

## Trabajo Práctico N° 1 y siguientes Instructivo básico para generar mapas en Surfer

Primero se efectúa la carga de datos

**OPEN** (.dat)/(.xls) : valor a grillar(x, y, z)

Al cerrar paso a ventana **PLOT**

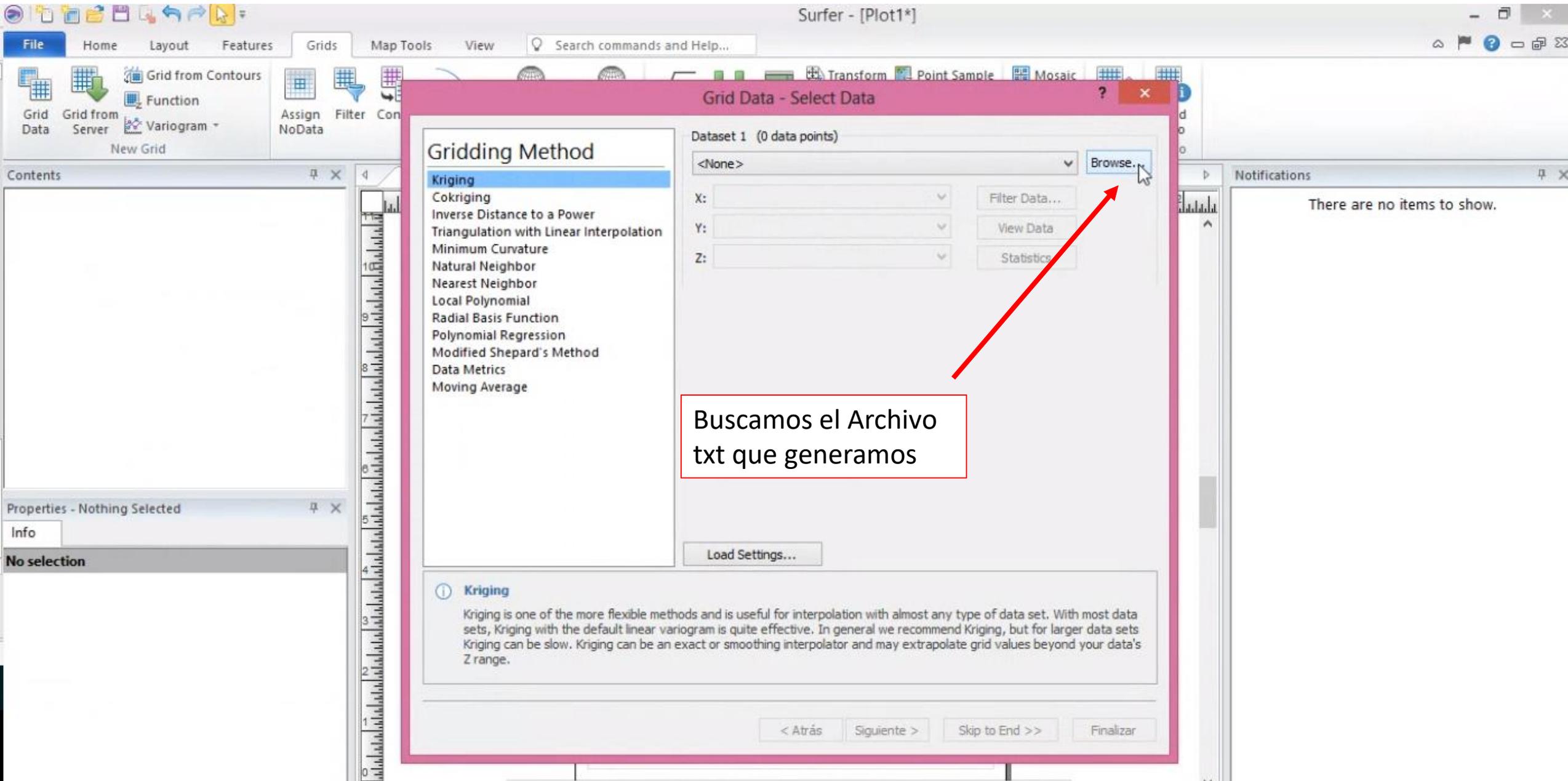
Luego se genera la grilla

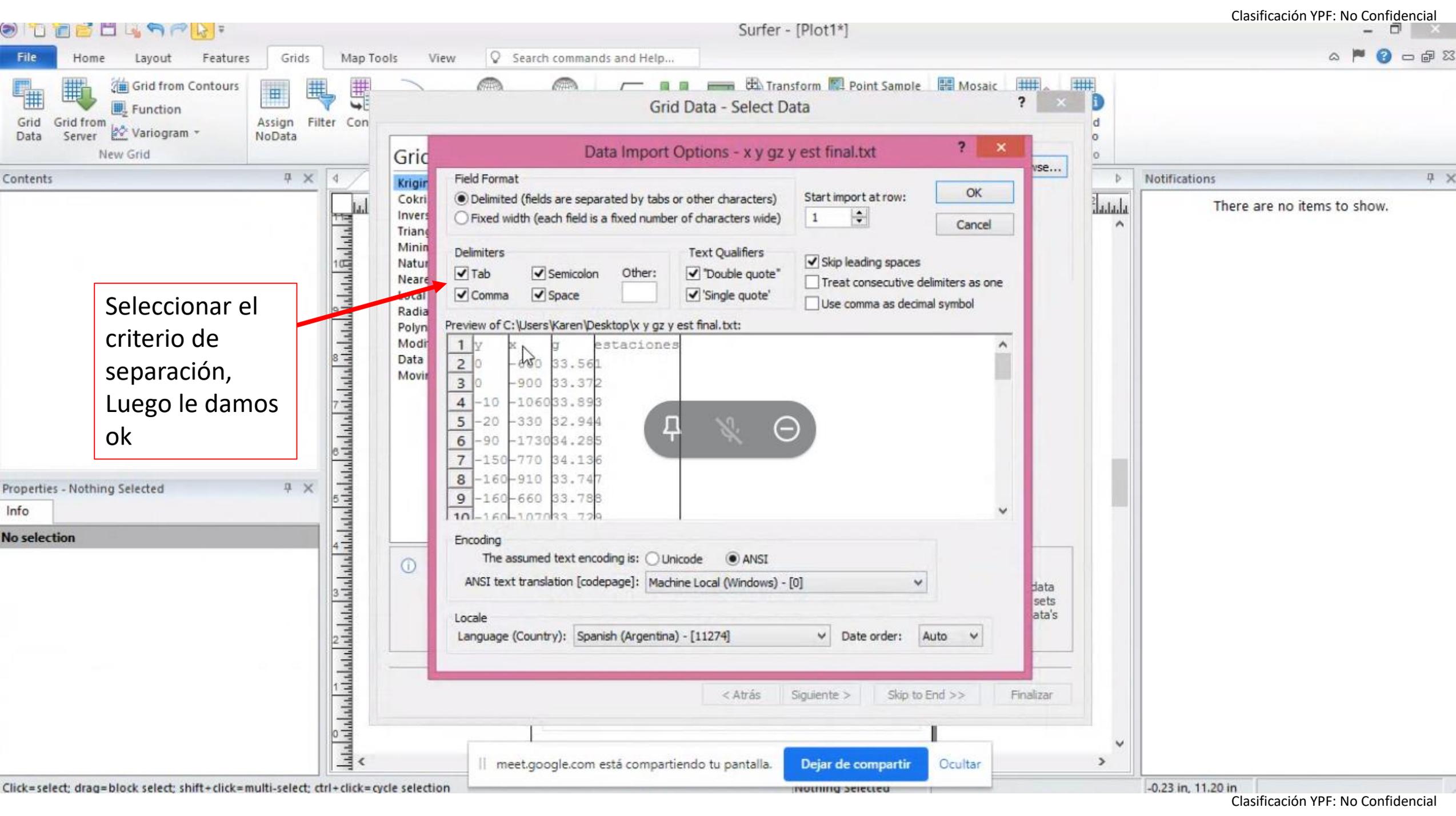
**GRID**

**DATA** (archivo.dat): asignar columnas: x, y, z

**GRAL**: especificar, entre otras cosas, archivo de salida

Se genera un reporte que conviene guardar





Seleccionar el criterio de separación, Luego le damos ok

Surfer - [Plot1\*]

File Home Layout Features Grids Map Tools View Search commands and Help...

Grid Data Grid from Server Variogram - New Grid

Grid from Contours Function Assign NoData Filter Con

Contents

Properties - Nothing Selected Info No selection

Grid Data - Select Data

Gridding Method

- Kriging**
- Cokriging
- Inverse Distance to a Power
- Triangulation with Linear Interpolation
- Minimum Curvature
- Natural Neighbor
- Nearest Neighbor
- Local Polynomial
- Radial Basis Function
- Polynomial Regression
- Modified Shepard's Method
- Data Metrics
- Moving Average

Dataset 1 (132 data points)

C:\Users\Karen\Desktop\x y gz y est final.txt Browse...

X: Column B: x Filter Data...

Y: Column A: y View Data

Z: Column C: g Statistics

Load Settings...

**Kriging**

Kriging is one of the more flexible methods and is useful for interpolation with almost any type of data set. With most data sets, Kriging with the default linear variogram is quite effective. In general we recommend Kriging, but for larger data sets Kriging can be slow. Kriging can be an exact or smoothing interpolator and may extrapolate grid values beyond your data's Z range.

< Atrás Siguiete > Skip to End >> Finalizar

There are no items to show.

Surfer - [Plot1\*]

File Home Layout Features Grids Map Tools View Search commands and Help...

