

地震解释平面数据显示

汇报人：董文学

中国石油东方物探公司物探技术研究中心
中油油气勘探软件国家工程研究中心

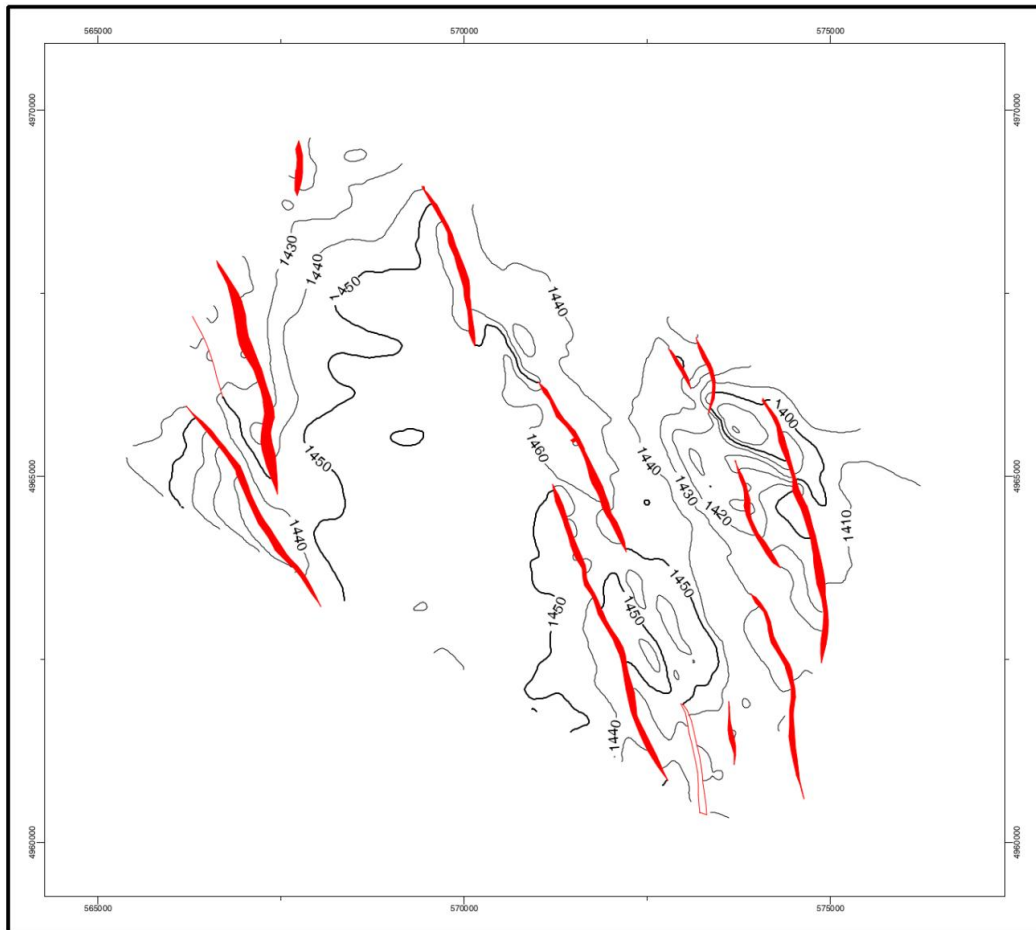
2026年7月28日

GeoFrac

- 一、基础构造类平面
- 二、断层定量参数平面
- 三、速度与地层压力平面
- 四、地震属性平面
- 五、沉积储层平面
- 六、地层不融合与特殊地质平面
- 七、井震结合综合平面
- 八、辅助基础底图

1、基础构造类

等T0图（构造图）



等值线参数

Contour Layer Properties

Contour | Fault Polygon

Map Type

☒ Single Color ☐ Color Contour ☐ Fill Contour

Line

Color: Black Width(cm): Style: Bold Step: Bold Width(cm): Base Value:

Uphrow Side Line in Overlap Area

Color: Blue Style:

Downthrow Side Line in Overlap Area

Color: Dark green Style:

Smooth

☒ Showing Contour in Curve Spline Mode

Arithmetic Type: Arithmetic Factor:

Label

☒ Show Contour Label ☐ Ignore User Defined Label ☐ Reverse Label

Color: Black Size(cm): Font: Label Step: Start Index: Interval:

Limiting Display

☐ Limiting Contour Display

Boundary: Type:

Data Information

Contour Name	:	0630-10630-1wt1.ls.grid.smo.con
Contour Number	:	93
Contour Interval	:	10.0000
Minimum Value	:	1360.00
Maximum Value	:	1480.00

