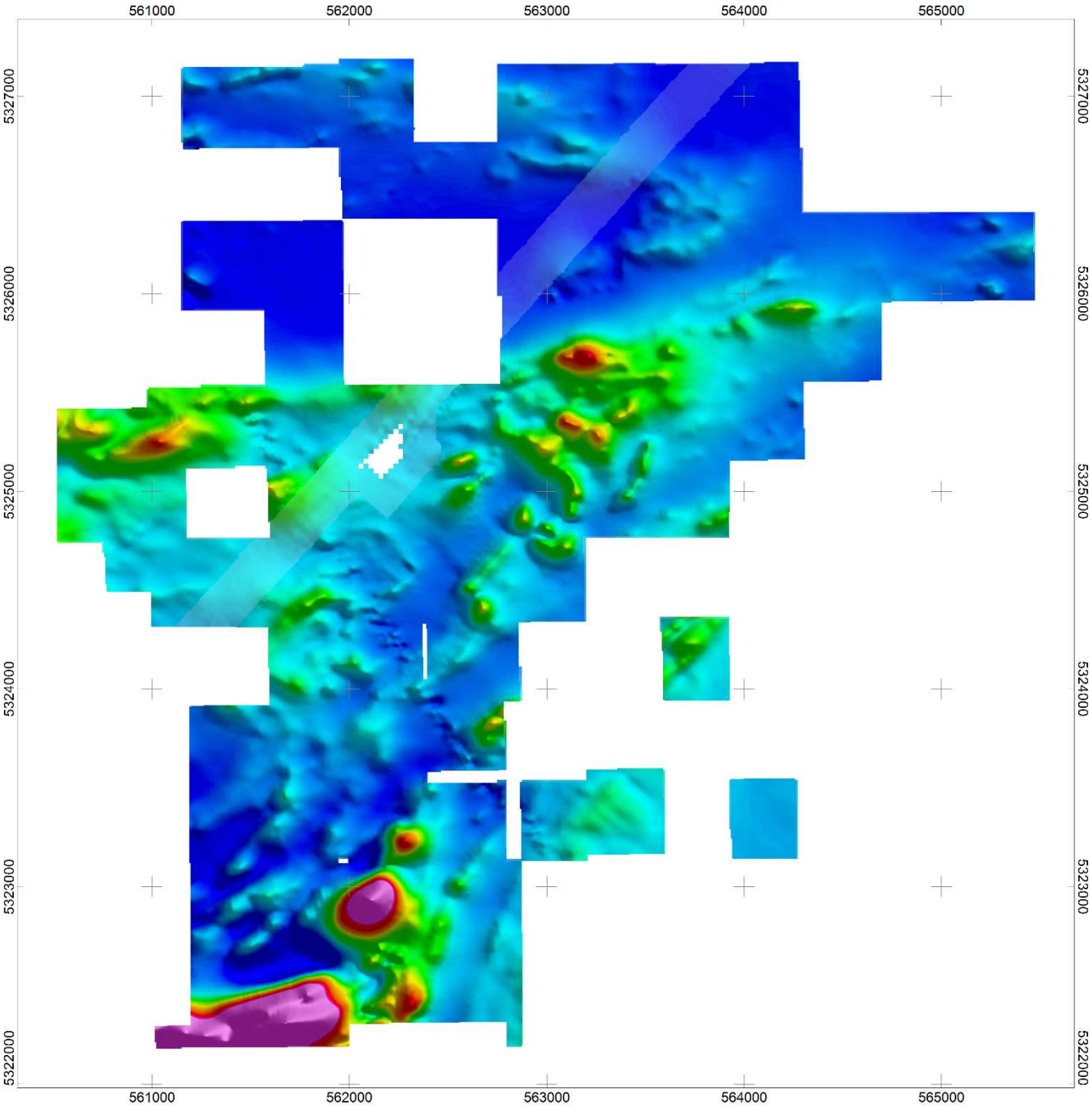


Figure 5: Residual magnetic intensity for Eby Otto using a linear 2% clip colour stretch.

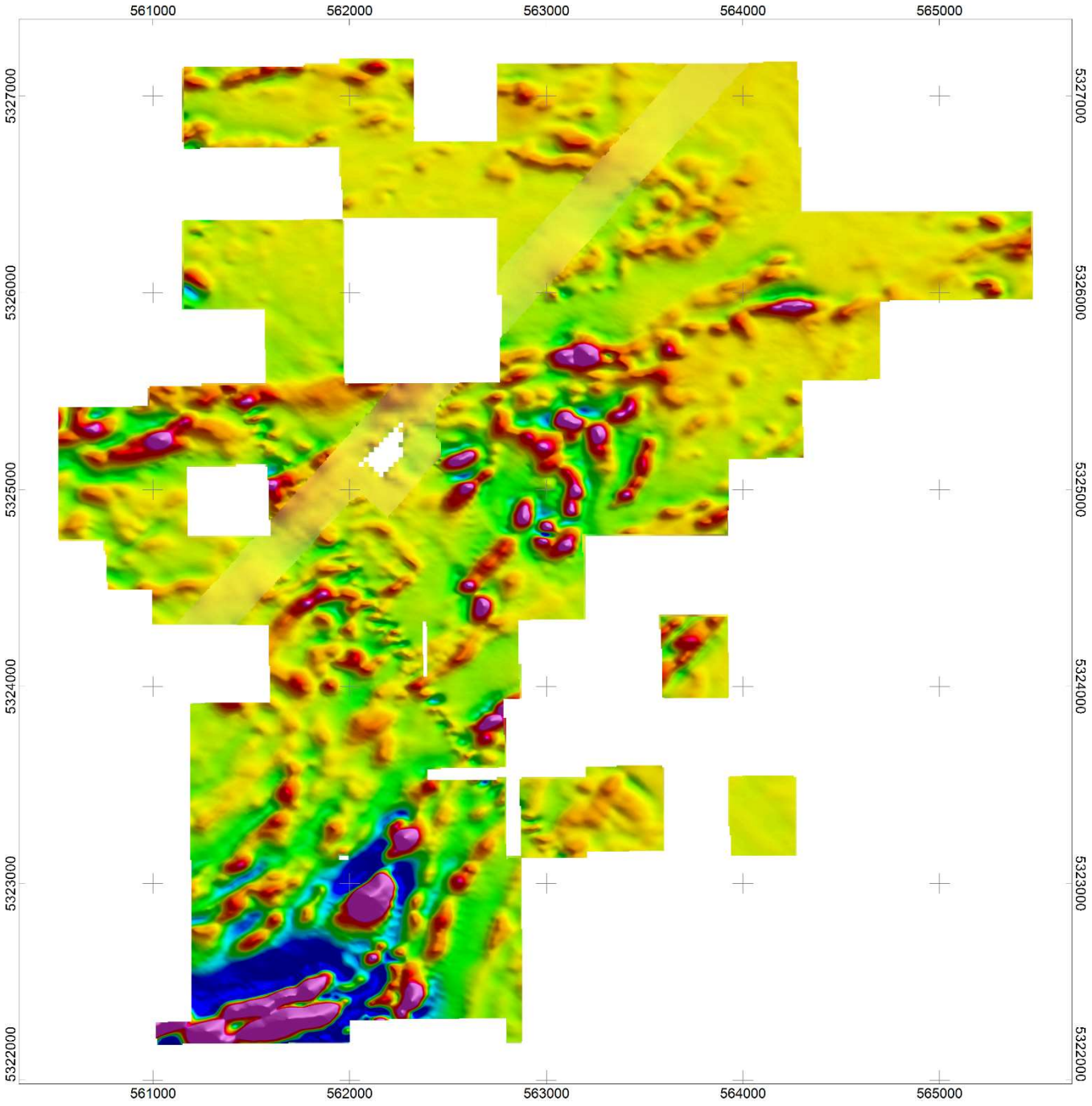


Figure 6: First vertical derivative of the residual magnetic intensity for Eby Otto using a linear 2% clip colour stretch.

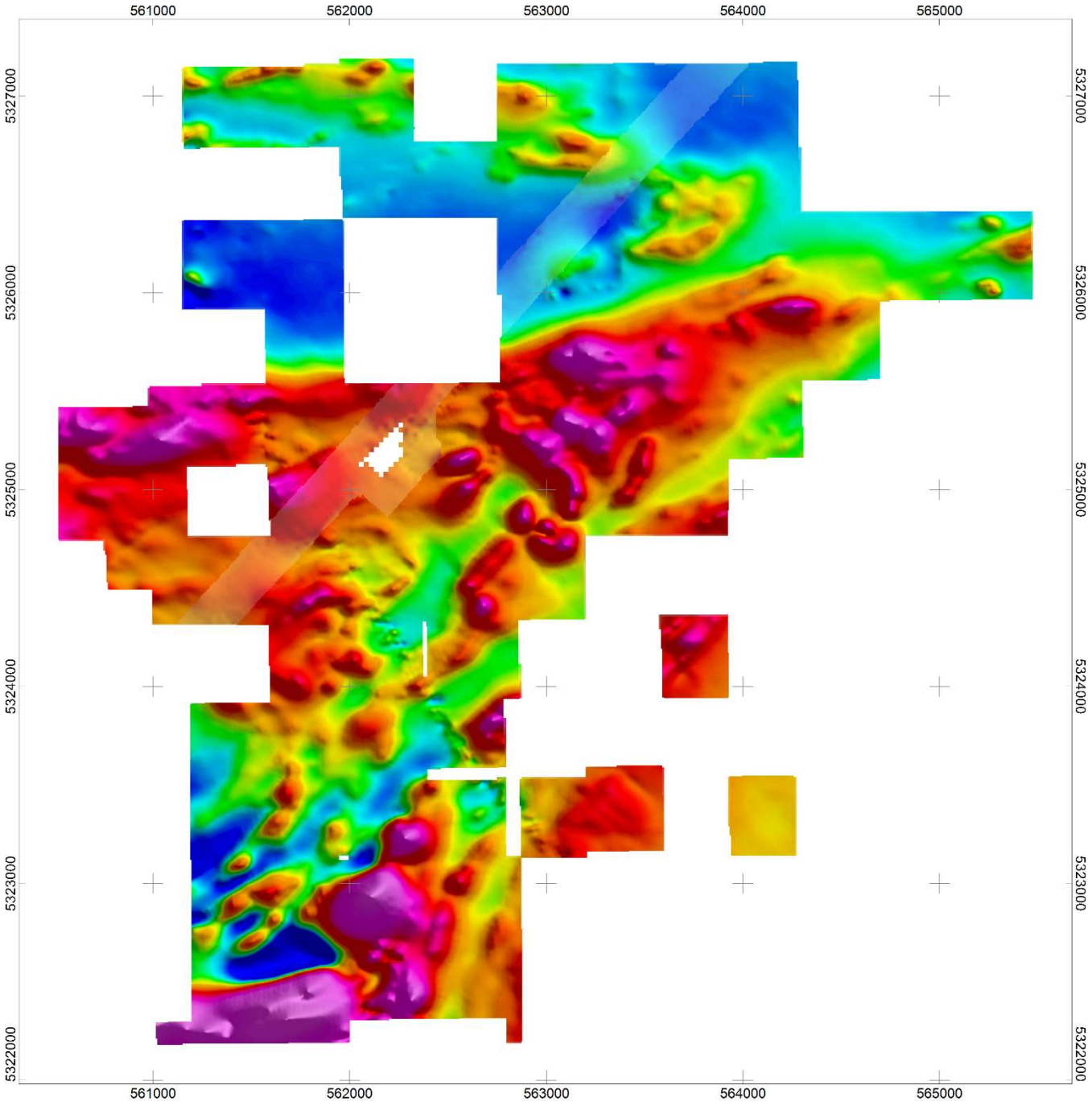


Figure 7: Residual magnetic intensity for Eby Otto with a non-linear colour stretch.

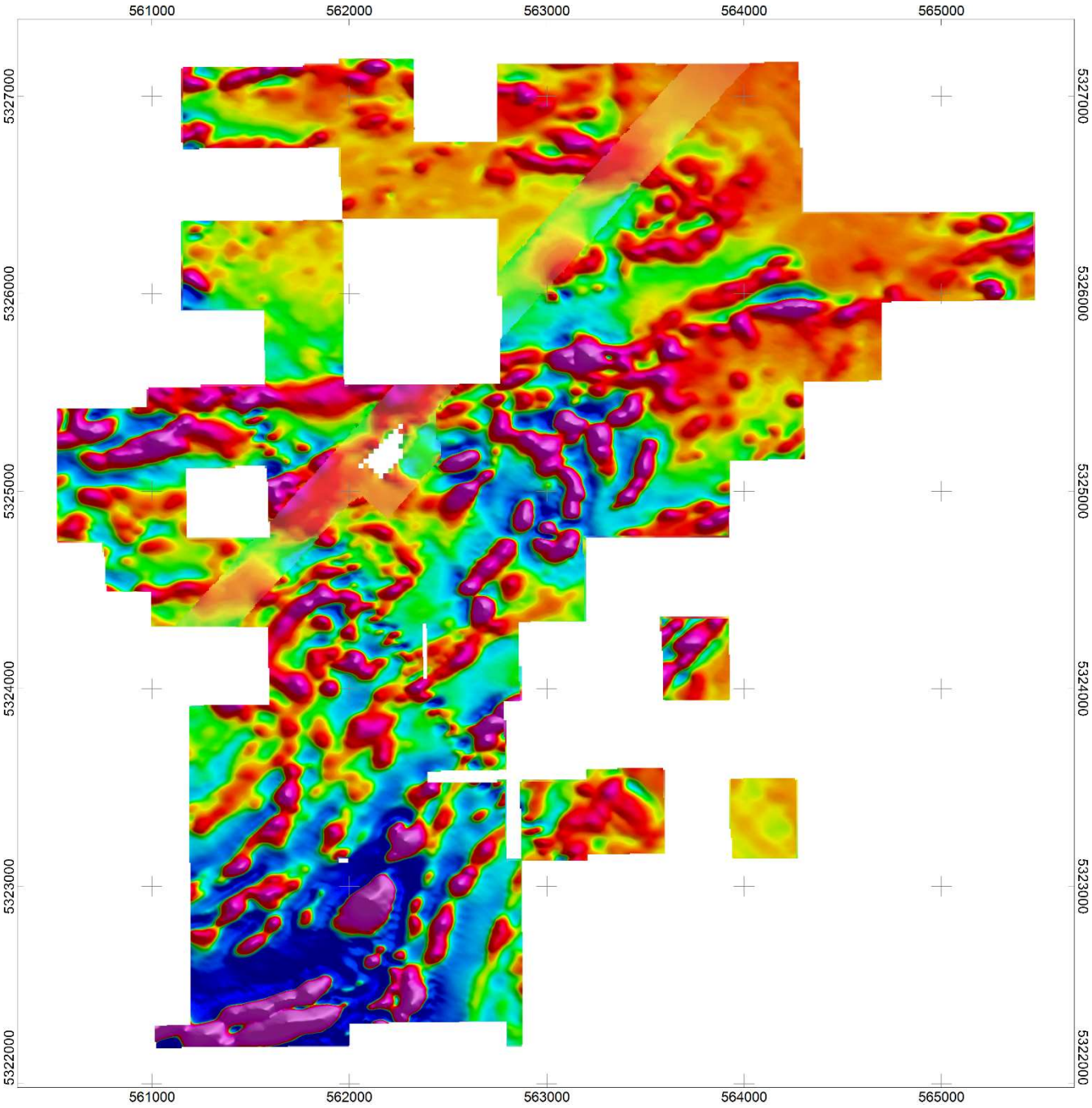


Figure 8: First vertical derivative of the residual magnetic intensity for Eby Otto with a non-linear colour stretch.

Deliverables

UAV MAG Deliverables

- UAV MAG survey database in Geosoft Database (.GDB) and Comma Separated Values (.CSV) format. The databases in Geosoft Database format contain the channels listed in Table 3.
- Residual magnetic intensity and first vertical derivative maps for Eby Otto, delivered in Portable Document Format (.PDF).
- Grids of residual magnetic intensity and first derivative of residual magnetic intensity in Geosoft .GRD format.

Table 3: Geosoft Database description

Channel Name	Description
Line	Line number
Date_UTC_YYYY_MM_DD	Date in UTC format
Time_UTC__HH_MM_SS_SSS	Time in UTC format
Latitude	WGS84 GPS latitude (decimal degrees)
Longitude	WGS84 GPS longitude (decimal degrees)
UTM_x	X Easting (meters) – NAD83 UTM 17N
UTM_y	X Northing (meters) – NAD83 UTM 17N
UTM_Zone	UTM zone for UTM_x and UTM_y
Mag_ASL_m	Altitude above sea level (metres)
Mag_AGL_m	Altitude above ground level (metres)
Mag_TMI_Ground_Base__nT	Base station total magnetic field measurements (nT)
Mag_TMI_Raw__nT	Raw total magnetic field measurements (nT)
Mag_TMI_Interpolated__nT	Interpolated total magnetic field data (nT)
Mag_Diurnal_Correction__nT	Diurnally corrected total magnetic field data (nT)
Mag_TMI_Processed__nT	Final processed total magnetic field data (nT)
Tot	International Geomagnetic Reference Field (IGRF) – Total magnetic field (nT)
Inc	International Geomagnetic Reference Field (IGRF) – Inclination (degrees)
Dec	International Geomagnetic Reference Field (IGRF) – Declination (degrees)

We thank you for the opportunity to work with you and hope that the services we have delivered are of great utility in your exploration efforts. If you have any questions or requests, please do not hesitate to get in touch. We are here to support you however possible.

We look forward to working with you again soon.

Sincerely,



Daniel Card, P.Geo, RPGeo

Principal Geophysicist. EarthEx Geophysical Solutions Inc.

Appendix A: Daily Log

Table 4: Daily log for the Eby Otto UAV Mag project.

Date	Mobilization and Demobilization (days)	Production (km)	Standby (days)	Details
06-Apr	1	0	0	Mobilization
07-Apr	1	0	0	Mobilization
08-Apr	0	0	0	Scouting and tests
09-Apr	0	6.2	1	Heavy snow halted all flights
10-Apr	0	106.2	0	Production
11-Apr	0	0	1	High winds grounded all flights
12-Apr	0	70.5	0	Production
13-Apr	0	0	0	Standby due to snow and rain
14-Apr	0	0	1	Standby due to snow and high winds
15-Apr	0	0	1	Standby due to rain and high winds
16-Apr	0	43.3	0	Production
17-Apr	0	83.4	0	Production
18-Apr	0	102	0	Production
19-Apr	0	0	1	Standby due to snow and high winds
20-Apr	0	107.7	0	Production
21-Apr	0	56	0	Production
22-Apr	0	145.8	0	Production
23-Apr	1	0	0	Demobilization
24-Apr	1	0	0	Demobilization



Canada Silver Cobalt Works

Project: Eby Otto

Advanced Processing and Inversion of Eby Otto UAV magnetics survey

Advanced Processing and 3D Inversion of UAV-Borne Magnetic Survey Data

Report Date	Coordinate System	Prepared By
June 2022	UTM Zone 17N – NAD83	Daniel Card P.Geo, RPGeo – EarthEx Geophysical Solutions

Summary

EarthEx Geophysical Solutions Inc. have produced 3D magnetic inversion models and advanced 2D data imagery using the high-resolution UAV magnetic data collected on the Eby Otto survey block. The methodology and results are discussed in this report.

Project Area

The Eby Otto property is located in the Kirkland Lake region of Ontario, Canada (Figure 1). The Eby Otto grid covers 684.3 l-km with line spacing of 25 m and tie lines flown at 250 m. The line path of the Eby Otto survey is presented in Figure 2.