Grid from Contours Function Variogram Assign NoData Filter Con

Grid Data Grid from Server Variogram New Grid

Contents

Properties - Nothing Selected Info No selection

Grid Data - Kriging - Variogram

Variogram

Distance

104.927  
87.4394  
69.9515  
52.4636

**General**

Trend removal None

Import variogram Get Variogram...

AutoFit AutoFit...

Statistics Display Statistic

**Experimental**

Estimator type Variogram

Lag size 83.86968139

Number of lags 15

Direction 0

Tolerance 90

**Nugget Effect**

Error variance 0

Micro variance 0

**Variogram Component #1** (Linea...)

Component type Linea

Slope 0.03191452701

Anisotropy

**Variogram Component #2** (None)

**Variogram Component #3** (None)

**Plot**

Show estimate symbols

Show estimate line

< Atrás Siguiete Skip to End >> Finalizar

Aquí se pueden modificar los parámetros del variograma a usar, luego siguiente

Notifications

There are no items to show.

Surfer - [Plot1\*]

File Home Layout Features Grids Map Tools View Search commands and Help...

Grid Data Grid from Server Variogram - New Grid

Grid from Contours Function Assign NoData Filter Con

Contents

Notifications

There are no items to show.

Properties - Nothing Selected

Info

No selection

### Grid Data - Kriging - Output

Output Grid Geometry

Copy geometry from: <None> Browse...

	Minimum	Maximum	Spacing	# of Nodes
X Direction:	-3000	0	30.3030303030303	100
Y Direction:	-2290	0	30.131578947368	77

Grid Z Limits

Minimum: None

Maximum: None

Assign NoData outside convex hull of data

Inflate convex hull by: 0

Z Transform: Linear

NoData Polygon Boundary

<None> Browse...

Loaded 0 polygons total (0 inside, 0 outside)

NoData Inside  NoData Outside  Mixed  Selected objects only

Output Grid

C:\Users\Karen\Desktop\x y gz y est final.grd

Grid Report

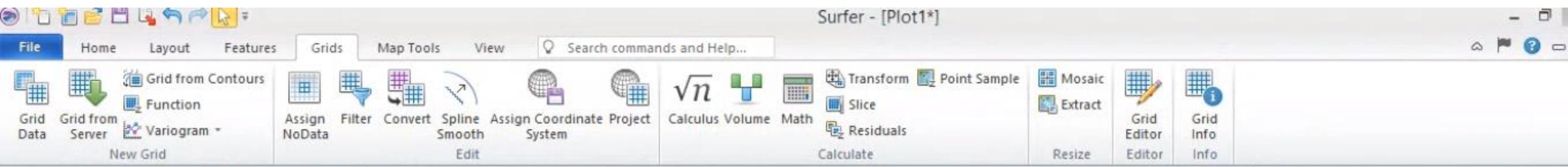
Add grid as layer to: [New Map]

New layer: Contour

Save Settings...