OK Apply Cancel

断层组合线参数

Contour Layer Properties

Contour | Fault Polygon

Uphrow Side

Color: Red Width(cm): Reverse Style:

Downthrow Side Level 1

Color: Yellow Width(cm): Style:

Downthrow Side Level 2

Color: Blue Width(cm): Style:

Downthrow Side Level 3

Color: Cyan Width(cm): Style:

Downthrow Side Level 4

Color: Magenta Width(cm): Style:

Reverse Fault Polygon in Downthrow Side

Color: Red Width(cm): Style:

Fill

☒ Fill Closed Fault Polygon Fill Color: Red

Smooth

☒ Showing Fault Polygon Red

Control Angle: Arithmetic Factor:

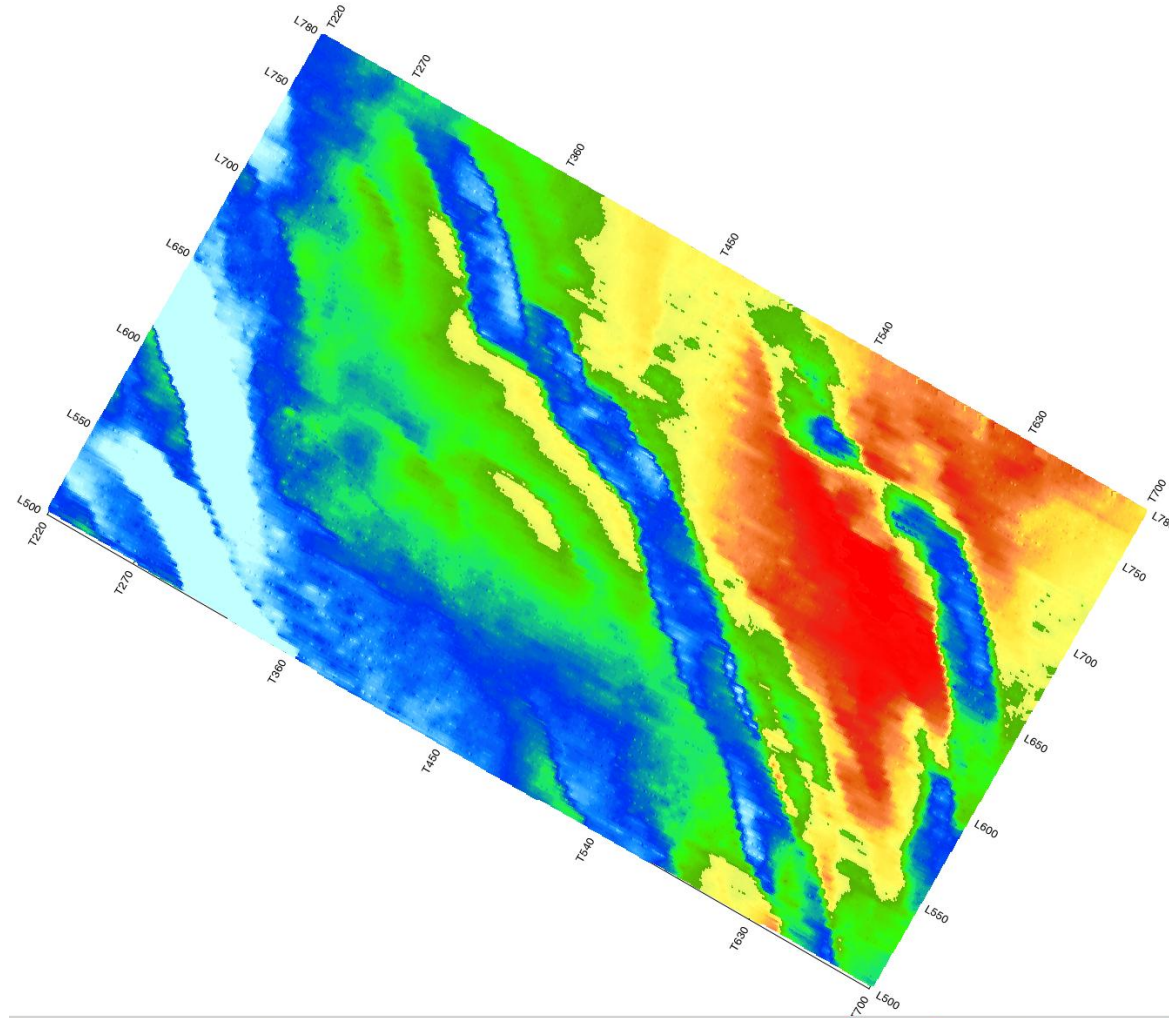
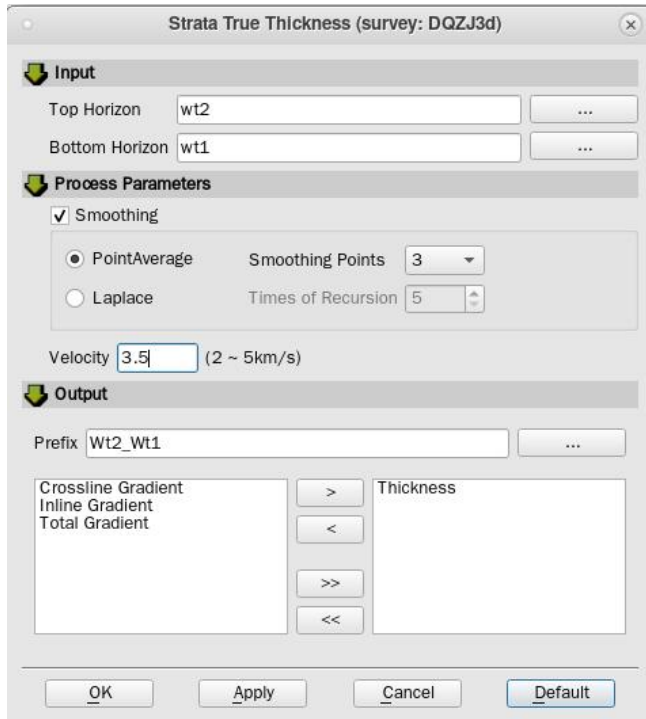
Symbol