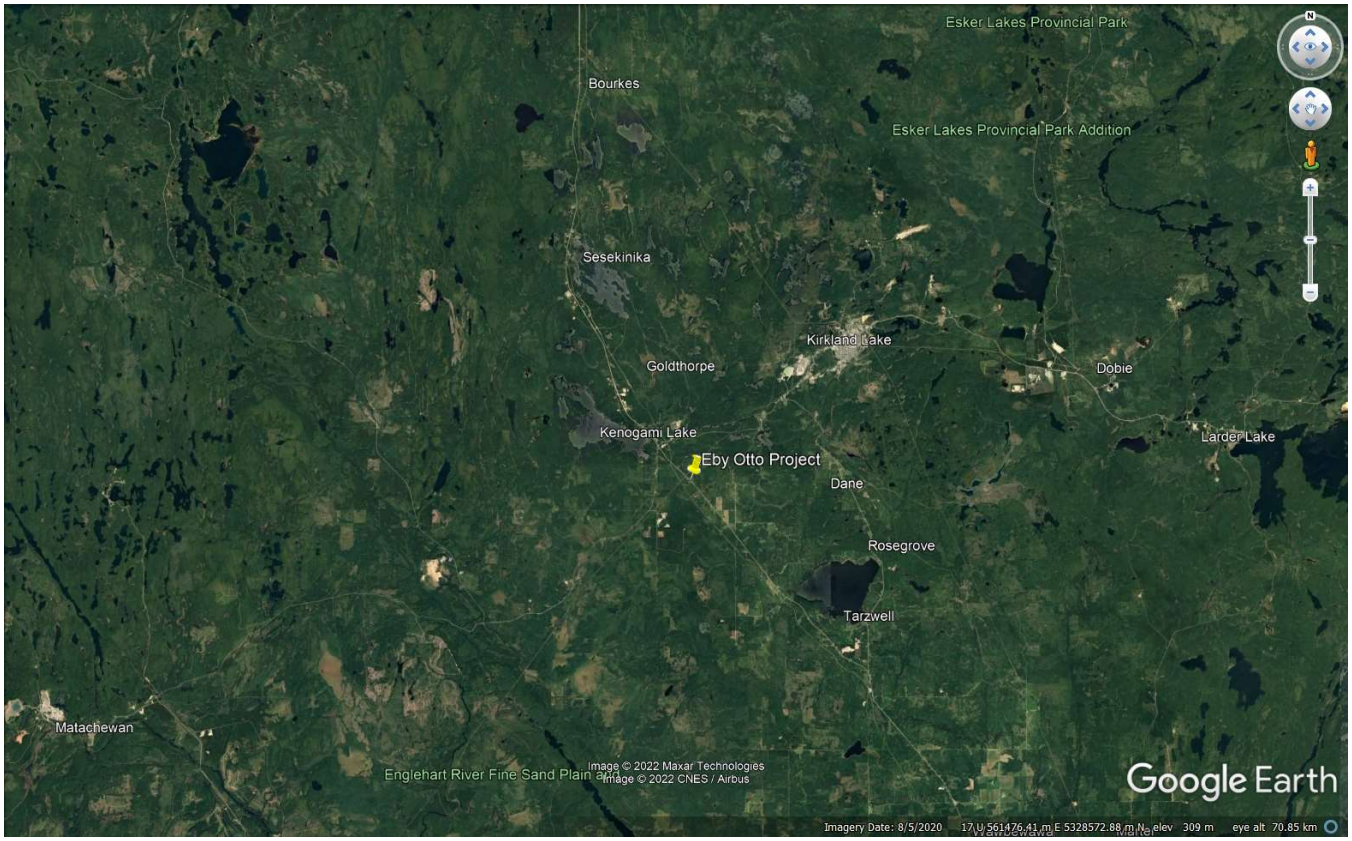


Figure 1: General location of the Eby Otto project.

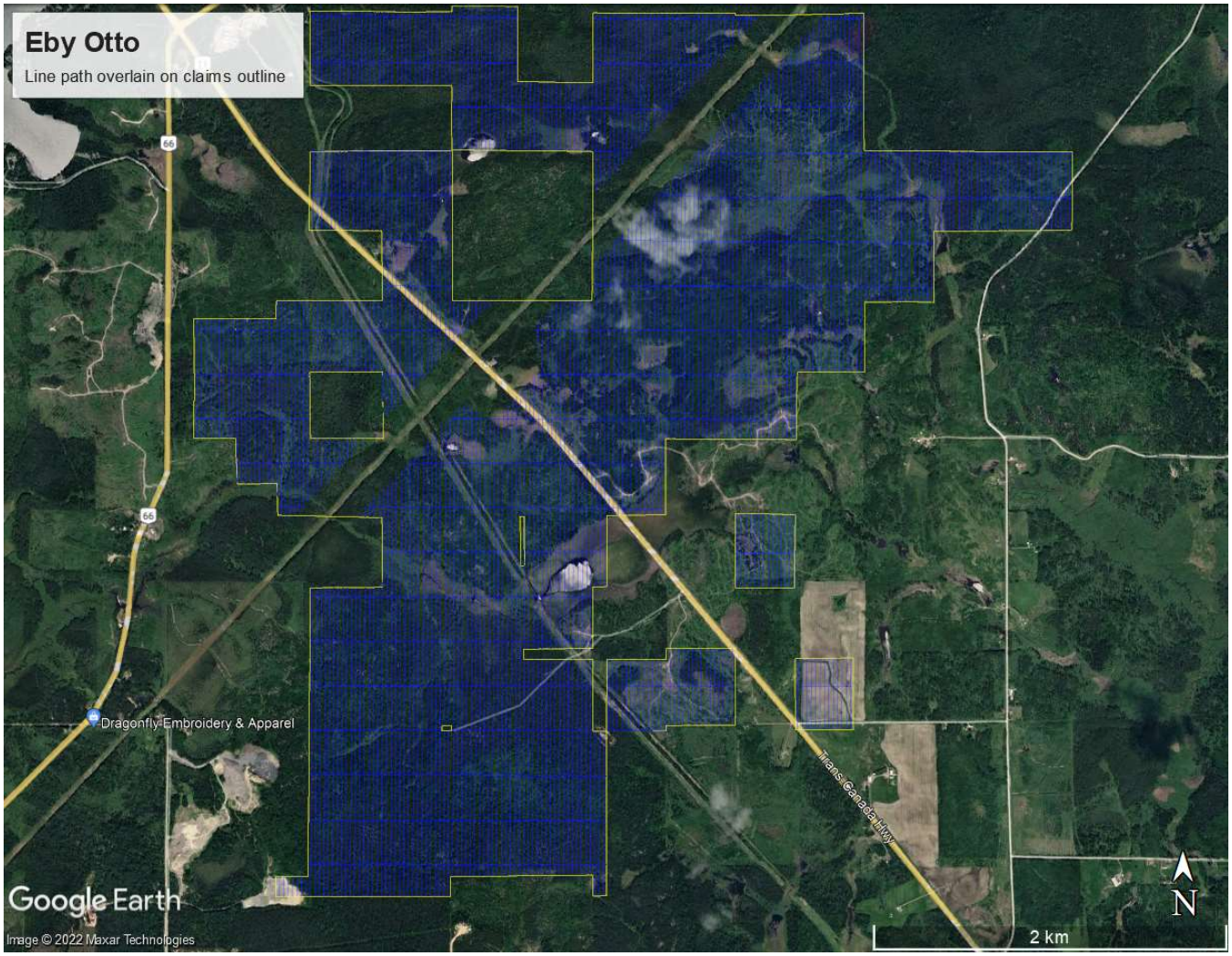


Figure 2: Flight path of the Eby Otto survey block with the claims outline

Table 1: Parameters for the UAV-magnetic survey.

Block ID	Data Format	Date Surveyed	Line Kms	Line Spacing/Tie line Spacing	Mean Terrain Clearance	Azimuth
Eby Otto	GDB	2022-04-06	684.30 lkm	25/250 m	30 m	0°

Methodology

Magnetic Processing and Imagery

The data were treated with several quality control and processing steps as follows:

1. Statistics were calculated, recorded, and analyzed to provide a quick assessment of the magnitude of magnetic anomalism of the data. This is outlined below in Table 2.
2. Appropriate filters and control files were designed based on their parameters such as flight height, line spacing, data quality and orientation of the Earth's magnetic field at the time of surveying.
3. A convolution filter was applied to remove ringing artefacts from levelled data for higher order derivatives. This was applied with the purpose of smoothing out unnecessary noise, while preserving magnetic data and retaining geological information.
4. From the final processed residual magnetic intensity data (RMI), the following grids are produced:
    a. First vertical derivative of the residual magnetic intensity (RMI)_1vd.
    b. Second vertical derivative of the residual magnetic intensity (RMI_2vd)
    c. The residual magnetic intensity reduced to pole (RTP)
    d. First vertical derivative of the reduced to pole (RTP_1vd)
    e. Second vertical derivative of the reduced to pole (RTP_2vd)
    f. Analytic Signal calculated from the residual magnetic intensity (AnSig)
    g. Tilt calculated from the residual magnetic intensity (RMI_TILT)
    h. The horizontal tilt derivative of the residual magnetic intensity (RMI_TILTHD)
5. An imagery suite is produced for each grid with a variety of colour ranges. For example, the RMI is delivered with the following colour ranges:
    a. Non-linear distribution (histogram equalization)
    b. Non-linear with no shading effects
    c. Non-linear in black and white
    d. Linear distribution
    e. Linear with a 0.5% histogram clip
    f. Linear with a 2 or 5% histogram clip
    g. Linear with no shading effects
    h. Normal distribution
6. Two custom EarthEx interpretive views (iView) that maximize structural detail while retaining the intensity of the information generated by:
    a. The RMI, RMI_1vd and RMI_2vd (iView)
    b. The RMI and RMI_TILT (iView #2)

Table 2: Statistics of magnetic anomalism in the dataset.

Block ID	IGRF nT	IGRF Inclination (°)	IGRF Declination (°)	Minimum nT	Maximum nT	Mean nT	Range nT	Standard Deviation nT
Eby Otto	55265	72.5°	-10.8°	-964	20460	311	21424	1241

3D Magnetic Inversion

A series of inversions were completed using VOXI-3D-susceptibility inversion code. These inversions implemented one mesh with a cell size of 21x21x10.5 m (X,Y,Z) for Eby Otto which allowed the entire UAVMAG data set to be inverted in a single mesh. The data sets can be further divided into sub-sets to specific areas of interest to improve the model resolution in the near-surface for those areas.

The input magnetic data for the inversion is the final RMI grid for Eby Otto. The input digital elevation model (DEM) is a provided by the Shuttle Topography Radar mission (SRTM 1 Arc Second) available online, which was used to extend coverage of the DEM and provide elevation data over the padding of the inversion mesh.

Inversion parameters were optimized, including error tolerance, weighting, focussing constraints and detrending of data.

Results and Deliverables

Advanced Magnetic Processing and Imagery Products

High-quality images of the bedrock magnetic signatures have been produced the Eby Otto survey block. A summary of the various magnetic imagery products is shown in Table 3 and described below.

Interpreter's Views

In addition to the common magnetic imagery provided, two hybrid magnetic images have been processed to aid in litho-structural interpretation. These "interpreter's views" are named iView1 and iView2 and are shown in Figure 4 and Figure 4 respectively.

The first, iView1, employs elements from the first and second order differentials as well as a non-linear colour palette of the total magnetic field to provide clear definition of structural breaks/flexures/deformations, while maintaining good delineation of lithological boundaries.

The second, iView2, makes use of the tilt angle and a linear colour palette of the total magnetic field. This product is good for identifying the locations of strongest anomalism as well as tracing stratigraphy over longer distances. One caveat of this image is that it tends to connect and produce the appearance of continuity in strata which may in fact have breaks and offsets. For this reason, structural interpretation at the target scale should be done using iView1 rather than iView2.

Table 3: Table of delivered magnetic imagery products.

Magnetic Imagery	Vector Products	Enhanced Mag Imagery	Mag Image Maps	Interpreter's View Maps
✓	✓		✓	✓

Magnetic Imagery Products

- Data grids in Geosoft .GRD format. Additional details on the file nomenclature are available in Appendix A.
  - RMI – Magnetic data as measured after removal of the International Geomagnetic Reference Field (IGRF), diurnal variations and levelling. Residualizing the data moves the mean of the data set closer to zero, making the amplitudes of the anomalies more intuitive to quantify. The imagery is identical to a TMI grid (total magnetic intensity), but the values on the colour bar are shifted.
  - RMI_Fine: The gridded total magnetic field data with a finer cell size (2 m) to account for the high density along line data.
  - RMI_1vd – First derivative of the RMI, which is effective at bringing out the edges of magnetic features in the RMI data.
  - RMI_2vd – Second derivative of the RMI, which further enhances the edges of magnetic features in the RMI.
  - RTP – Magnetic data processed to account for the inclination of the Earth's magnetic field to centre the anomalies over their source.
  - RTP_1vd – First derivative of the RTP, which is effective at bringing out edges of the magnetic features in the RTP data.

    - RTP_2vd – Second derivative of the RTP, which further enhances the edges of magnetic features in the RTP.
    - AnSig – Another approach to centre the anomaly over the source using absolute value of the RMI derivative.
    - RMI_TILT – A generalized derivative that treats weak magnetic bodies with the same weight as strong magnetic bodies.
    - RMI_TILTHD – A by-product of calculating the TILT. Which shows the slope of the response in the horizontal directions.
- Georeferenced imagery of the data grids with a variety of colour stretches in geotiff format (.TIF). Certain colour stretches include:
    - No shade – The images do not contain any shading effects.
    - Black and white – The images are in black in white instead of color. These images provide a good back drop with other colour images superimposed.
    - Non-linear – Images uses a non-linear distribution of colour to maximize the range of features visible.
    - Linear – Images use a linear distribution of colour to represent the actual range of data values in the image. This is particularly useful in identifying the strongest features in the image.
    - Normal – Images uses a normal distribution of colour to represent the data centered about the input mean value with the range covering x standard deviations on both sides of the input mean. This is particularly useful when analysing particular points of interest within the map.
    - X% clips: 0.5%, 2% or 5% clips are used to eliminate outliers in the data set to allow for a better distribution of colour.
- Colour stretch definitions in .ZON format.

Vector Products

- Survey line path delivered in .DXF format.
- Contours of the RMI, RMI_1vd and RTP delivered in .DXF format.

Map Products

- The following images have been delivered as maps in PDF format:
    - Interpreter's View hybrid magnetic imagery (iView and iView #2), which are designed to enhance structural details in the magnetic data. One image (iView) is a hybrid image of the RMI and the first and second derivatives of the RMI (RMI_1vd and RMI_2vd) shown in Figure 4 for Eby Otto. The other image (iView #2) is a hybrid image of the RMI and the RMI tilt derivative (RMI_TILT) shown in Figure 5 for Eby Otto.
    - RMI in linear and non-linear colour stretch.
    - RMI_1vd in non-linear colour stretch.
    - RMI_2vd in black and white, non-linear colour stretch.
    - AnSig in linear colour stretch.
    - RMI_TILT in black and white, non-linear colour stretch.

3D Magnetic Inversion Products

Broadly robust inversion results have been achieved and the following suite of deliverables have been produced:

- 3D Magnetic Susceptibility Inversion - 3D susceptibility model in..geosoft_voxel, UBC and .XYZ (ASCII) format. The statistics of the magnetic inversions are presented in Table 4.
- Isosurfaces - 3D surfaces generated from 3D inversion models of constant magnetic susceptibility and amplitude in .DXF format.
- Horizontal Sections - Horizontal sections of constant elevation through the 3D ground magnetic susceptibility inversion model in Geosoft .GRD and .TIFF format of the 3D inversion at: 325, 300, 250, 200, 100, 0, -200 and -500 meters elevation ASL.
- Geoscience Analyst project and free viewer installer – Susceptibility model figures have been generated from a 3D Geoscience Analyst project, which is delivered along with this memorandum. An overview image taken from Geoscience Analyst for Eby Otto is provided in Figure 6. 2D figures can fall short when trying to illustrate 3D bodies, especially with varying orientations. For this reason, it is important that 3D geophysical models be viewed in 3D, either by importing the DXF to your preferred 3D software, or by looking at the Geoscience Analyst project provided, along with the free version of this software.
- Geosoft 3D project with voxels and isosurfaces preloaded in .geosoft_3dv format.
- 3D project to be imported in LeapFrog with voxels and isosurfaces preloaded in .OMF format.

Table 4: Statistics of magnetic inversions

Voxel ID	Minimum Value	Maximum Value	Mean	Range	Standard Deviation
Eby Otto	-0.3321	2.6035	0.0084	2.9356	0.0644

An exclusion zone was established around the high-voltage powerline present on site running in the NE-SW direction, in order to ensure safe surveying. An interpolation algorithm has been used to fill the gap in the images and this area is shown as somewhat faded in the iview1 and 2 images below (and their composite images) to illustrate where the interpolation has been performed. Both interpolated images (sutured) and non-interpolated images have been provided as deliverables.

Hazards in the NW-SE direction included the Trans-Canada highway and lower powerline running along it, which were addressed by programming an obstacle, which instructs the drone to fly higher over that area. A stippled pattern resulting from that powerline is visible in the data and should not be interpreted as having a geological source.

Recommendations:
The Eby-Otto project covers a structural trend and alteration zone known as the Eby-Otto fault zone, which lies just south of the prolific Cadillac Break. Existing structural mapping appears coarse relative to the abundant detail revealed by the UAV magnetic survey. Fine details along the Eby-Otto fault and alteration zone can be seen clearly in the data (Figure 3).

It is recommended to complete a full litho-structural interpretation of the surveyed area, to provide the clearest geological information that can be derived from these data. We can make recommendations for specialist litho-structural interpreters to aid in this work, if desired.

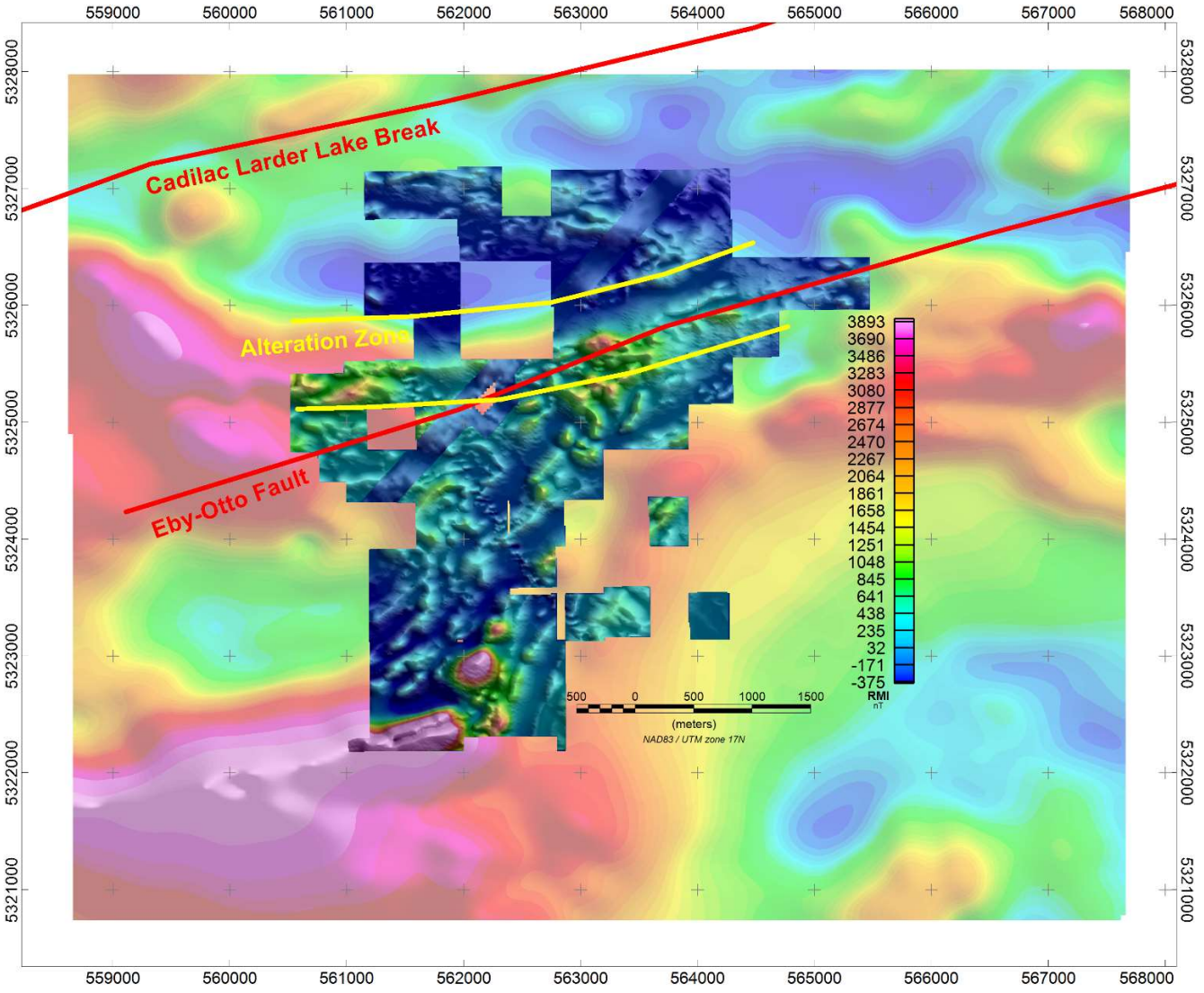


Figure 3: iView2 image overlaying historic mag data, with client provided structural trends displayed. Significant additional structural detail is revealed by the UAV magnetic survey and a full litho-structural interpretation will likely reveal a great deal about the geology.