< Atrás Siguiente Skip to End >> Finalizar

Se nos va a generar un archivo interno de surfer con la extensión .grd



Contents

- Map
- Right
- Left
- Top
- Bottom
- Contents

Properties - Nothing

Info

No selection

Surfer - GridDataReport-x y gz y est final

File Edit

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## Gridding Report

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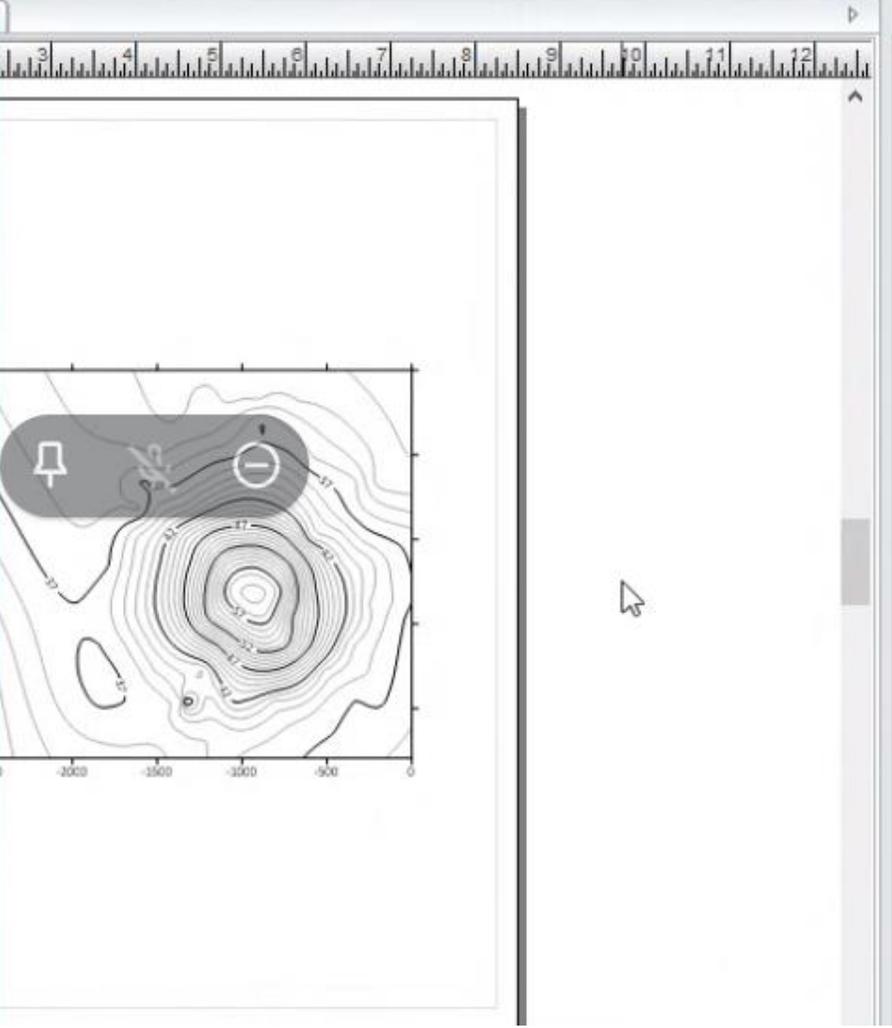
Thu Apr 29 21:07:22 2021  
 Elapsed time for gridding: 0.05 seconds

**Data Source**

Source Data File Name: C:\Users\Karen\Desktop\lx y gz y est final.txt  
 X Column: B  
 Y Column: A  
 Z Column: C

**Filtered Data Counts**

Active Data: 132  
 Original Data: 132  
 Excluded Data: 0  
 Deleted Duplicates: 0  
 Retained Duplicates: 0  
 Artificial Data: 0  
 Superseded Data: 0



Notifications

There are no items to show.

The image shows the Surfer software interface with a contour map displayed in the main window. The map has a coordinate system with x and y axes ranging from -3000 to 0. The map shows several contour lines representing elevation, with a central peak. The interface includes a ribbon with tabs for File, Home, Layout, Features, Grids, Map Tools, and View. The Home tab is active, showing various tool icons. A red arrow points from the 'Base' button in the 'New Map' group to a text box. Another red arrow points from the 'Map' item in the 'Contents' panel to another text box. The 'Contents' panel on the left shows a tree view with 'Map' selected, and sub-items for 'Right Axis', 'Left Axis', 'Top Axis', 'Bottom Axis', and 'Contours-x y gz y est final.grd'. The 'Properties' panel at the bottom left shows 'Nothing Selected'.

En el árbol se nos crea un "map" con elementos entre ellos los ejes y la grilla

Si no se genera, vamos a Base add Map

Para agregar otra grilla (Mapa topográfico por ej) vamos a add to map → Ad Contour y añadimos a partir del archivo txt las columnas con x, y and altura

Para agregar Las estaciones vamos a add to map → post y añadimos a partir del archivo txt las columnas con x, y and estaciones

**Data Import Options - x y gz y est final.txt**

Field Format

Delimited (fields are separated by tabs or other characters)  Fixed width (each field is a fixed number of characters wide)

Start import at row: 1

Delimiters

Tab  Semicolon  Space  Comma  Other: \_\_\_\_\_

Text Qualifiers

'Double quote'  'Single quote'

Skip leading spaces  Treat consecutive delimiters as one  Use comma as decimal symbol

Preview of C:\Users\Karen\Desktop\x y gz y est final.txt:

1	y	x	g	estaciones
2	0	-660	33.561	
3	0	-900	33.372	
4	-10	-1060	33.893	
5	-20	-330	32.944	
6	-90	-1730	34.285	
7	-150	-770	34.136	
8	-160	-910	33.747	
9	-160	-660	33.788	
10	-160	-1070	33.726	