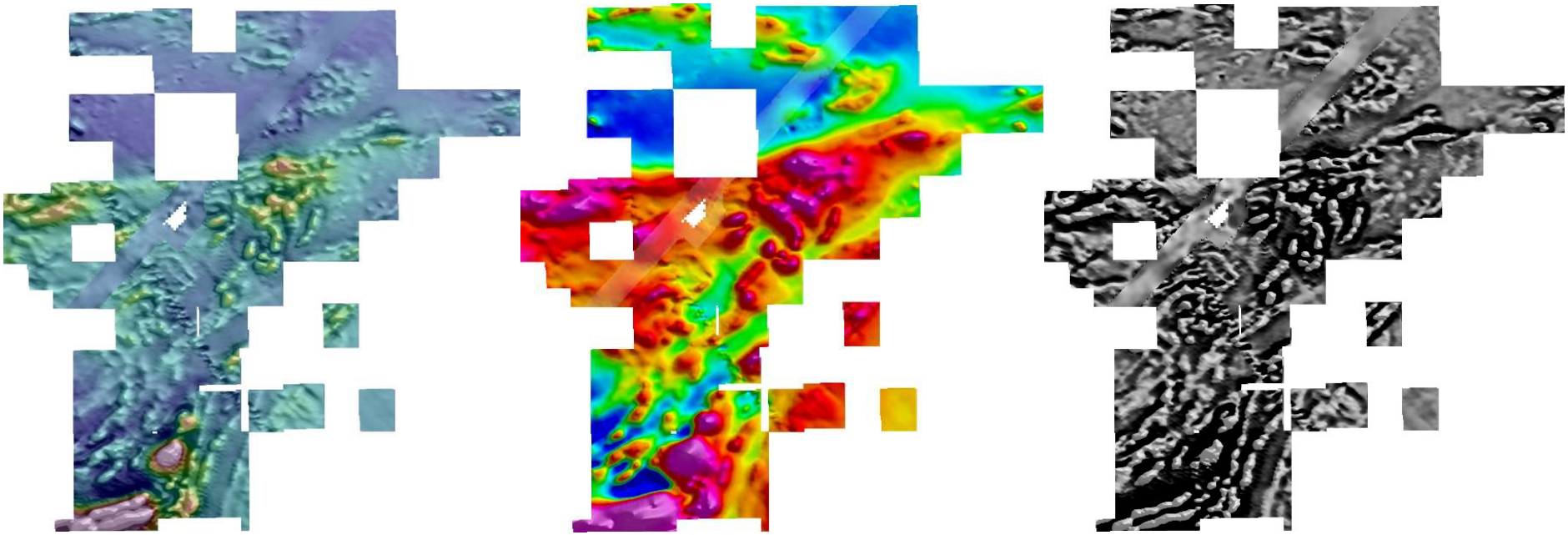


Figure 4: ***LEFT:*** *iView (interpreter's view) of the Eby Otto. The iView is a hybrid image of the RMI, RMI_1vd and RMI_2vd.* ***MIDDLE:*** *Residual magnetic intensity for Eby Otto using a non-linear colour stretch.* ***RIGHT:*** *Second vertical derivative of the residual magnetic intensity for Eby Otto using a log-linear, black and white colour stretch.* ***Note:*** *that the RMI defines lithological boundaries well and the black and white 2vd defines structures well. The iView1 as a hybrid aims to present these details from both images in a single view, making it an excellent backdrop for litho-structural interpretation.*

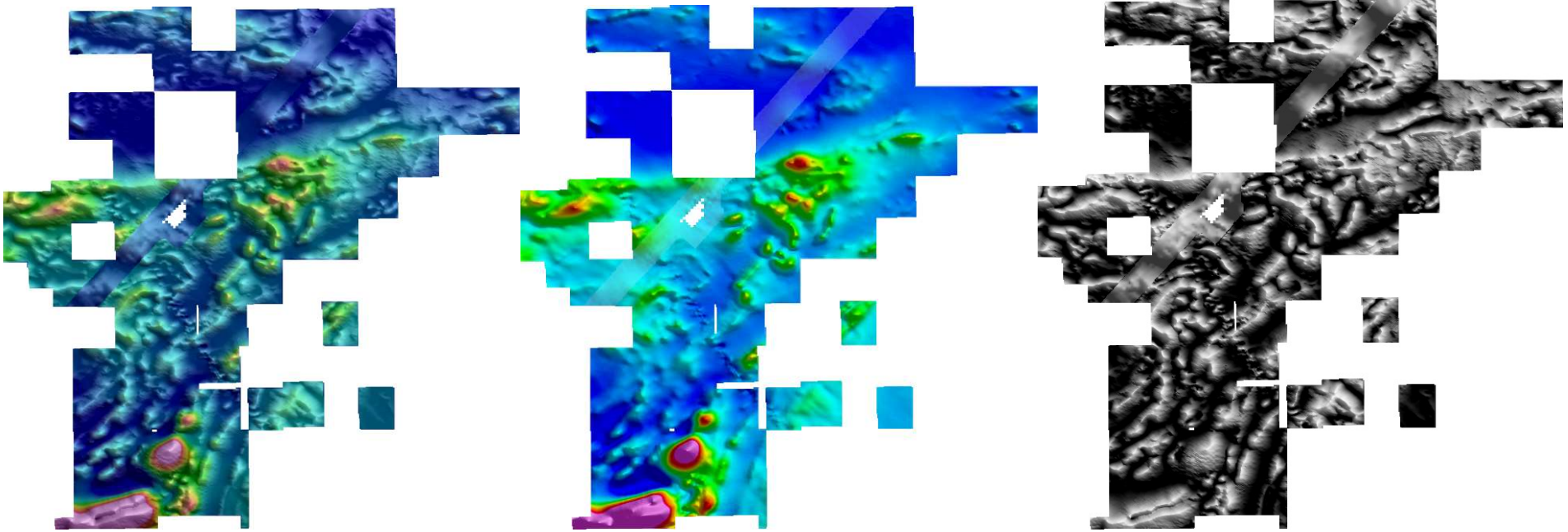


Figure 5: ***LEFT:*** *iView2 (interpreter's view #2) of the Eby Otto UAVMAG. The iView #2 is a hybrid image of the RMI and RMI_TILT.* ***MIDDLE:*** *Residual magnetic intensity for Eby Otto using a linear 2% clip colour stretch.* ***RIGHT:*** *Tilt derivative of the residual magnetic intensity for Eby Otto using a non-linear, black and white colour stretch.* ***Note:*** *The iView2 is an excellent tool for tracing lineaments, even where they become more subtle in the RMI. However, when searching for offsets/breaks and other structural deformations, the iView2 may sometimes show continuity where there should be a break. The iView1 and 2vd images should be referred to regularly when interpreting deformation.*

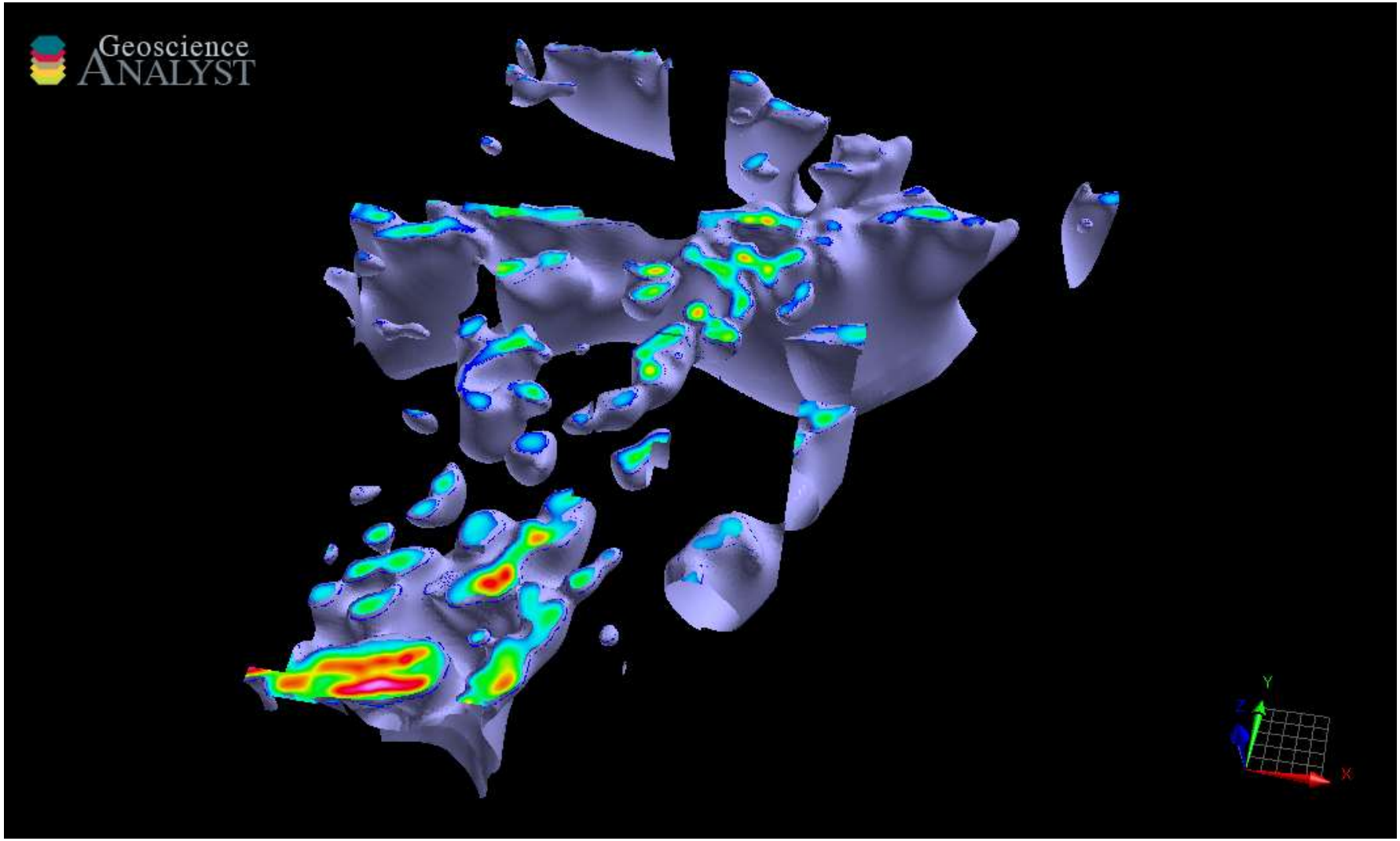
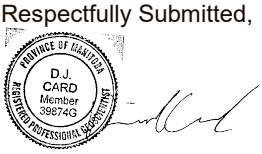


Figure 6: Inclined view from above the inversion results for Eby Otto. Displayed in the image are: 1. An isoshell in transparent blue, which outlines magnetic sources with a magnetic susceptibility of 0.004433 SI. Isosurfaces outlining areas of numerous different strengths have also been delivered. 2. A multi-colour voxel horizontal slice through the isoshell.

The results described in this memorandum has been created, processed using data acquired during the Eby Otto UAV magnetic survey. Processing methodology has been defined specifically to meet the objectives of this project. Any results presented in this report have been prepared from the geophysical data referred to in this document.

We thank you for allowing us to be a part of your exploration program and aim to provide services that will accelerate your path to discovery.

Respectfully Submitted,



Daniel Card, P.Geo, RPGeo

President and principal consultant

EarthEx Geophysical Solutions Inc.

APPENDIX A - File Nomenclature and Abbreviations

RMI – Residual Magnetic Intensity: This is the magnetic data as measured by the system after removal of the International Geomagnetic Reference Field (IGRF), diurnal variations and levelling.

AnSig – Analytic Signal: An approach to centering the anomaly over its source, the AnSig is a derivative product that takes the absolute values of the amplitudes of the magnetic response derivatives, eliminating the negative tail of the magnetic bipolar response.

RMI 1vd – First vertical derivative of the RMI: This is a filter applied to the data that picks up on areas of steep gradients in the data. It is very effective at picking out and enhancing edges. It should be noted that this process may also enhance noise in the data set.

RMI 2vd – Second vertical derivative: This product does a higher order derivative and further focusses in on edge features. It should be noted that the additional highlighting of fine features like edges further highlights the noise present in the data.

RMI TILT – The tilt derivative: The TILT angle is a generalized derivative product which is as sensitive to horizontal and vertical derivatives and serves to treat weakly magnetic bodies with the same weight as strongly magnetic ones.

RMI TILTHD – The horizontal derivatives of the TILT: A by-product of calculating the TILT. Which shows the slope of the response in the horizontal directions.

RTP – Reduced to Pole: RMI data have been processed to account for the inclination of the earth's magnetic field. The result is that the anomalies are now centred over their source. Depending on the quality of the input data, some artefacts may appear as a result of the RTP calculation.

RTP 1vd – First vertical derivative of the RTP: This is a filter applied to the data that picks up on areas of steep gradients in the data. It is very effective at picking out and enhancing edges. It should be noted that this process may also enhance noise in the data set.

Colour Stretch

NS – The image has been produced with no shading effects.

NL – Non-Linear: The image uses a non-linear distribution of colour, also known as histogram equalization or HEQ. Images produced like this assign an equal number of pixels to each colour in the colour stretch, maximizing the use of the colour palette to allow visualization of greatest range of features.

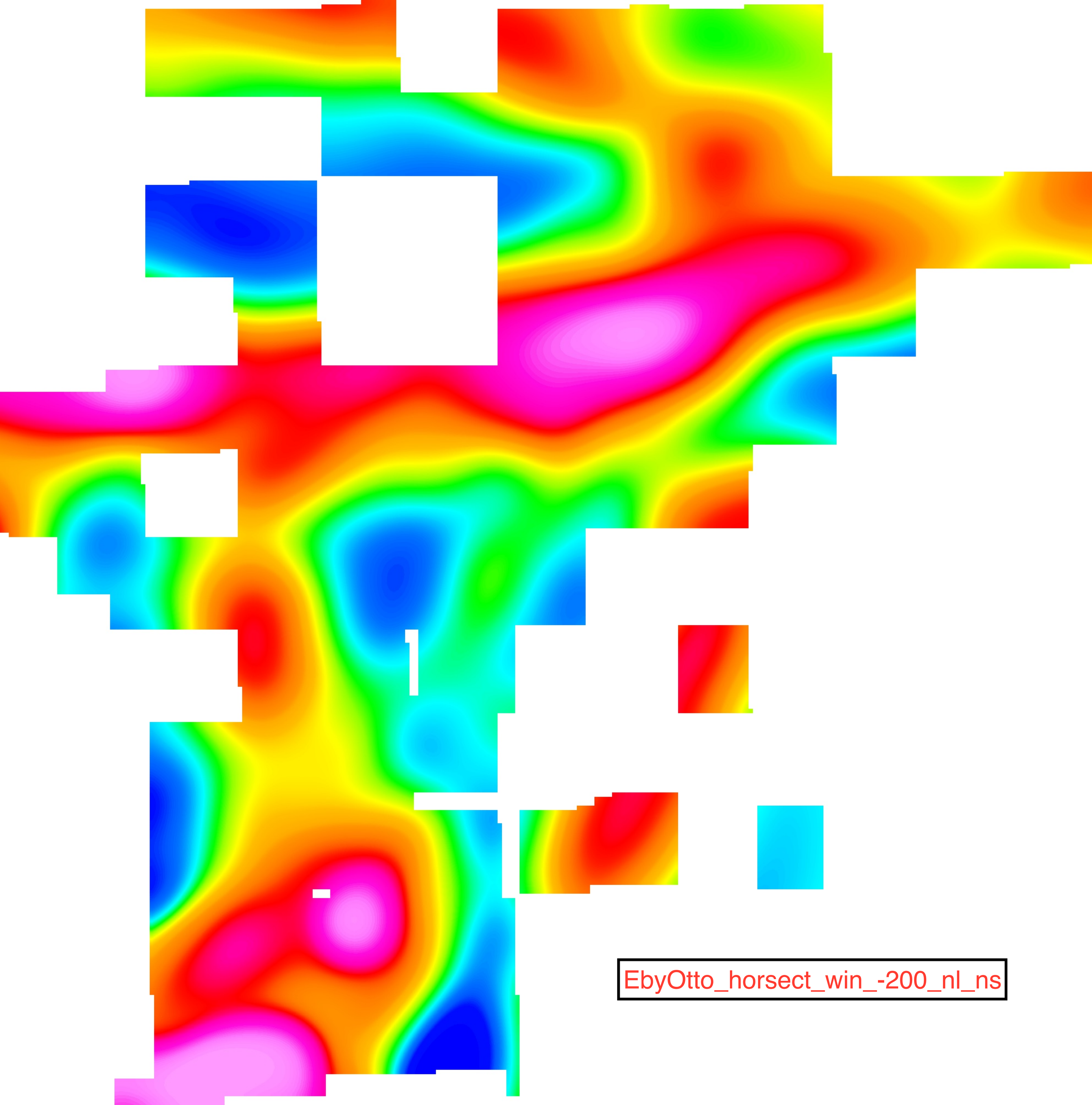
Norm – Normal: Images uses a normal distribution of colour to represent the data centered about the input mean value of the dataset with the range covering x standard deviations on both sides of the input mean. This is particularly useful when analysing points of interest within the map.

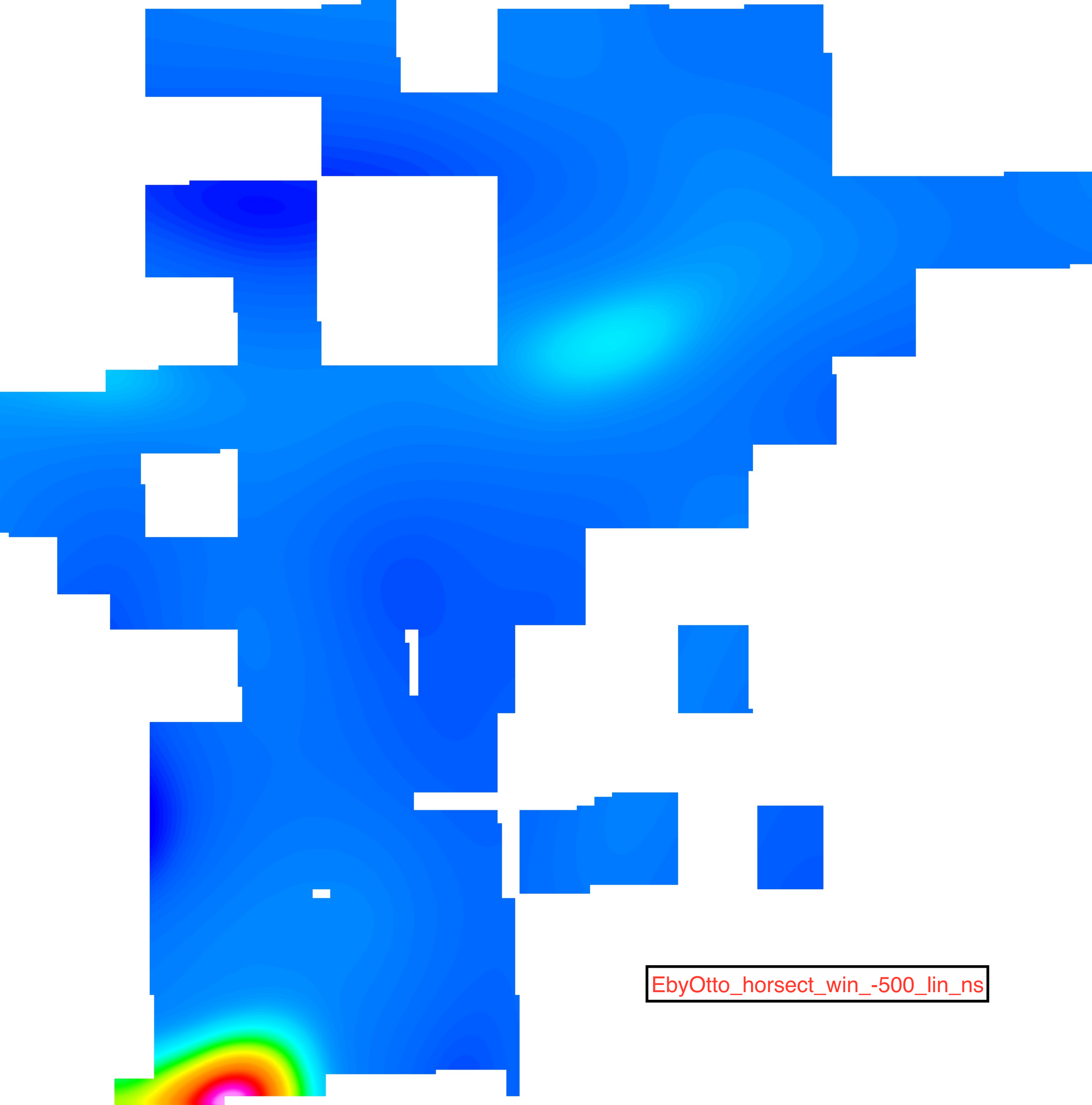
Lin – Linear: The image uses a linear distribution of colour. In these images the range in colour is a more accurate representation of the range in data values within the image. They allow accurate assessment of the strongest features in the grid.