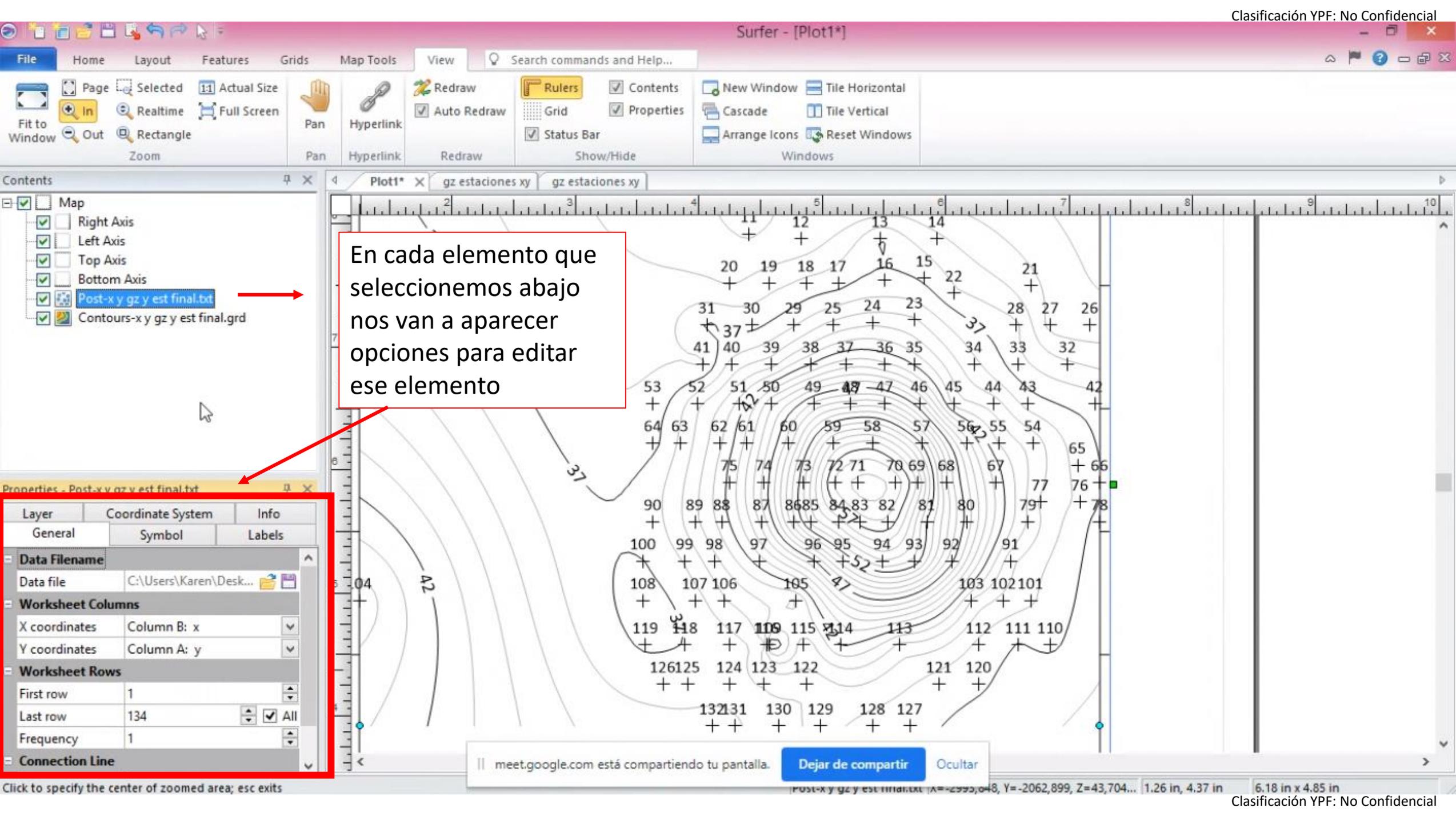
Encoding

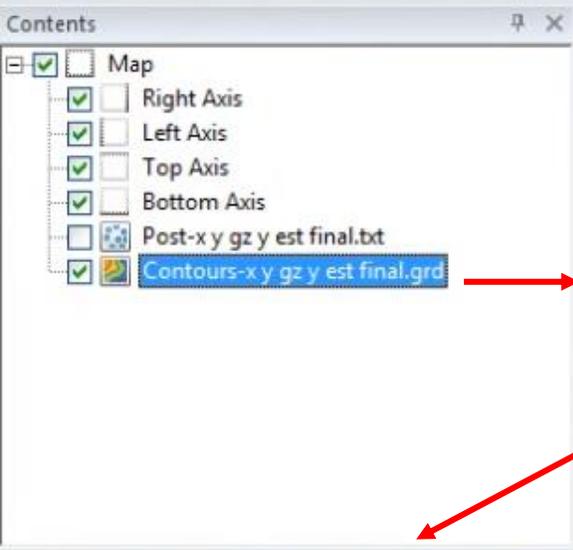
The assumed text encoding is:  Unicode  ANSI

ANSI text translation [codepage]: Machine Local (Windows) - [0]

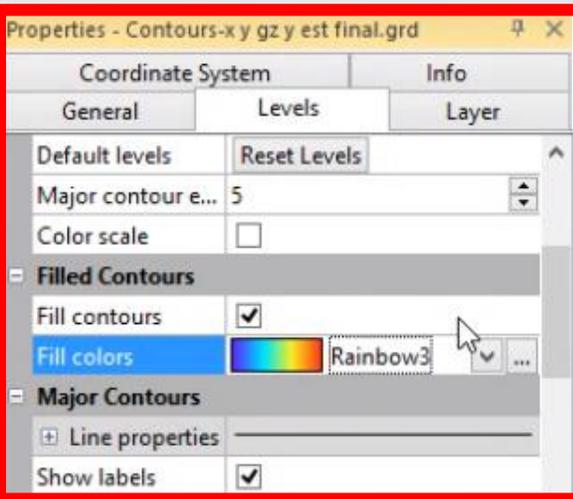
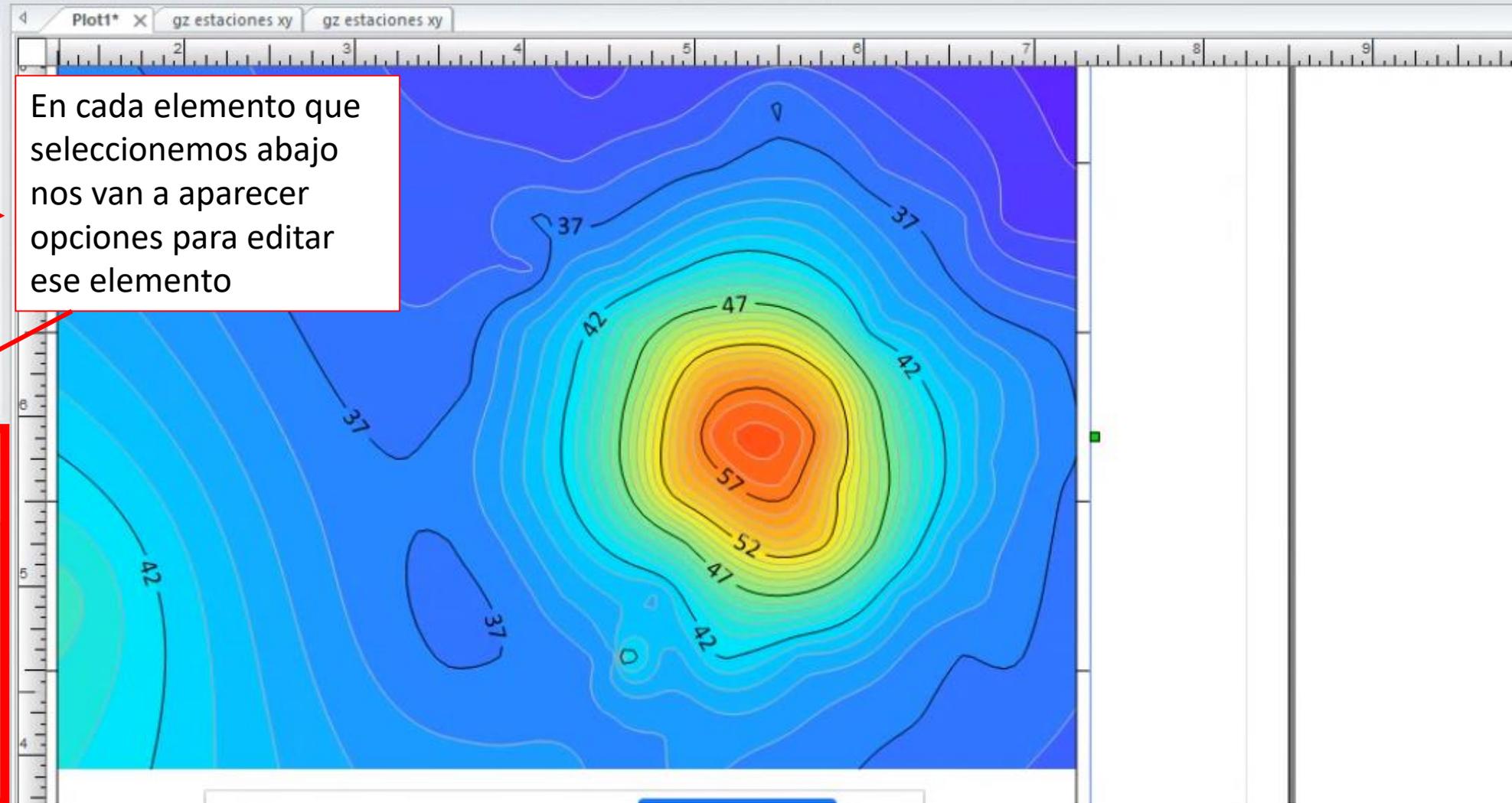
Locale

Language (Country): Spanish (Argentina) - [11274] Date order: Auto





En cada elemento que seleccionemos abajo nos van a aparecer opciones para editar ese elemento



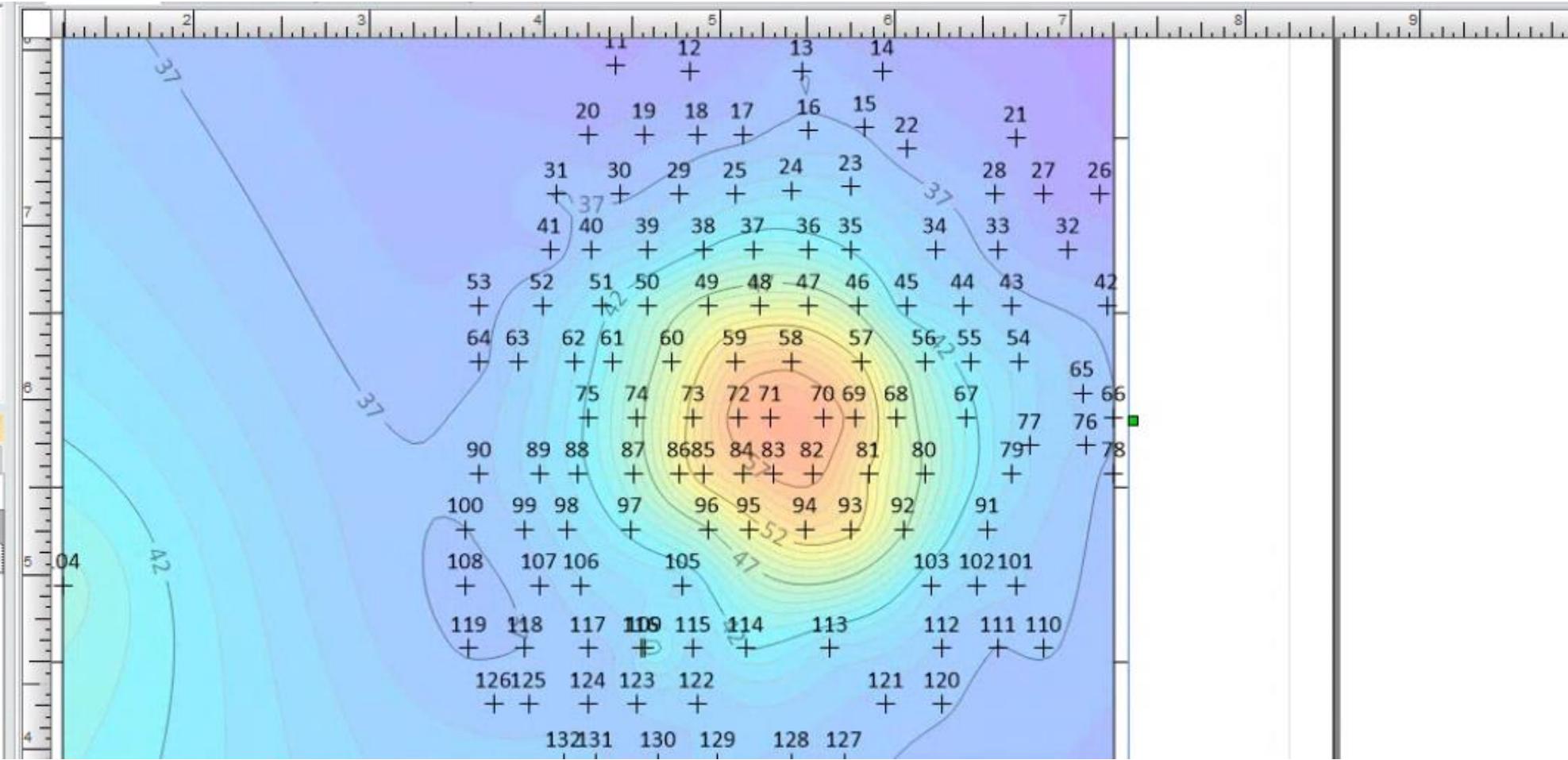
- Map
  - Right Axis
  - Left Axis
  - Top Axis
  - Bottom Axis
  - Post-x y gz y est final.txt
  - Contours-x y gz y est final.grd