0_5pct, 2pct, 5pct etc – Histogram clip percentage: Most data sets contain outliers, which can result in poor distribution of the colours in a colour stretch, especially a linear one. These histogram clipped images set the colour range to go from blue at 0.5% of the histogram to pink at 99.5% of the histogram (0_5pct), 2% to 98% (2pct) or 5% to 95% (5pct) to prevent outliers from skewing the colour stretch and to make the range of features in the bulk of the data more clearly defined and easier to differentiate.

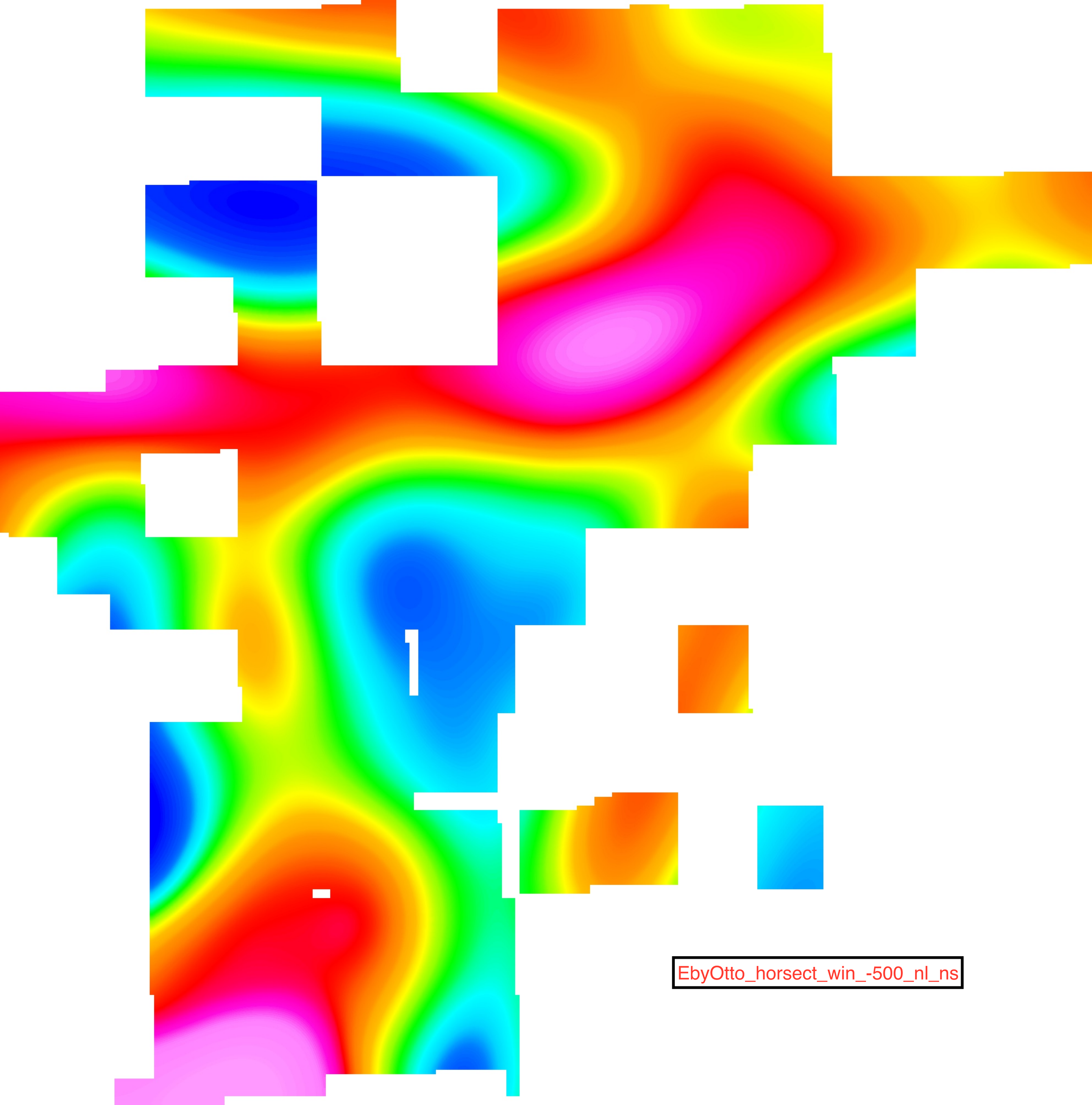
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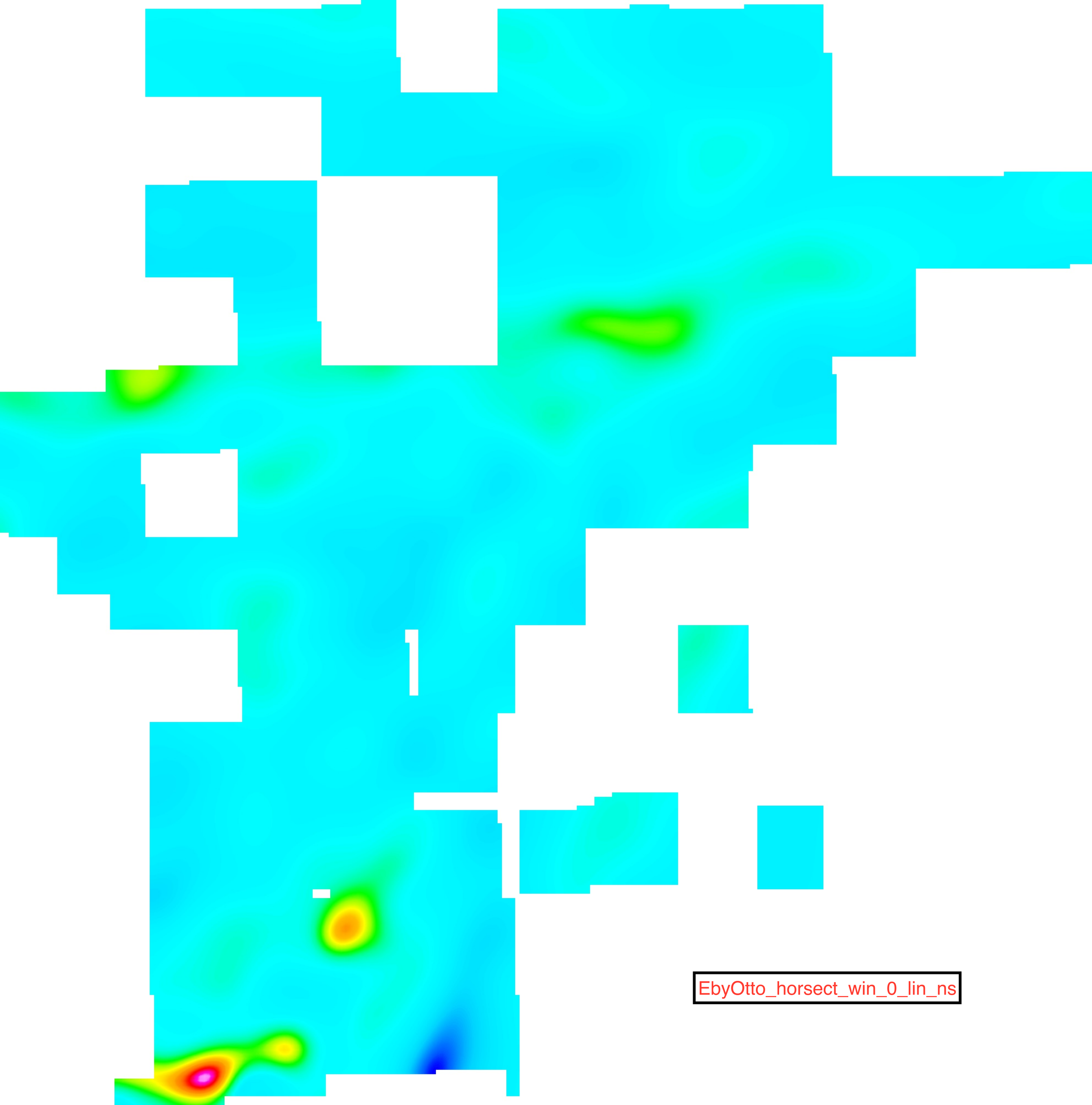

EbyOtto_horsect_win_-200_nl_bw_ns

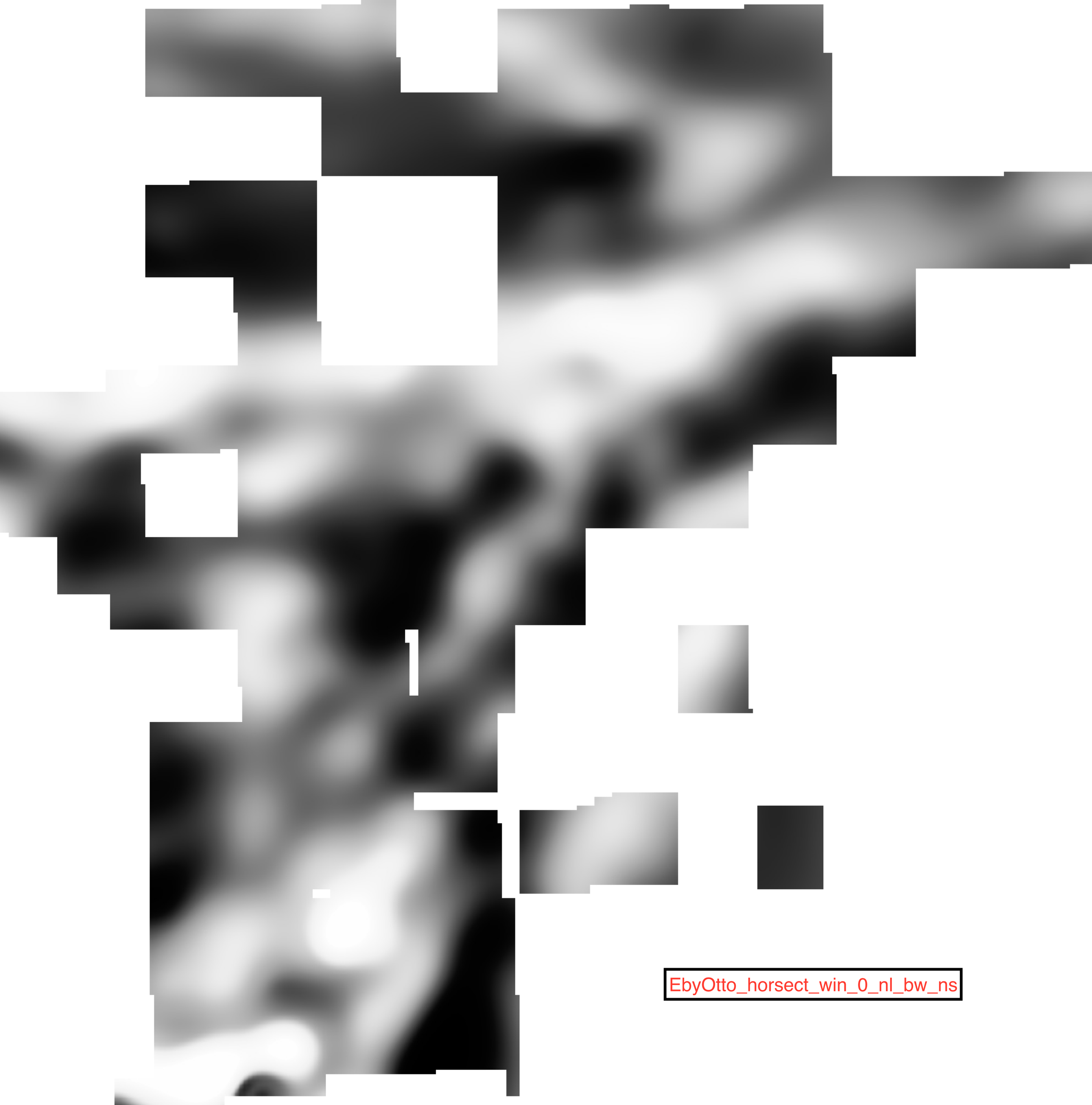

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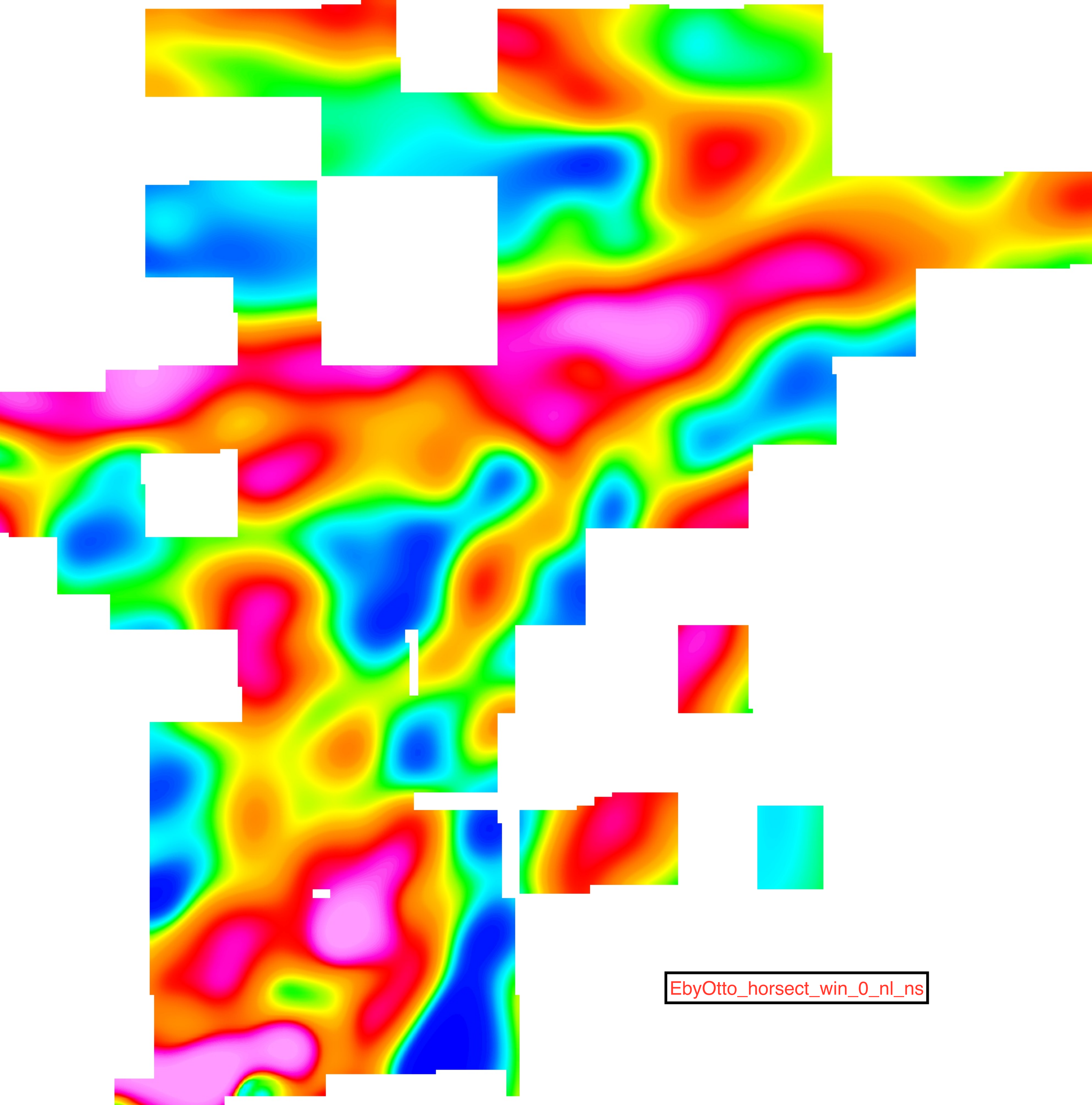

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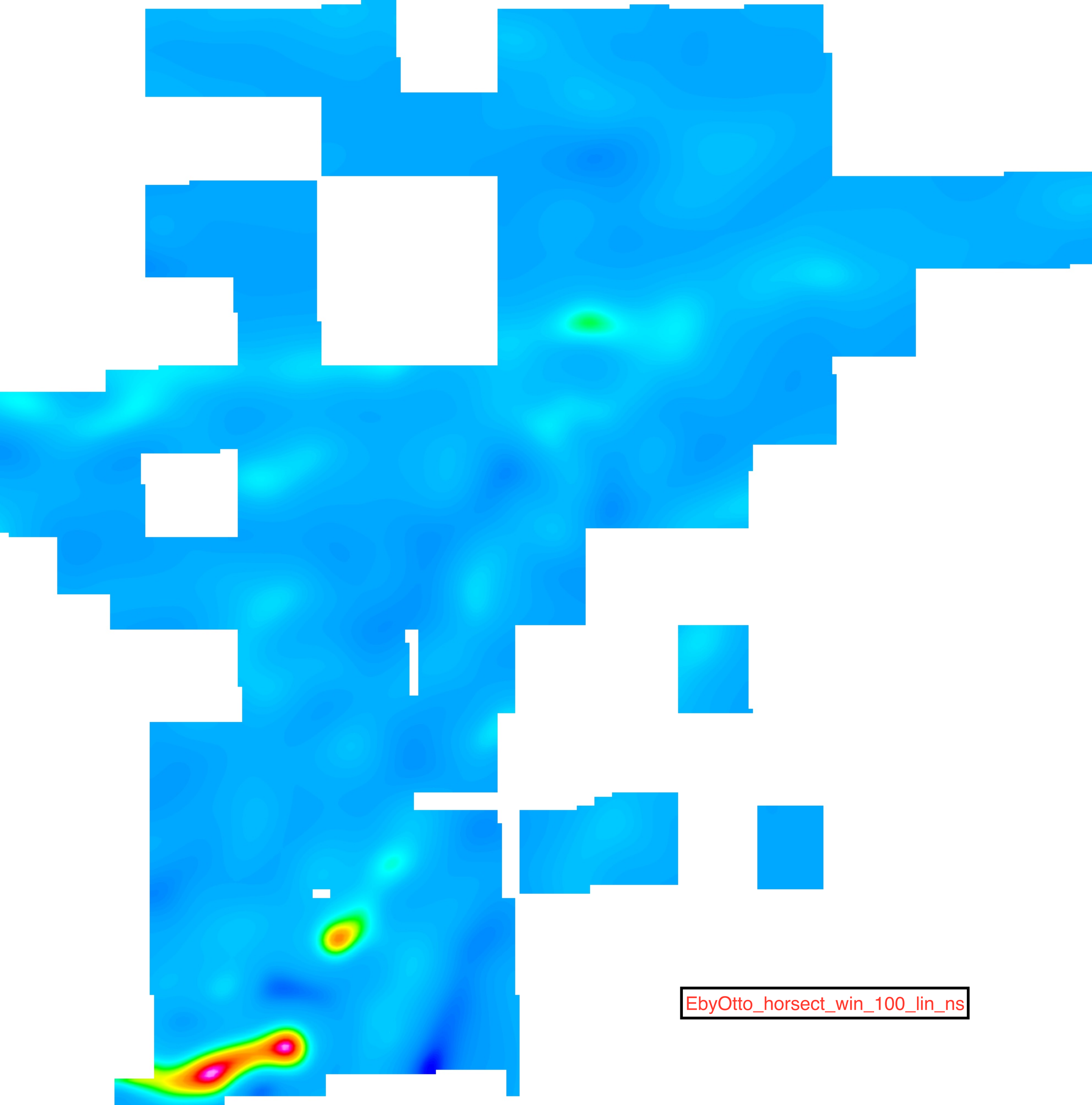