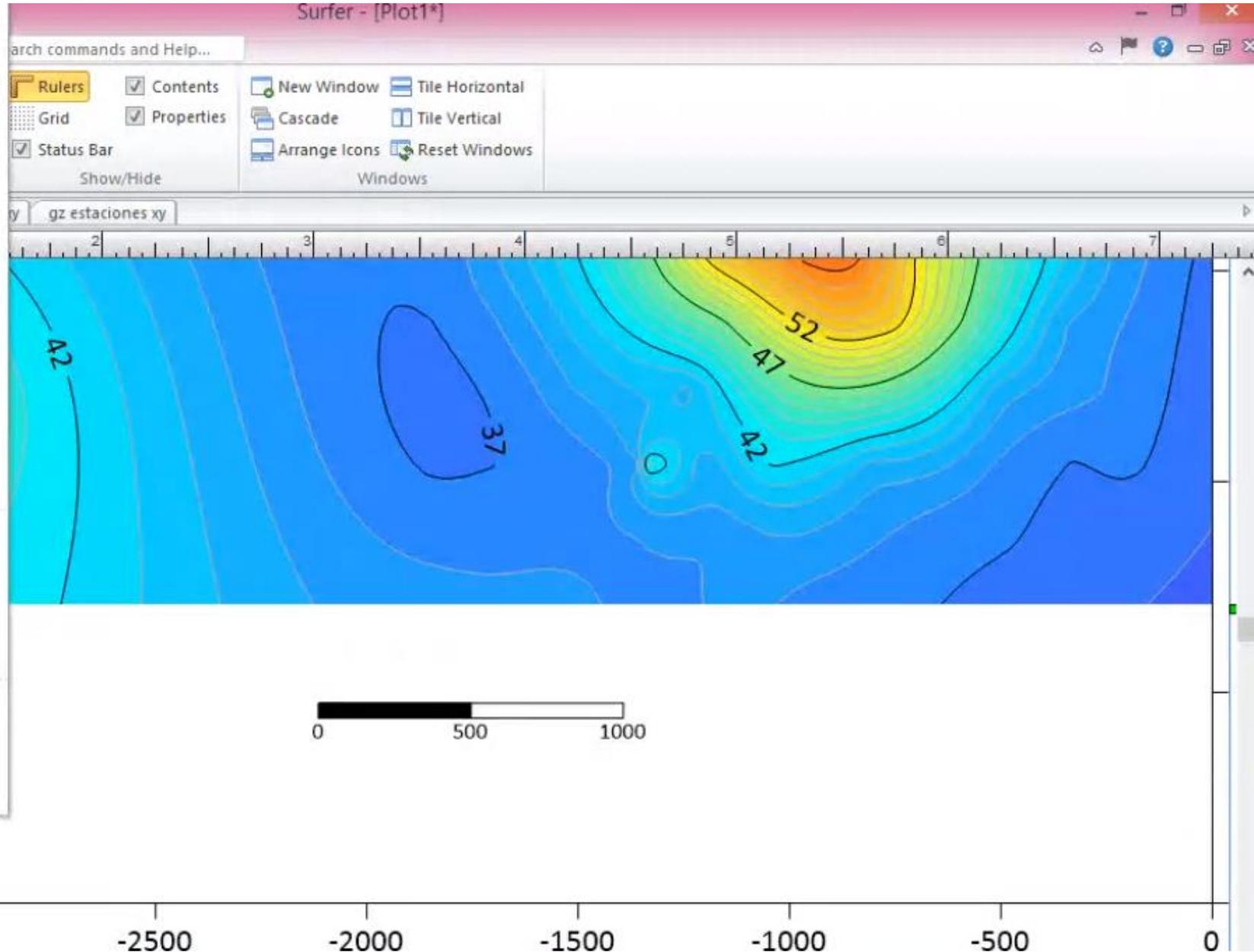
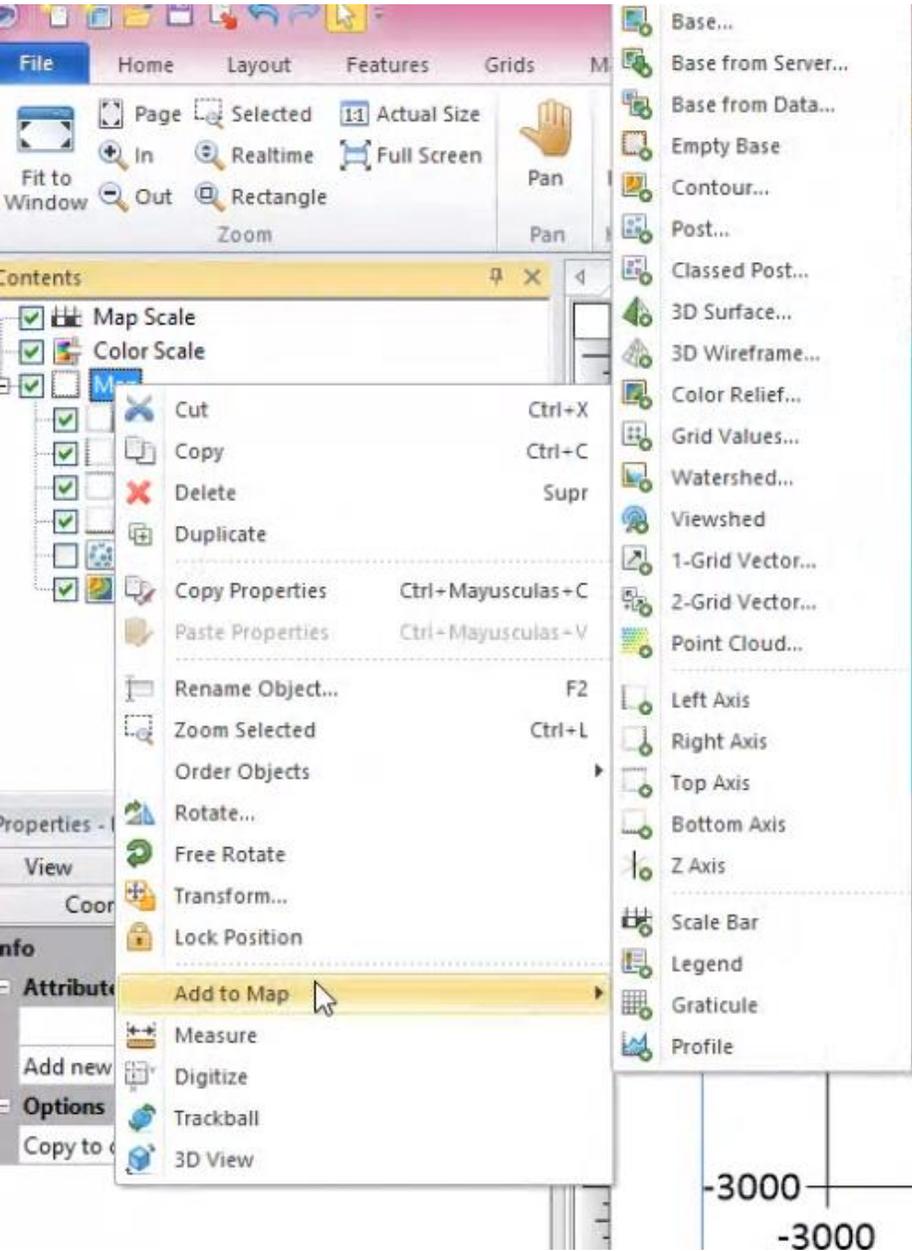
Properties - Contours-x y gz y est final.grd

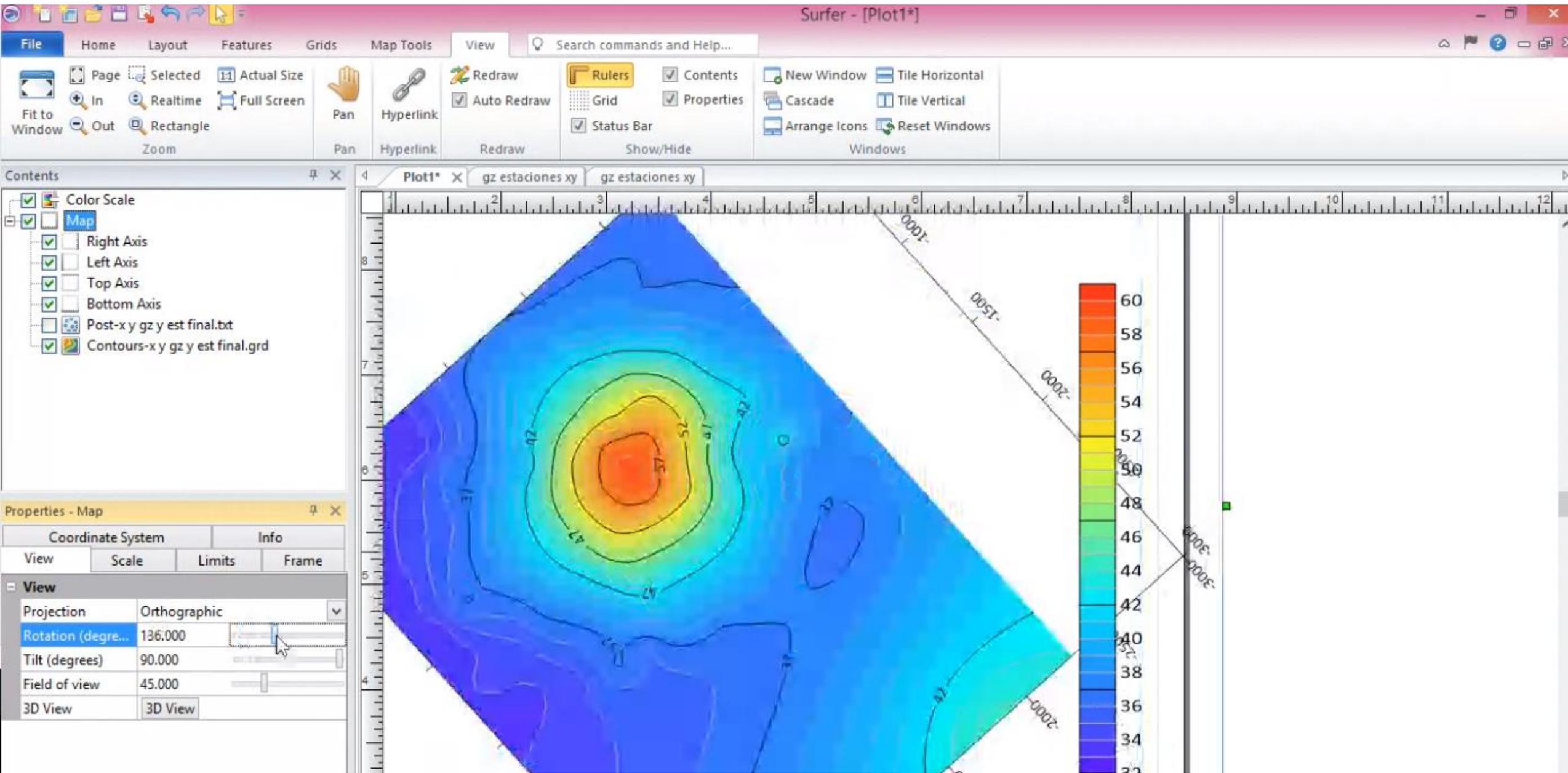
Coordinate System		Info
General	Levels	Layer

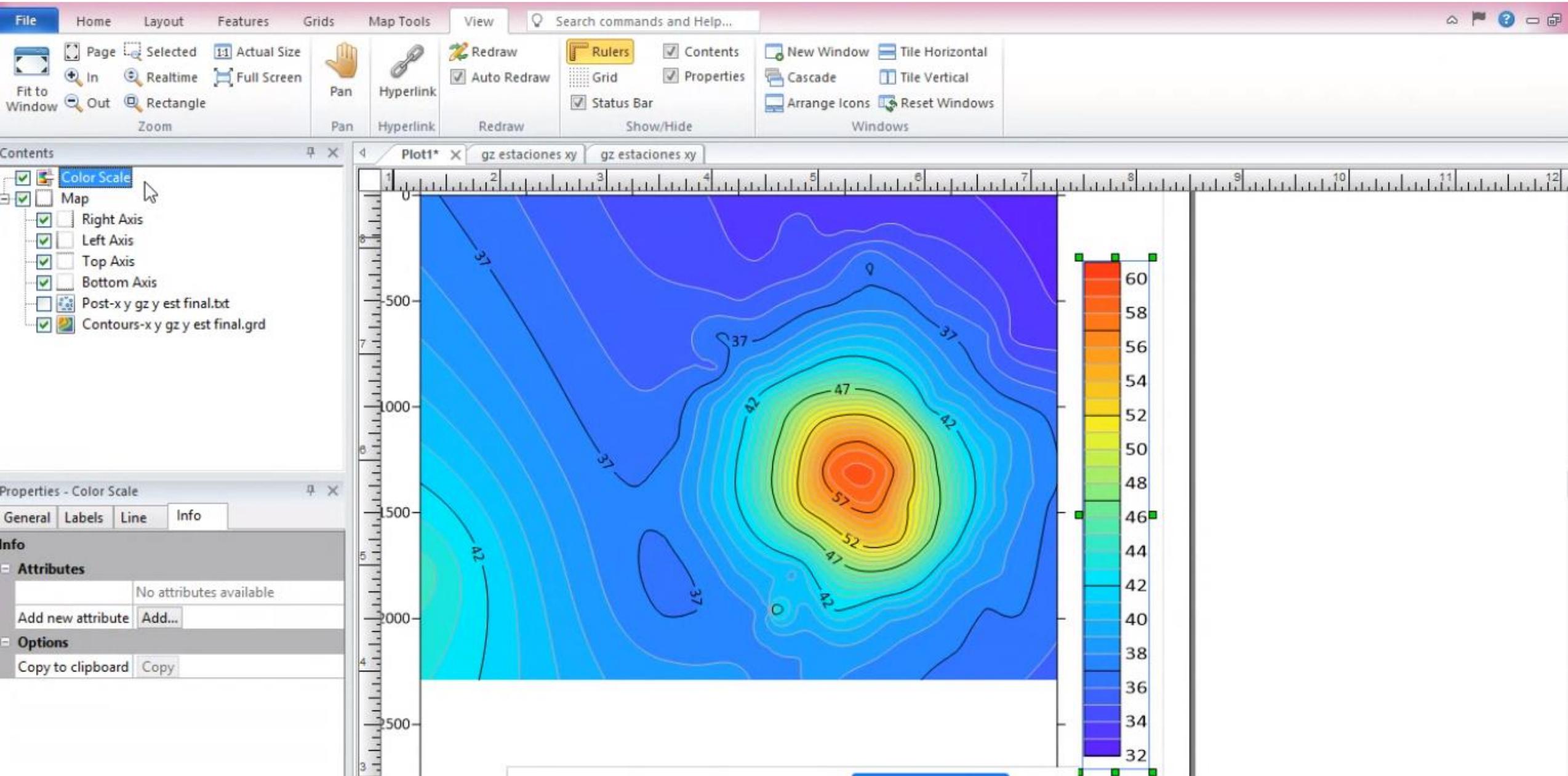
Layer

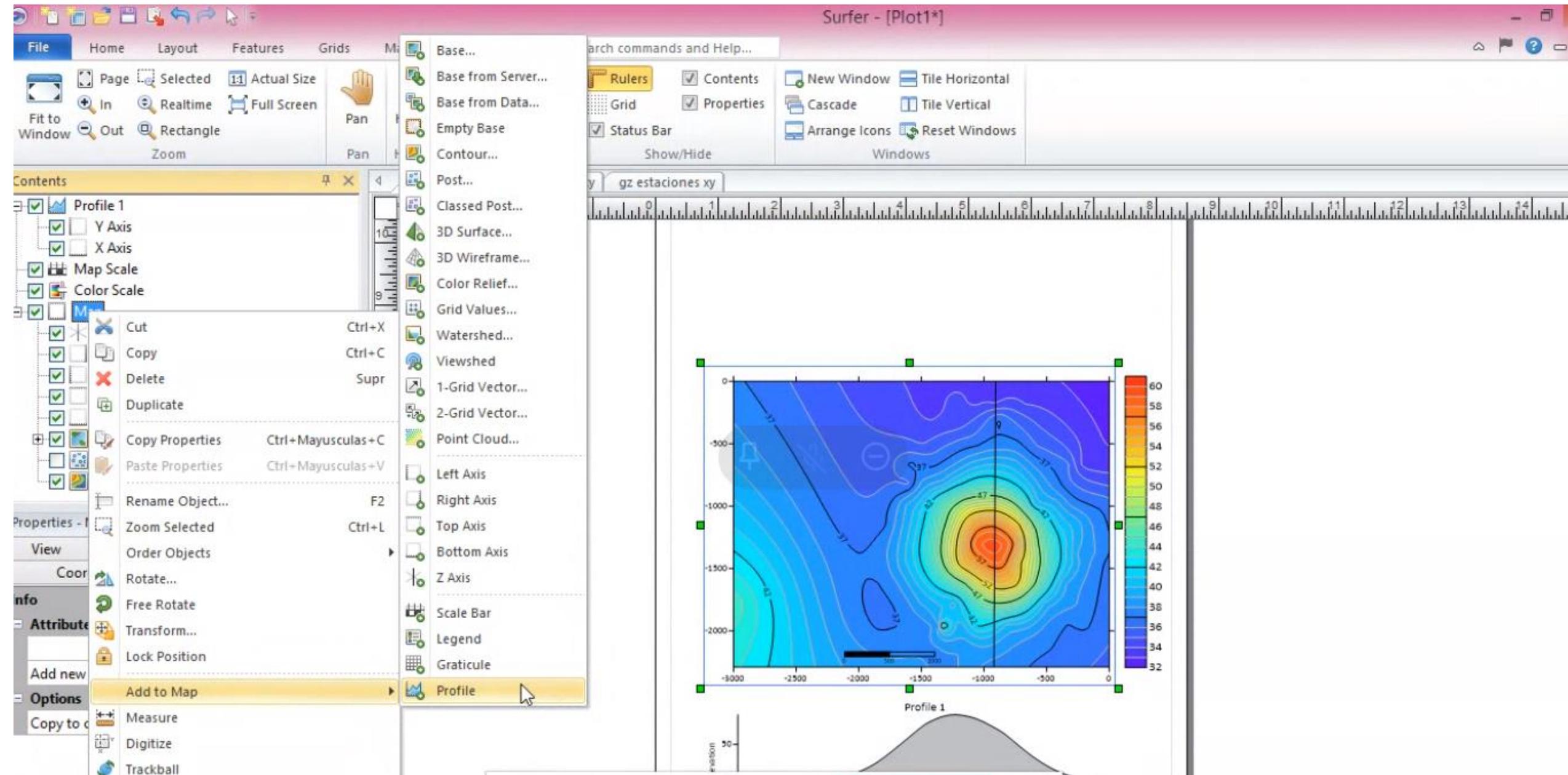
Opacity 42 %

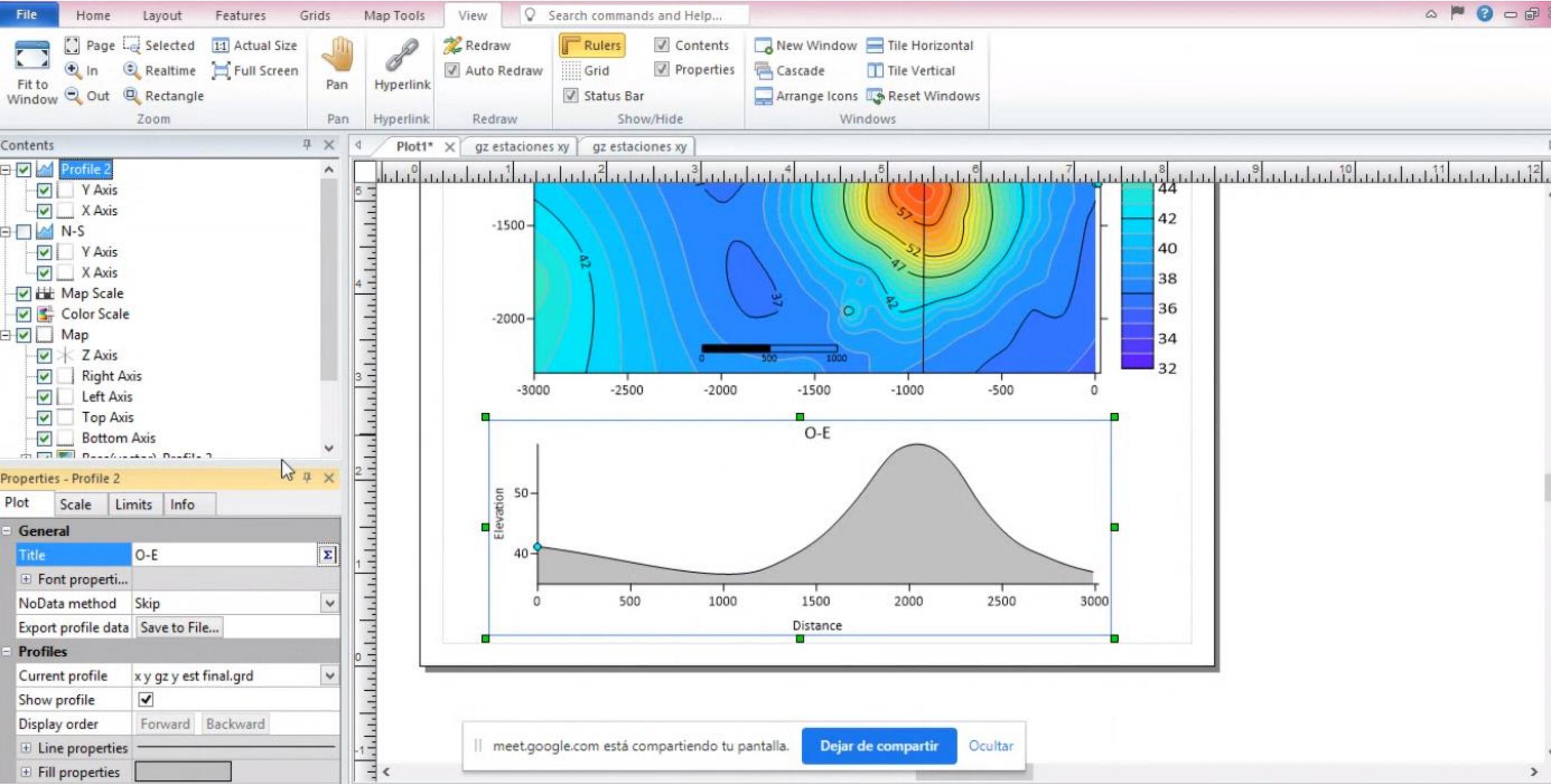












File Edit View Map Tools

Cut Ctrl+X  
Copy Ctrl+C  
Delete Supr  
Duplicate  
Copy Properties Ctrl+Mayusculas+C  
Paste Properties Ctrl+Mayusculas+V  
Rename Object... F2  
Zoom Selected Ctrl+L  
Order Objects  
Rotate...  
Free Rotate  
Transform...  
Lock Position  
Add to Map  
Measure  
Digitize  
Trackball  
3D View

Properties - Map

View	Scale	Limits	Frame
Coordinate System			Info

Info

Attributes

No attributes available

Add new attribute Add...

Options

Copy to clipboard Copy

Surfer - [Plot1:1\*]

Map Tools View Search commands and Help...

Select Select All Transform Grid Data Map Wizard Base Contour Post 3D Surface Color Specialty Layer Graphic Text Polyline Polygon Help Knowledge Base

Plot1:1\* x gz estaciones xy gz estaciones xy Plot1:2\*

Environment

- Surfaces
  - xy gz y est final.grd
- Vector Data
  - Contours-x y gz y est final.grd
- Axes
  - X Axis
  - Y Axis
  - Z Axis

Properties - Environment

General Camera Lighting

General

Background mo...	Skybox
Skybox	Tropical sunny day
Vertical exagger...	27.734
Reset vertical ex...	Reset
Water	<input type="checkbox"/>
Water level	45.77
Water color	Navy Blue
Water opacity	100 %