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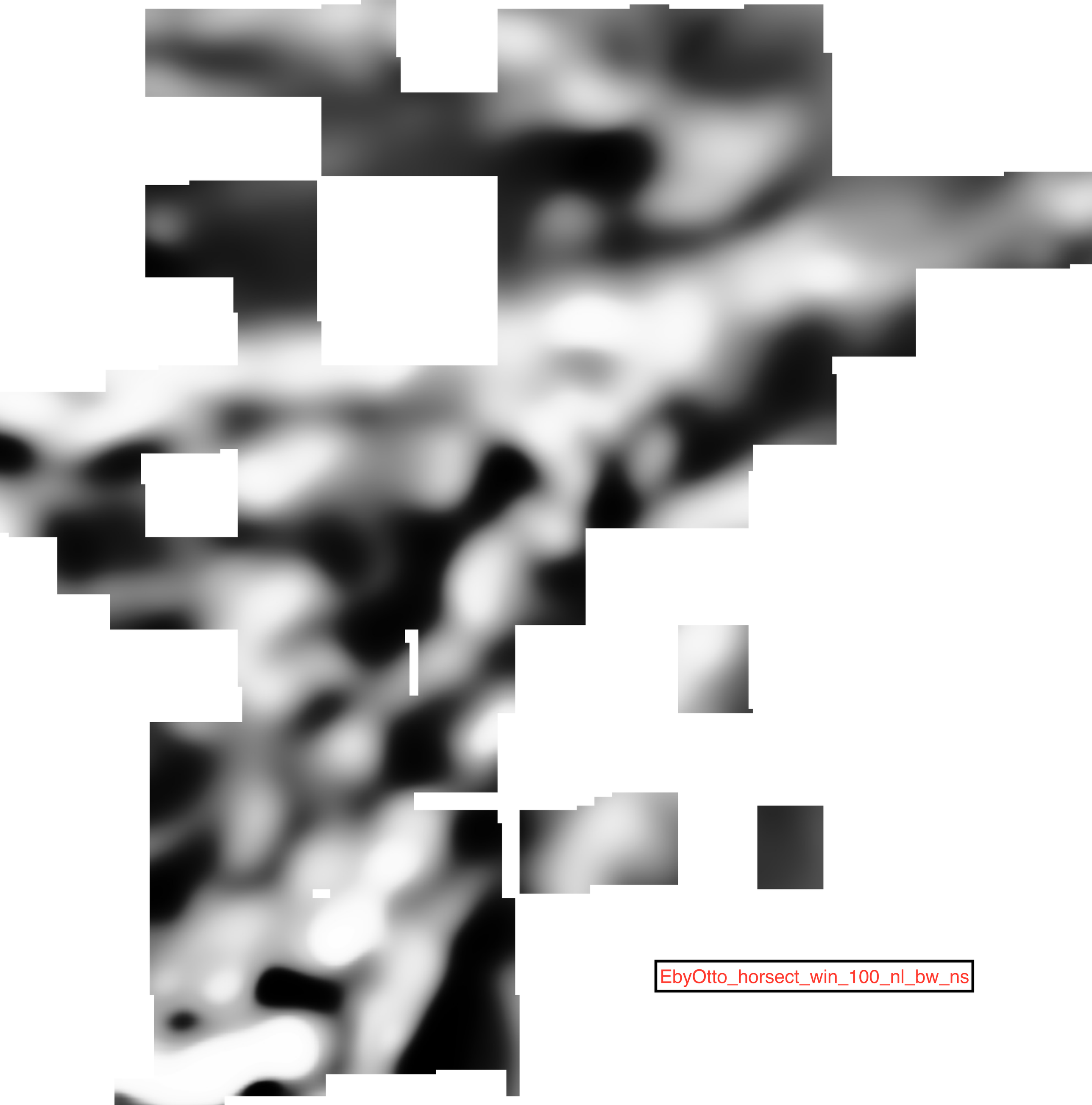

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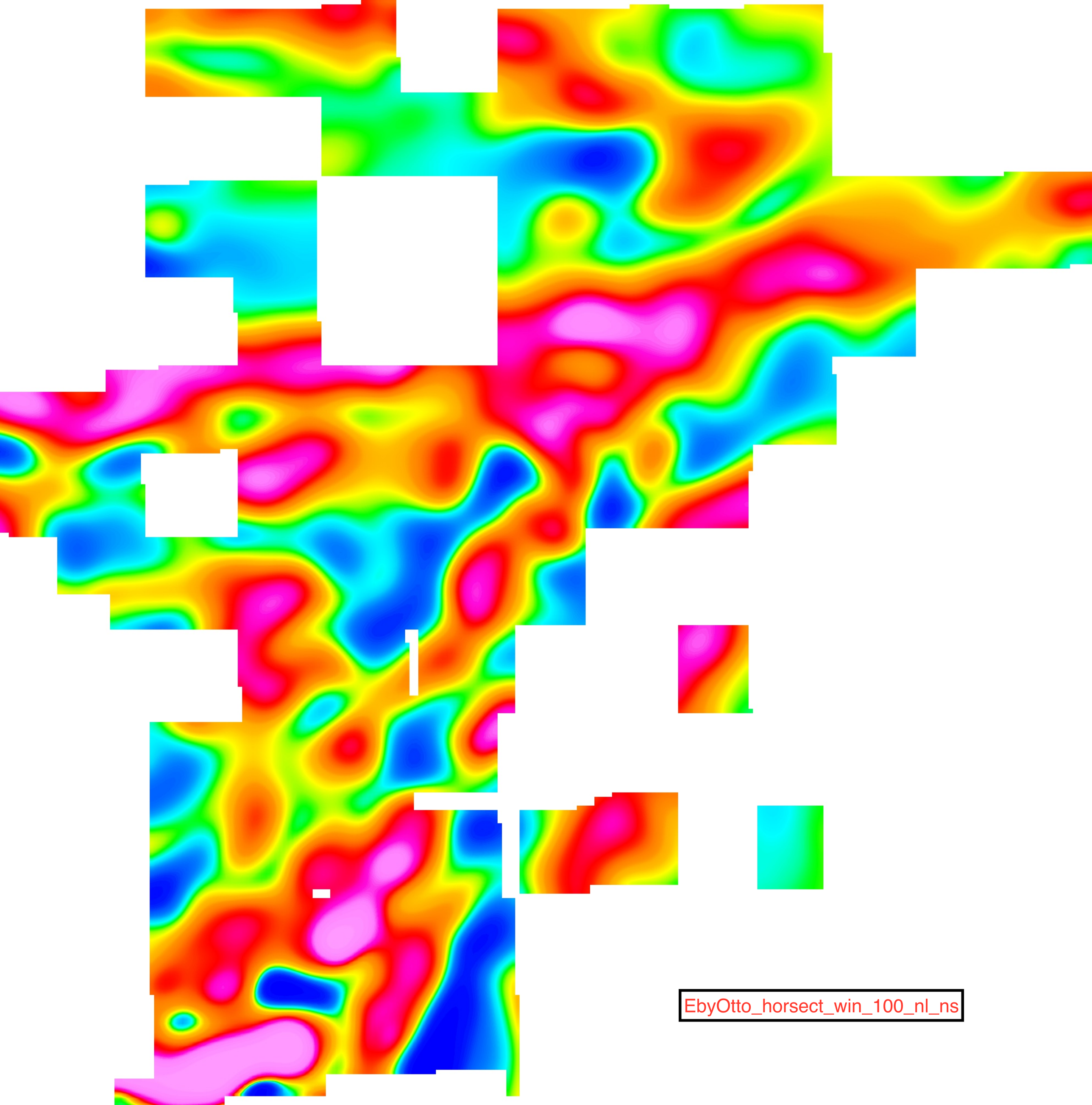

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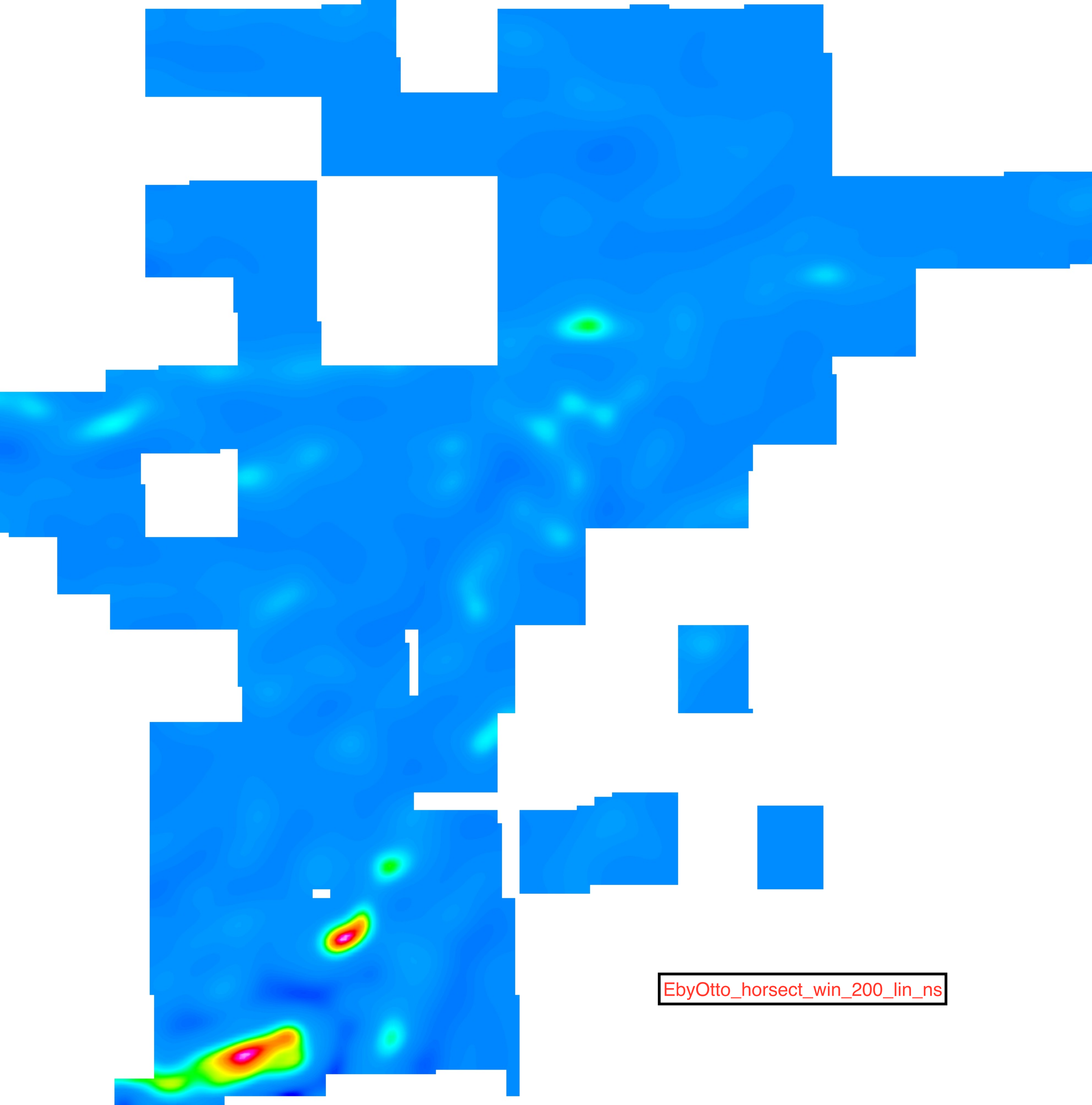

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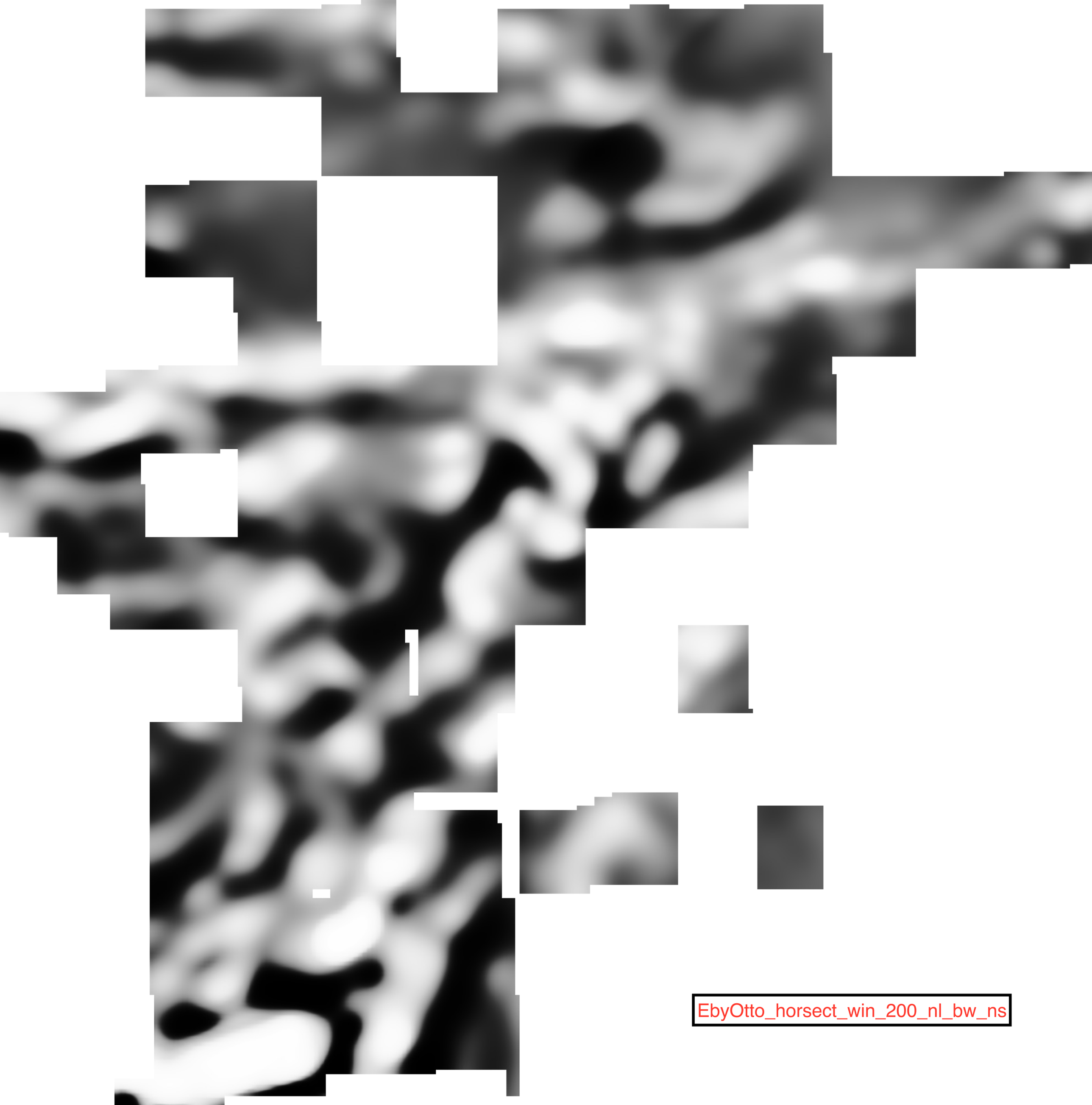

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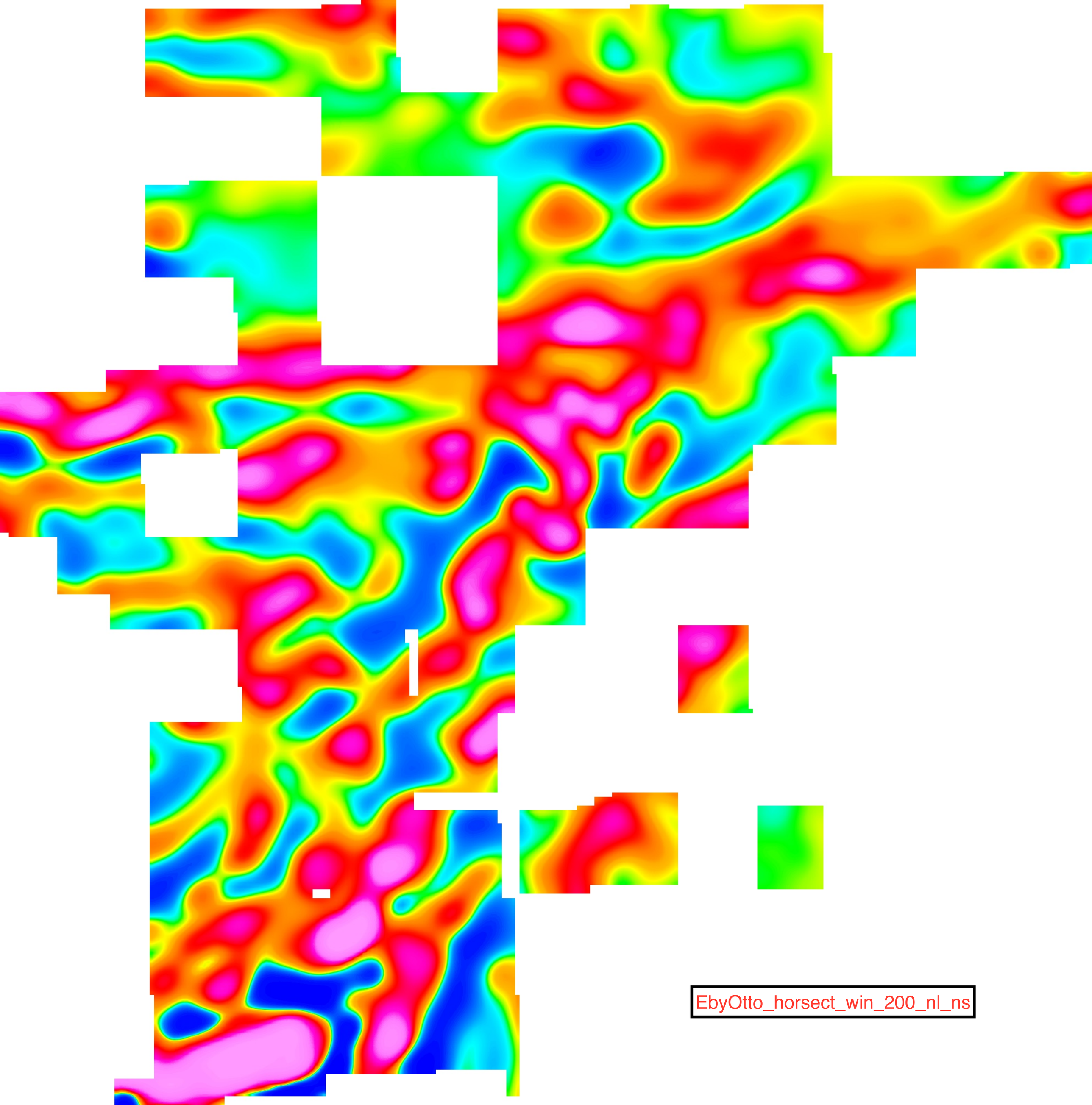

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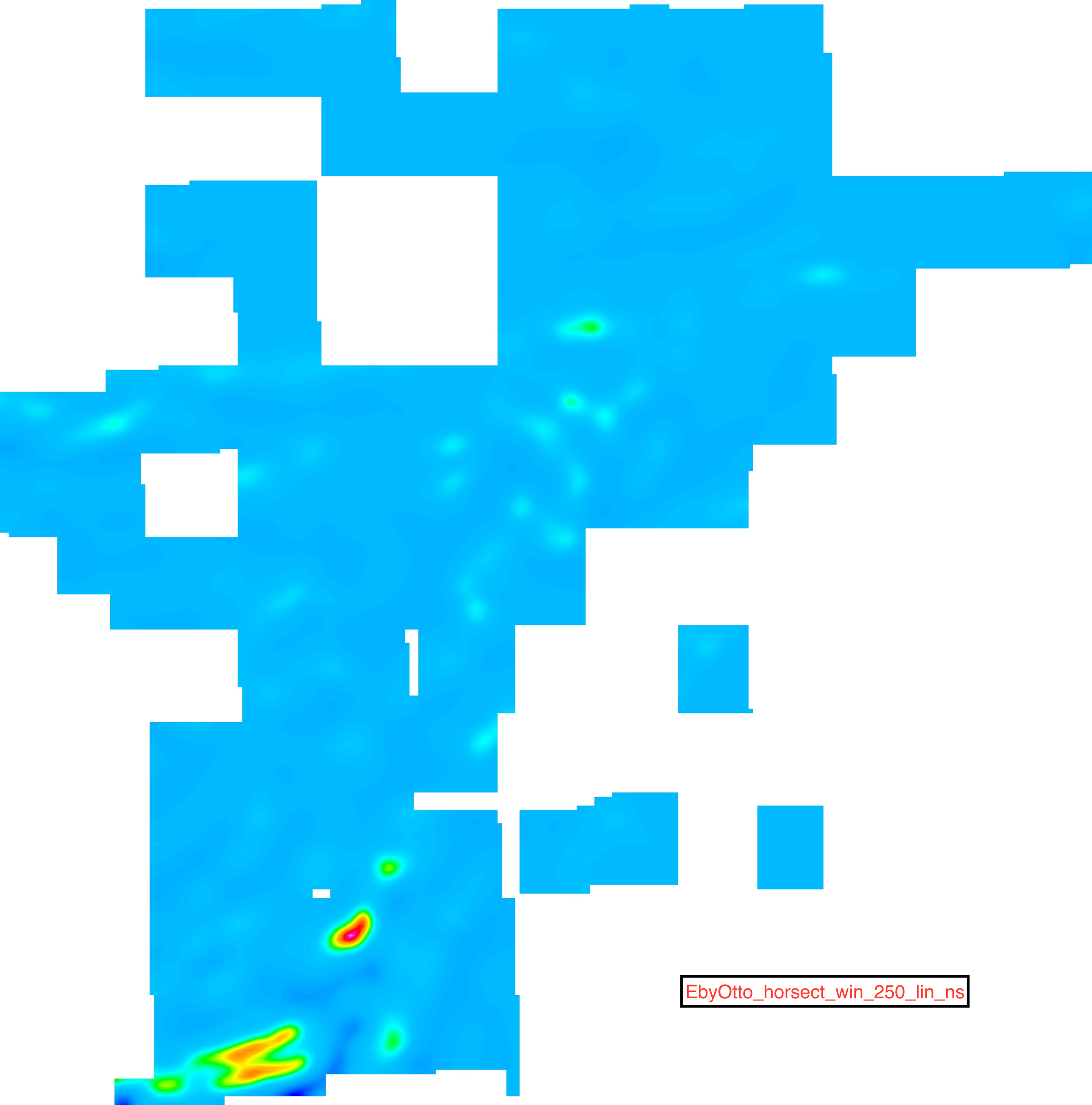

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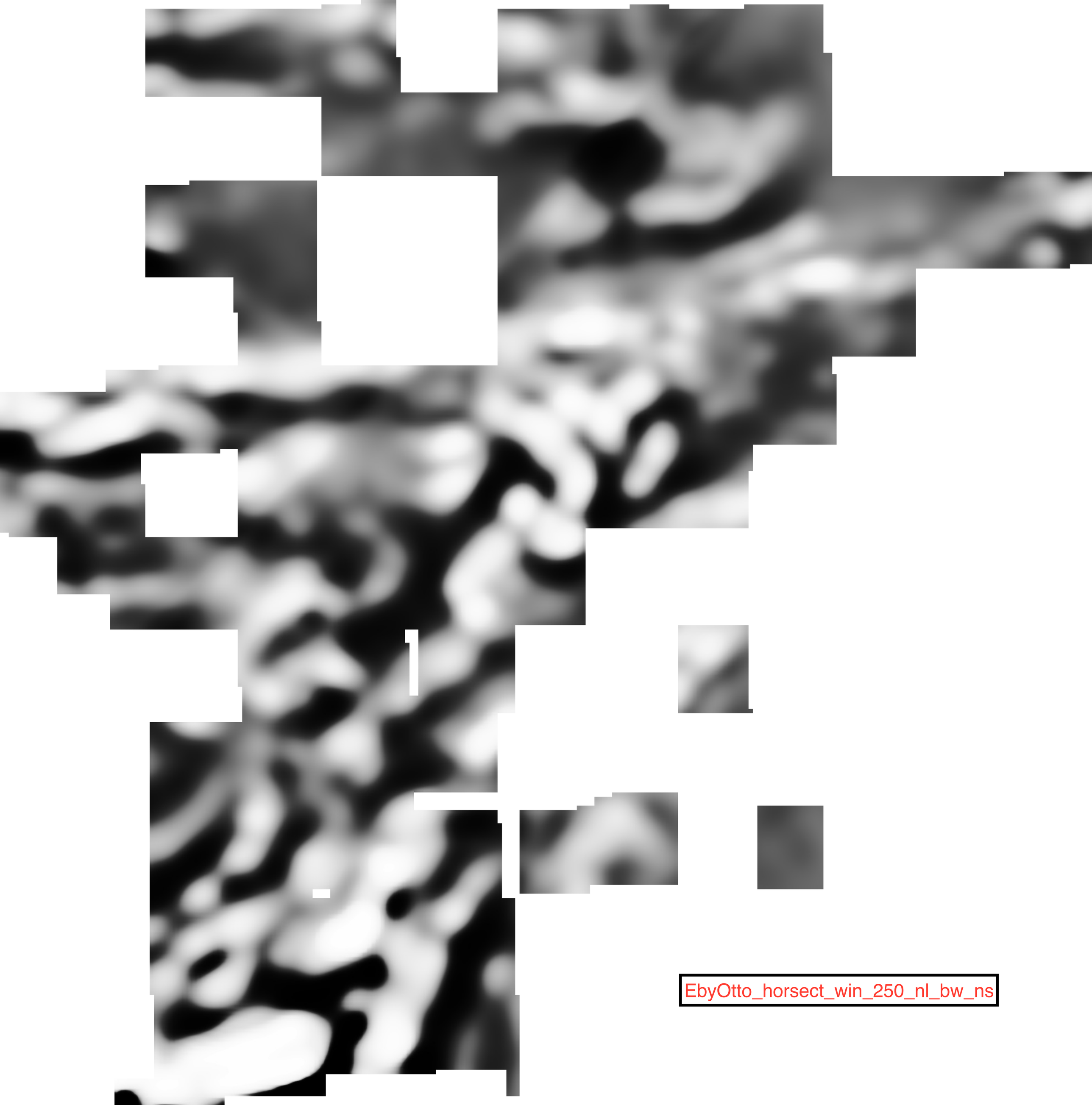

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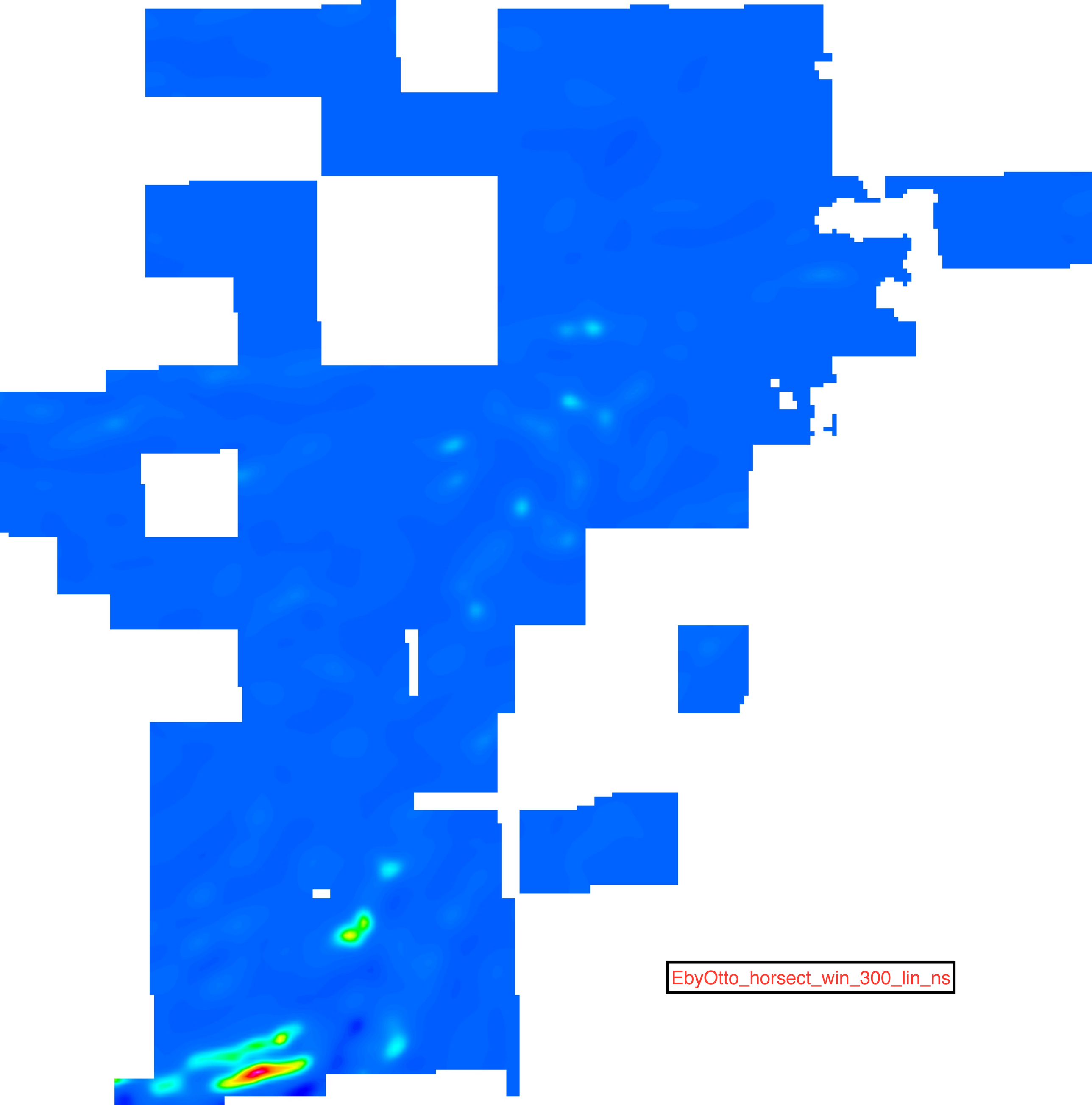

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EbyOtto_horsect_win_200_nl_ns

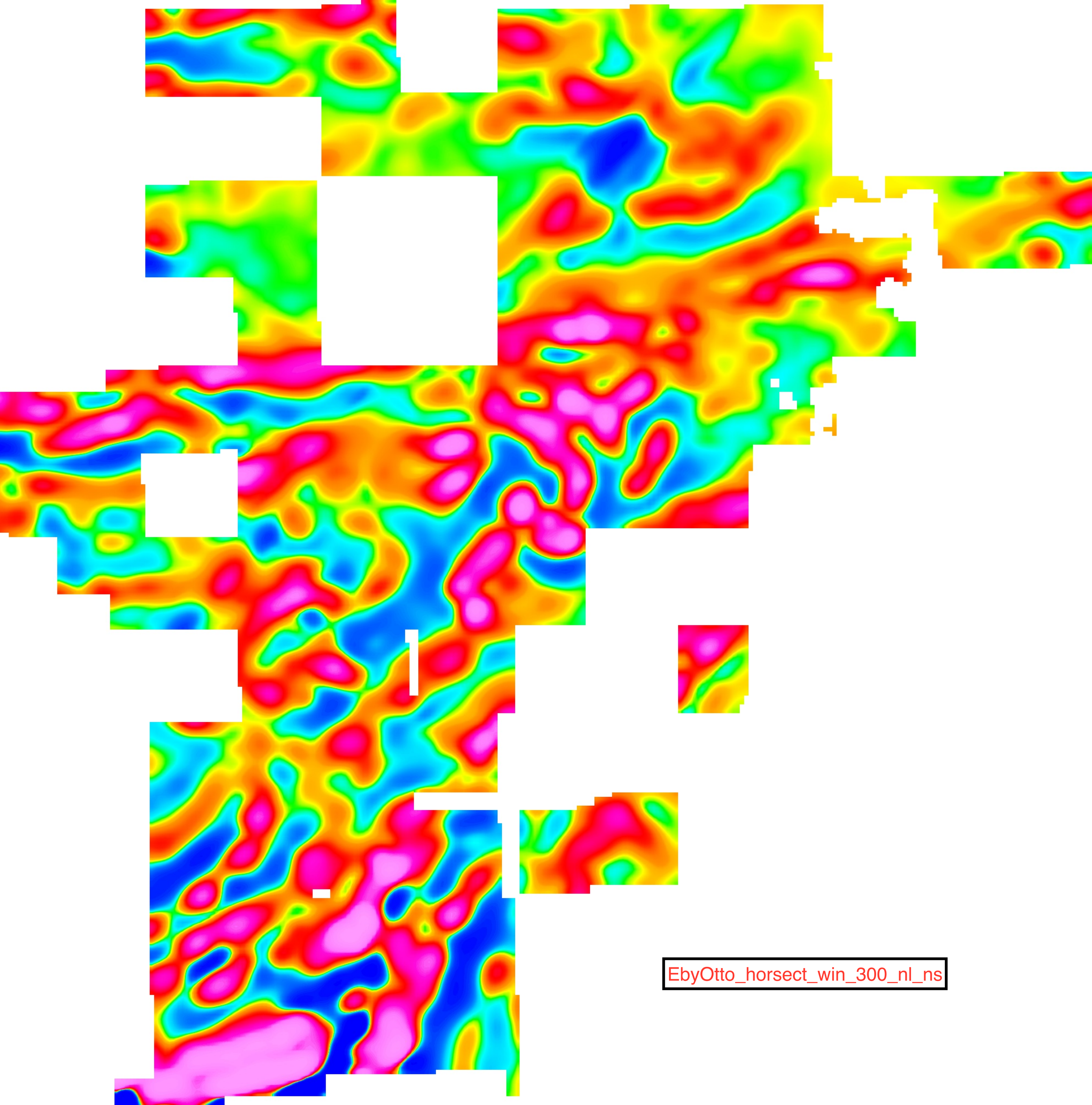

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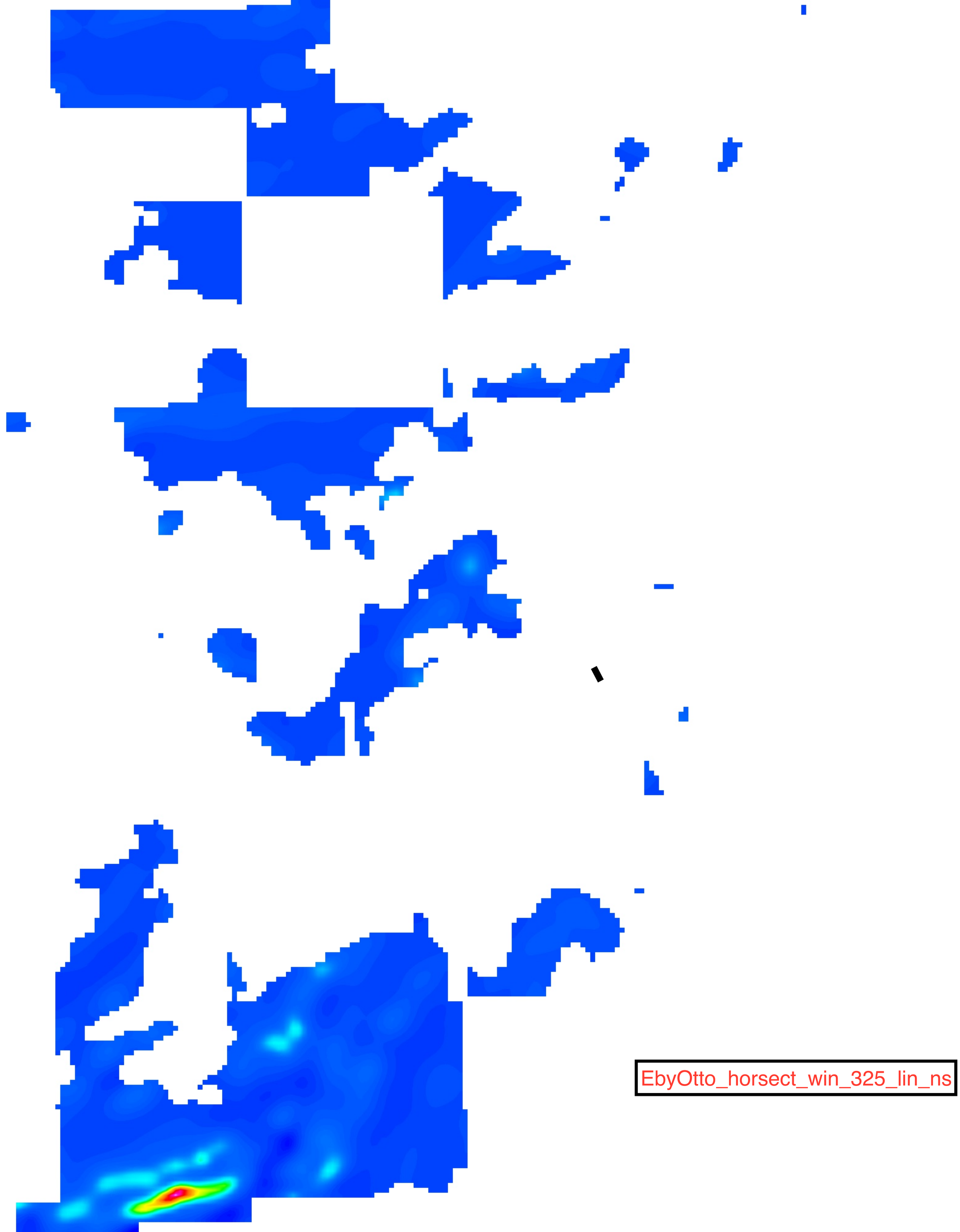

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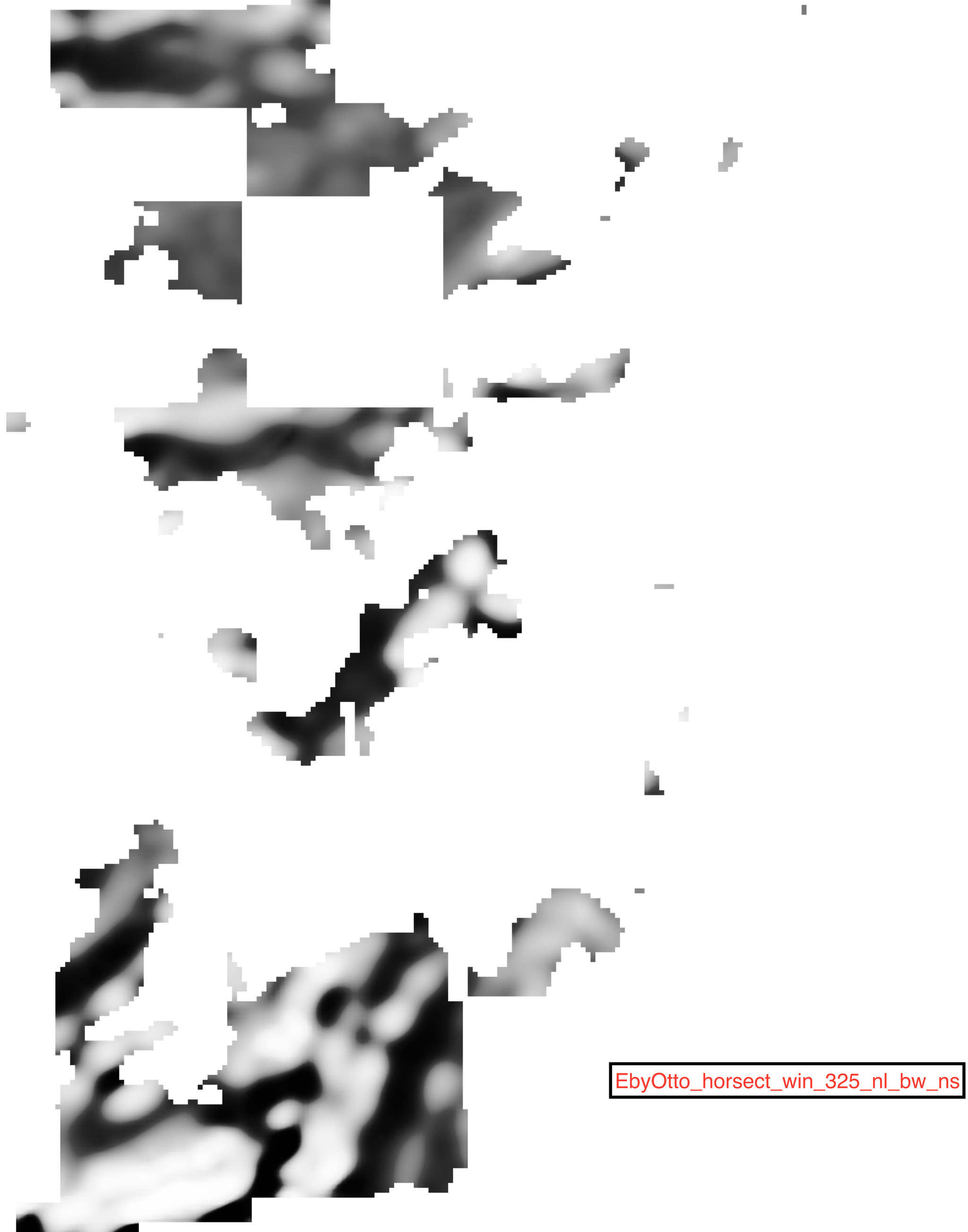
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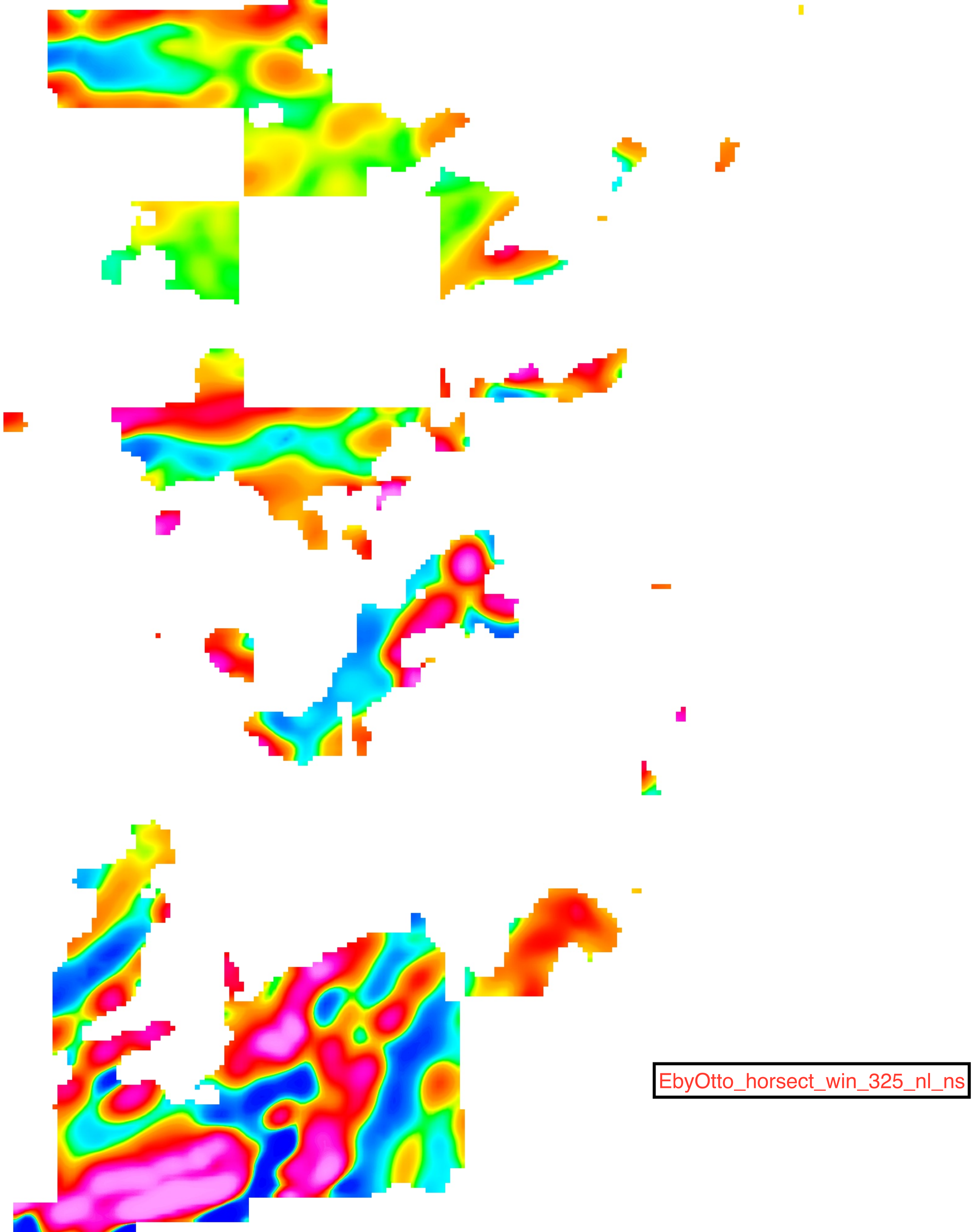

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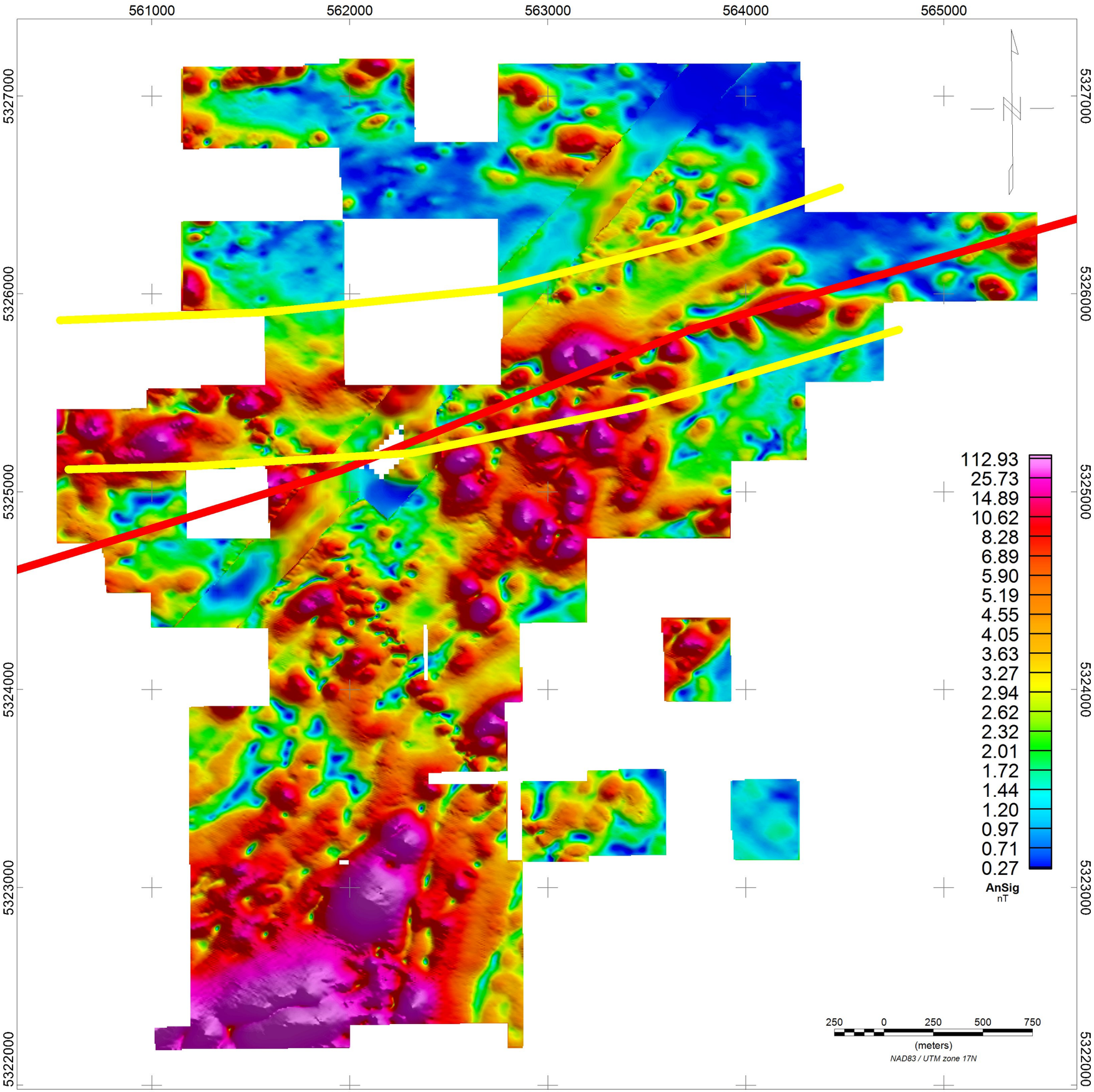

EbyOtto_horsect_win_300_nl_bw_ns


EbyOtto_horsect_win_300_nl_ns


EbyOtto_horsect_win_325_lin_ns


EbyOtto_horsect_win_325_nl_bw_ns


EbyOtto_horsect_win_325_nl_ns





CANADA COBALT WORKS

Canada Silver Cobalt Works
Eby Otto Project

UAV-Borne Magnetics:
Analytic Signal of
Residual Magnetic Intensity
(AnSig)

Survey Specifications:
Survey Date: 2022-04-06 to 2022-04-09
Survey Base: Kirkland Lake, Ontario
Survey Line Spacing: 25 m
Survey Line Direction: 0°
Tie Line Spacing: 250 m
Tie Line Direction: 90°
Nominal AGL: 30 m

UAV System:
DJI Matrice Pro 600
RTK Telemetric Navigation
Automatic Obstacle Avoidance System
Scintrex Cesium Vapor Magnetometer
GEM Overhauser Base Station

earthex

Created by: EarthEx Geophysical Solutions
Date: June 2022
22-464_EbyOttoUAVMAG_InvertProc

561000 562000 563000 564000 565000

5327000 5326000 5325000 5324000 5323000 5322000

3893
3690
3486
3283
3080
2877
2674
2470
2267
2064
1861
1658
1454
1251
1048
845
641
438
235
32
-171
-375

RMI
nT

250 0 250 500 750
(meters)
NAD83 / UTM zone 17N



CANADA COBALT WORKS

Canada Silver Cobalt Works
Eby Otto Project

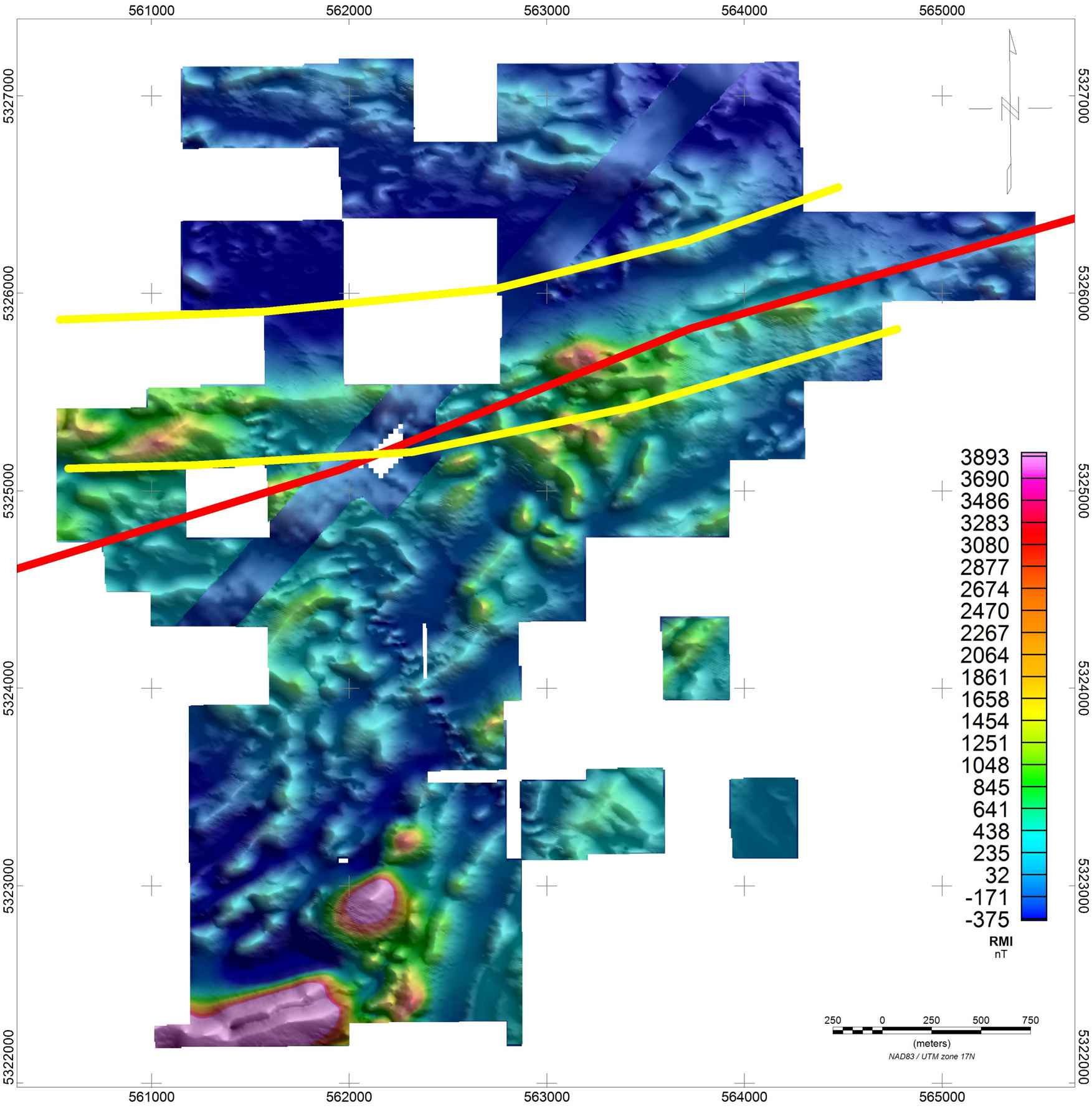
UAV-Borne Magnetics:
EarthEx Interpretive View
Magnetic Hybrid Image
(iView)

Survey Specifications:
Survey Date: 2022-04-06 to 2022-04-09
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CANADA COBALT WORKS

Canada Silver Cobalt Works
Eby Otto Project

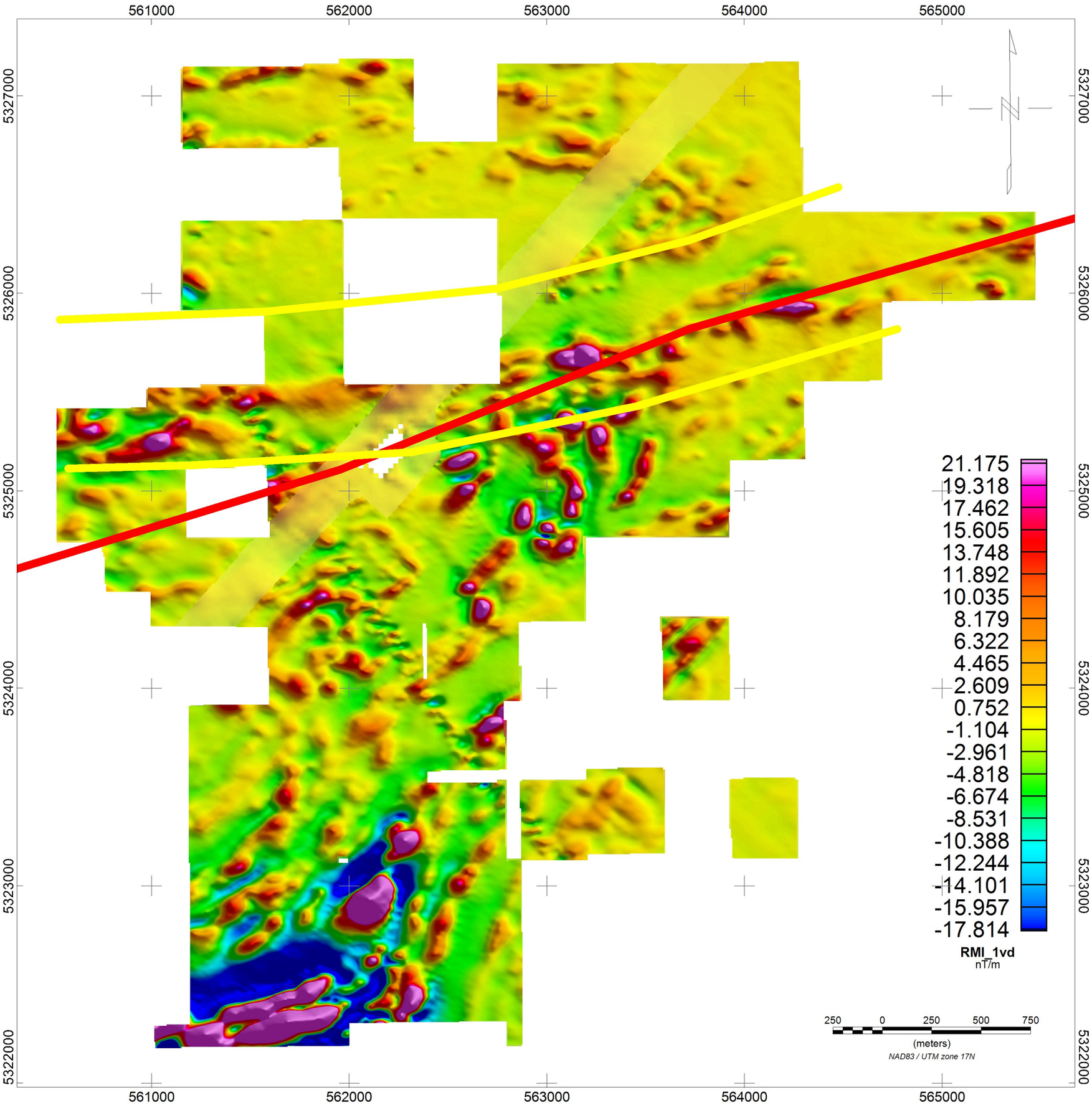
UAV-Borne Magnetics:
EarthEx Interpretive View
Magnetic Hybrid Image
(iView2)

Survey Specifications:
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Tie Line Direction: 90°
Nominal AGL: 30 m

UAV System:
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RTK Telemetric Navigation
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CANADA COBALT WORKS

Canada Silver Cobalt Works
Eby Otto Project

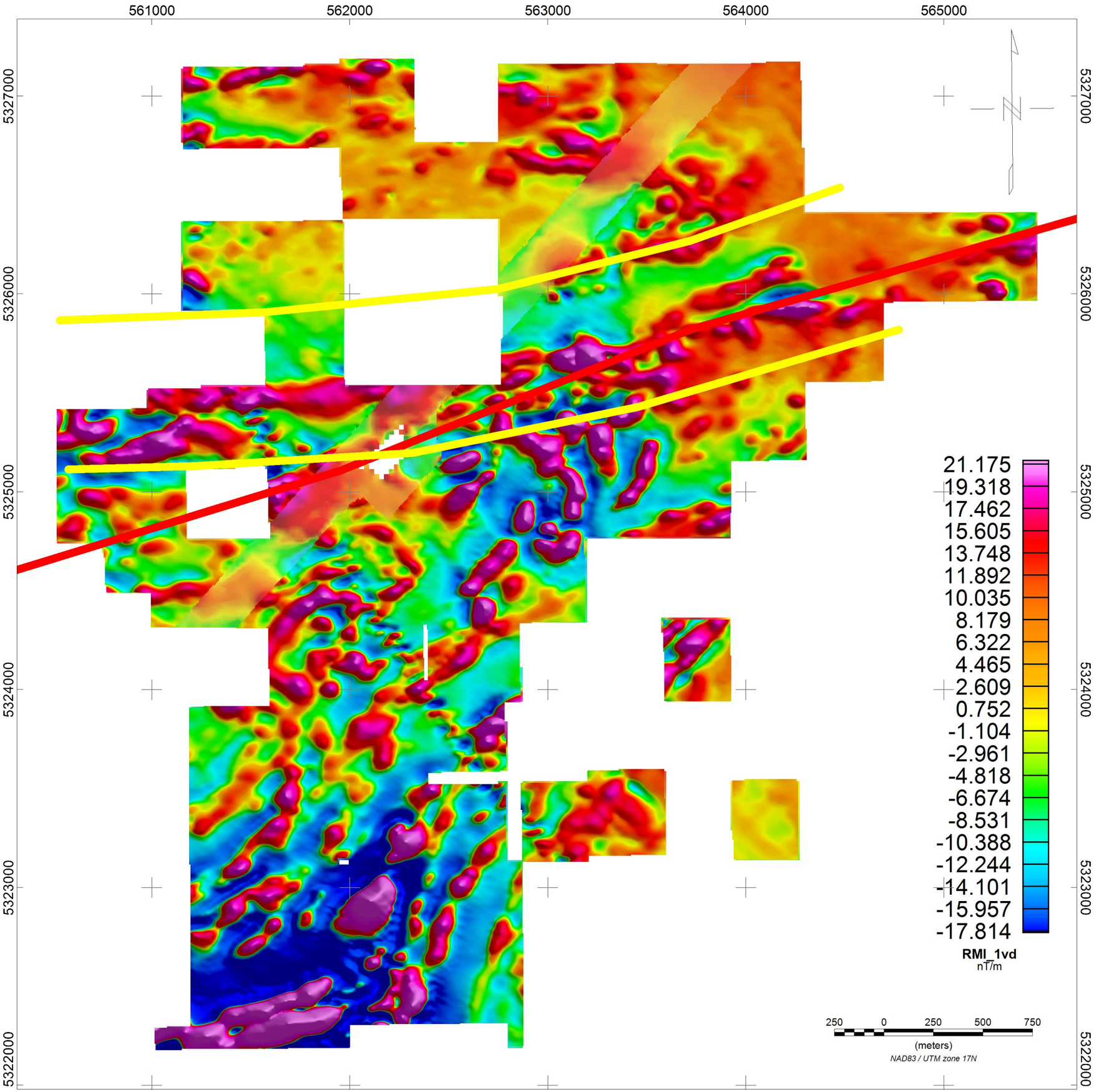
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First Vertical Derivative of
Residual Magnetic Intensity
(RMI_1vd)

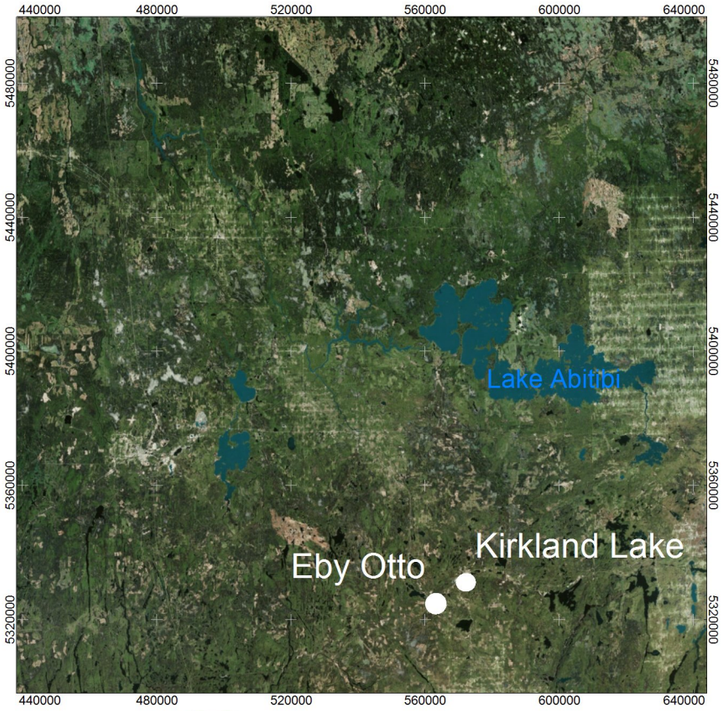
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Survey Base: Kirkland Lake, Ontario
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UAV System:
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RTK Telemetric Navigation
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earthex

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22-464_EbyOttoUAVMAG_InvertProc





CANADA COBALT WORKS

Canada Silver Cobalt Works
Eby Otto Project

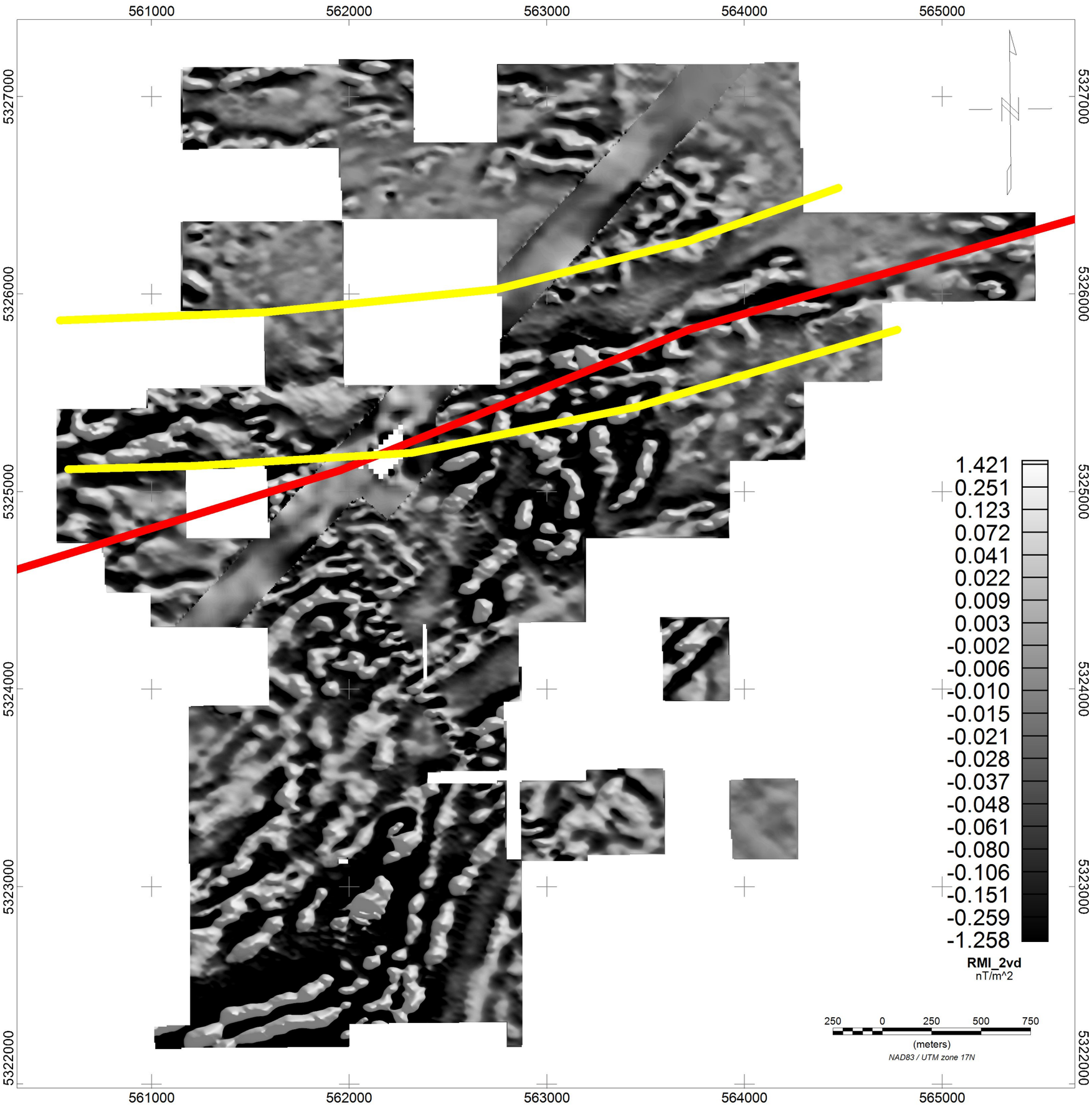
UAV-Borne Magnetics:
First Vertical Derivative of
Residual Magnetic Intensity
(RMI_1vd)

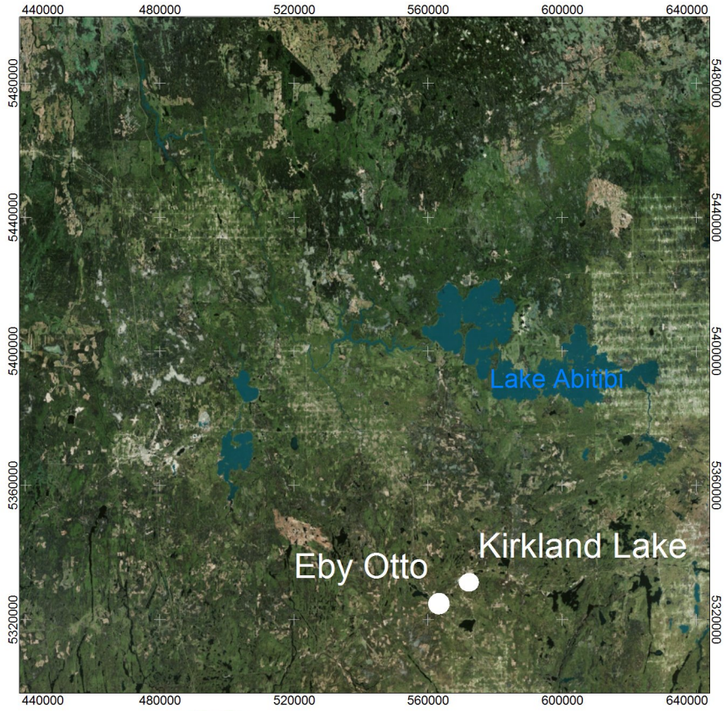
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Survey Date: 2022-04-06 to 2022-04-09
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RTK Telemetric Navigation
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earthex

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22-464_EbyOttoUAVMAG_InvertProc





CANADA COBALT WORKS

Canada Silver Cobalt Works
Eby Otto Project

UAV-Borne Magnetics:
Second Vertical Derivative of
Residual Magnetic Intensity
(RMI_2vd)

Survey Specifications:
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Survey Base: Kirkland Lake, Ontario
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Survey Line Direction: 0°
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Tie Line Direction: 90°
Nominal AGL: 30 m

UAV System:
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RTK Telemetric Navigation
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earthex

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22-464_EbyOttoUAVMAG_InvertProc

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5327000 5326000 5325000 5324000 5323000 5322000

3893
3690
3486
3283
3080
2877
2674
2470
2267
2064
1861
1658
1454
1251
1048
845
641
438
235
32
-171
-375

RMI
nT

250 0 250 500 750
(meters)
NAD83 / UTM zone 17N



CANADA COBALT WORKS

Canada Silver Cobalt Works
Eby Otto Project

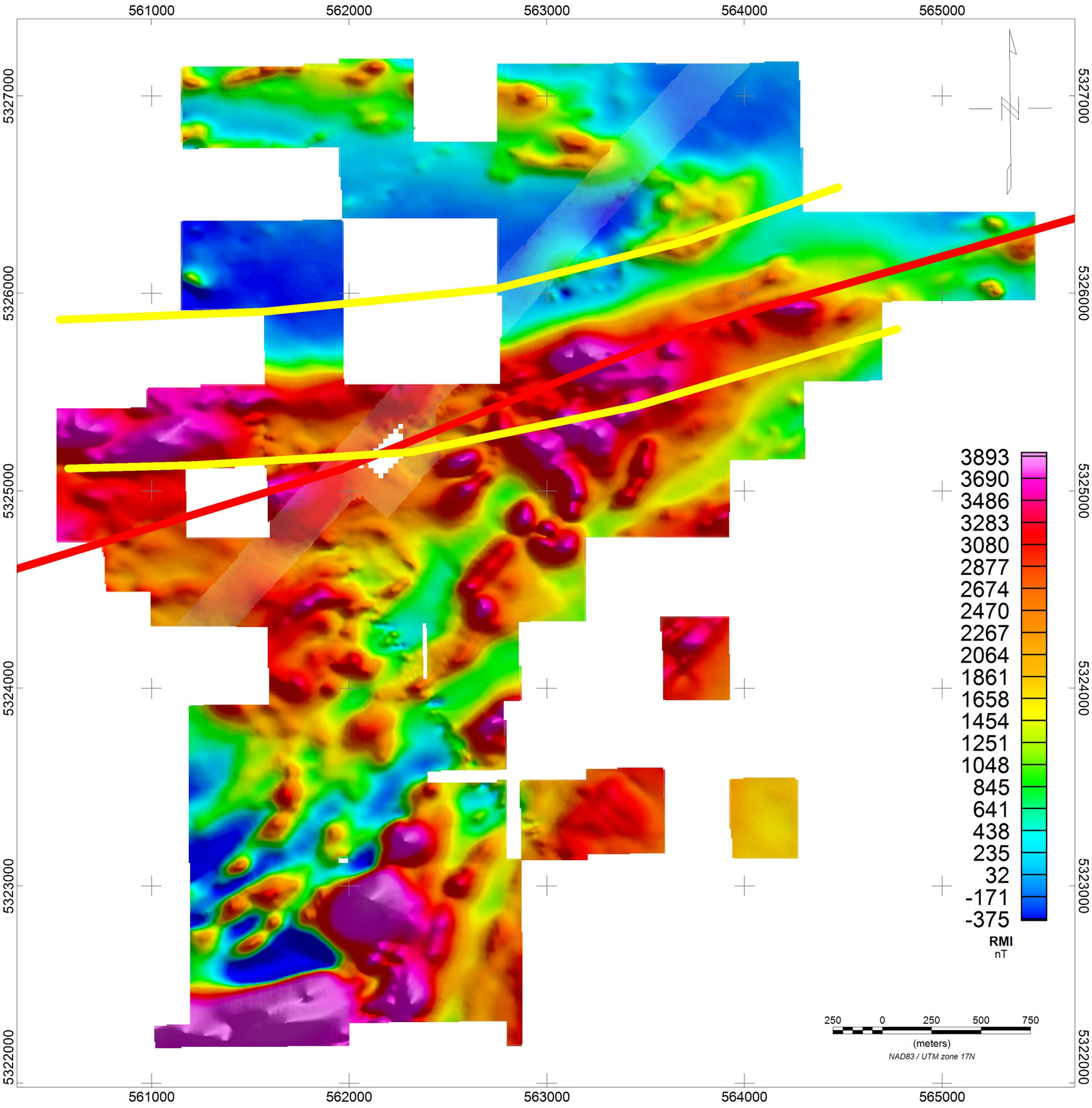
UAV-Borne Magnetics:
Residual Magnetic Intensity
(RMI)

Survey Specifications:
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earthex

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CANADA COBALT WORKS

Canada Silver Cobalt Works
Eby Otto Project

UAV-Borne Magnetics:
Residual Magnetic Intensity (RMI)

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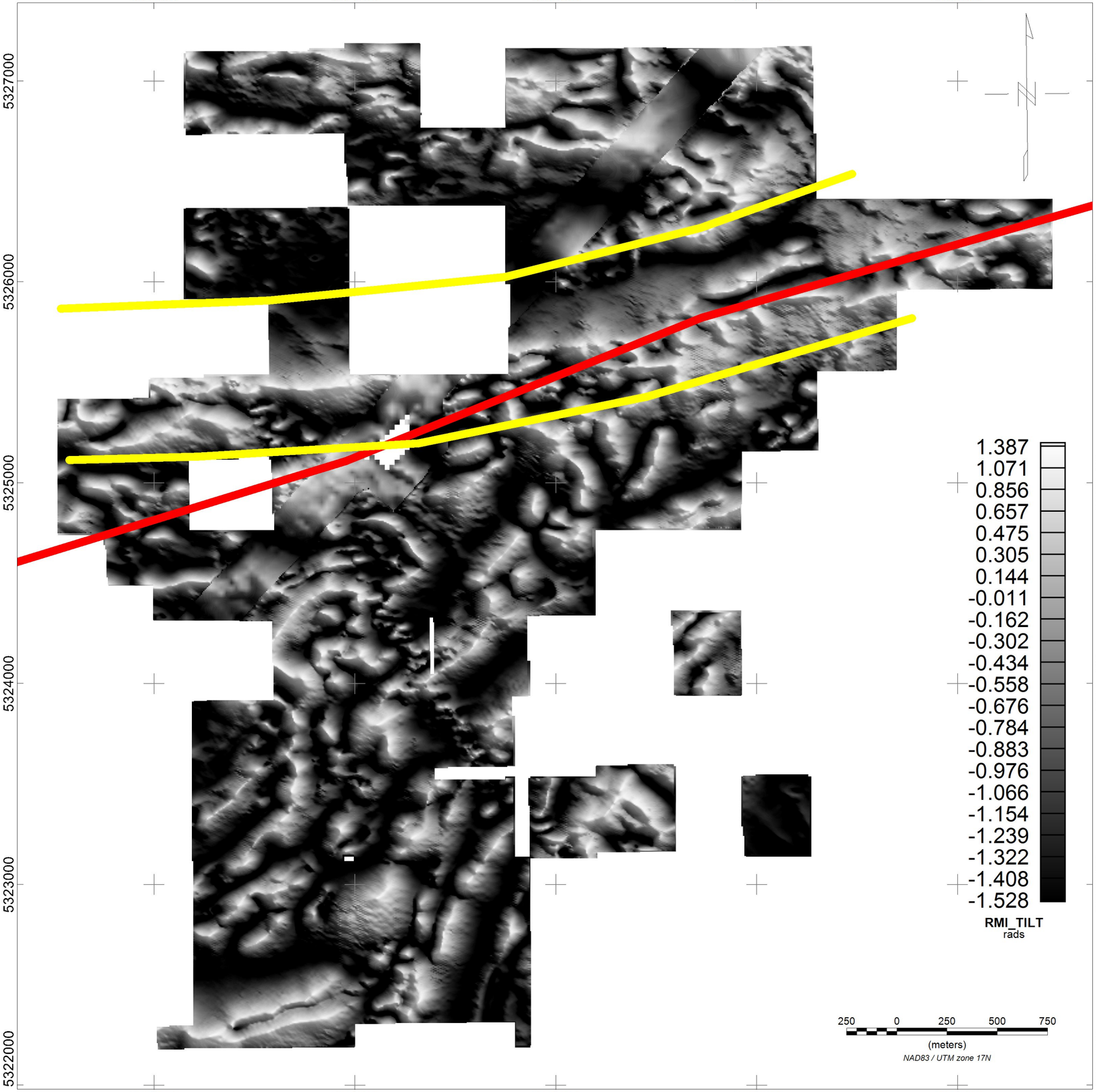
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561000 562000 563000 564000 565000

5327000 5326000 5325000 5324000 5323000 5322000



1.387
1.071
0.856
0.657
0.475
0.305
0.144
-0.011
-0.162
-0.302
-0.434
-0.558
-0.676
-0.784
-0.883
-0.976
-1.066
-1.154
-1.239
-1.322
-1.408
-1.528

RMI_TILT
rads

250 0 250 500 750
(meters)
NAD83 / UTM zone 17N



CANADA COBALT WORKS

Canada Silver Cobalt Works
Eby Otto Project

UAV-Borne Magnetics:
Tilt Derivative of
Residual Magnetic Intensity
(RMI_TILT)

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Date: June 2022
22-464_EbyOttoUAVMAG_InvertProc

CCW Eby-Otto Property Options and Survey coverage

June 2022

560000 561000 562000 563000 564000 565000

5329000 5328000 5327000 5326000 5325000 5324000 5323000 5322000 5321000 5320000

GRENFELL TECK

EBY OTTO

Cadillac - Larder Lake Break

Eby-Otto Fault trend

LEA-108932 LEA-108930 LEA-109272 LEA-108574 LEA-107969 LEA-107970 LEA-108929 LEA-108931

122210 310340 327167 266415 207124 192312 247630 209176 290927 135001 266432 199839 187626 310364 310363 187627 290950 310365 109789 189669 343862 566665 273066 135002 236279 275757137750 305071 236933 325789 345088 275758 566666 247030 313007 242862 127946 325155 344510 305709 337822 139412 209809 247031 154462 313020 275714 275715 305728 210469 209810 137667 561434 172943 275864 172256 287723 598012 631831 631832 197735 178176 522271 522272 205064 109320 522414 522413 185580 178177

LEGEND

- Cadillac Larder Lake Break
- Eby-Otto Fault Trend
- Historical_Alteration_Trend
- Tinney Option
- Reed_Robinson Option
- Allsopp Option
- TOWNSHIP

500 0 500 1000 m

1:25000

Eby-Otto Property Options - Regional Geology Map
Canada Silver Cobalt Works

underlay: ODM Map 2205 and 2361 - Regional Geology

June 2022

560000 570000

5340000 5330000 5320000 5310000

BOMPAS GRENFELL TECK

BURT EBY OTTO

GROSS BLAIN MARQUIS

SHARPE

AREA OF WORK

LEGEND

- Tinney Option
- Reed_Robinson Option
- Allsopp Option
- TOWNSHIP

2000 0 2000 4000 m

1:100000

Eby-Otto Property Options Regional Location Map
Canada Silver Cobalt Works

June 2022

560000

570000

5340000

5330000

5320000

5310000

BOMPAS

GRENFELL

TECK

LEBEL

BURT

EBY

OTTO

BOSTON

GROSS

BLAIN

MARQUIS

PACAUD

SHARPE

LEGEND

- Tinney Option
- Reed_Robinson Option
- Allsopp Option
- TOWNSHIP

2000 0 2000 4000 m

1:100000