Color: PushButton Line Width(cm): Type:

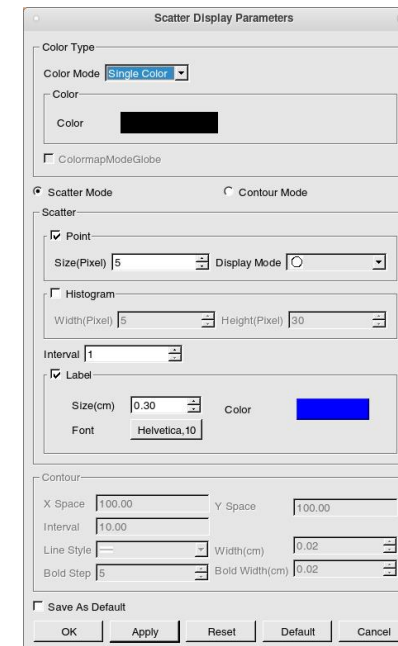
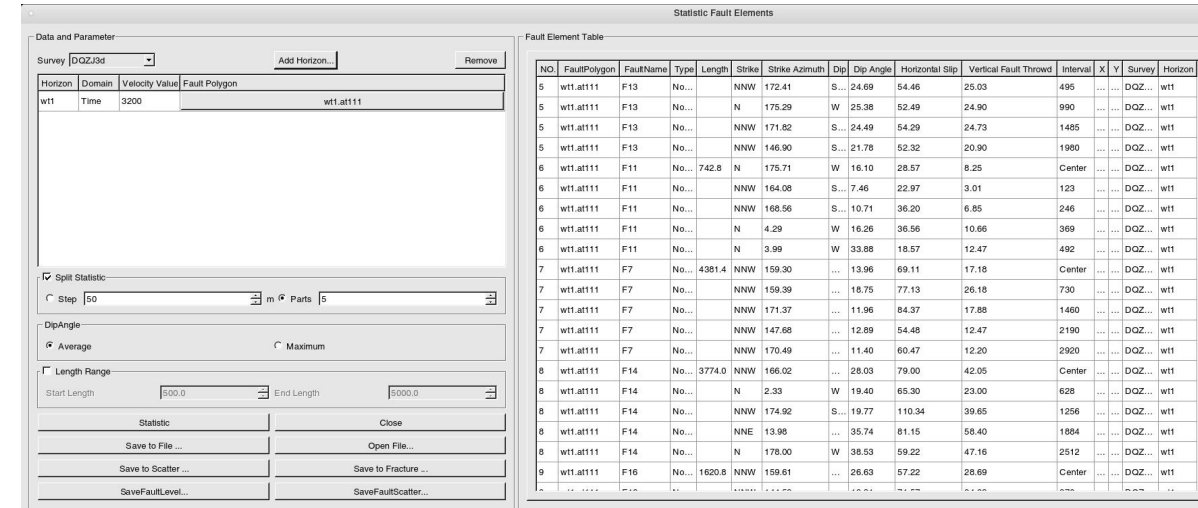
OK Apply Cancel

1、基础构造类

地层厚度图，反映沉积厚薄变化，识别古河道、扇体、凹陷沉降中心等



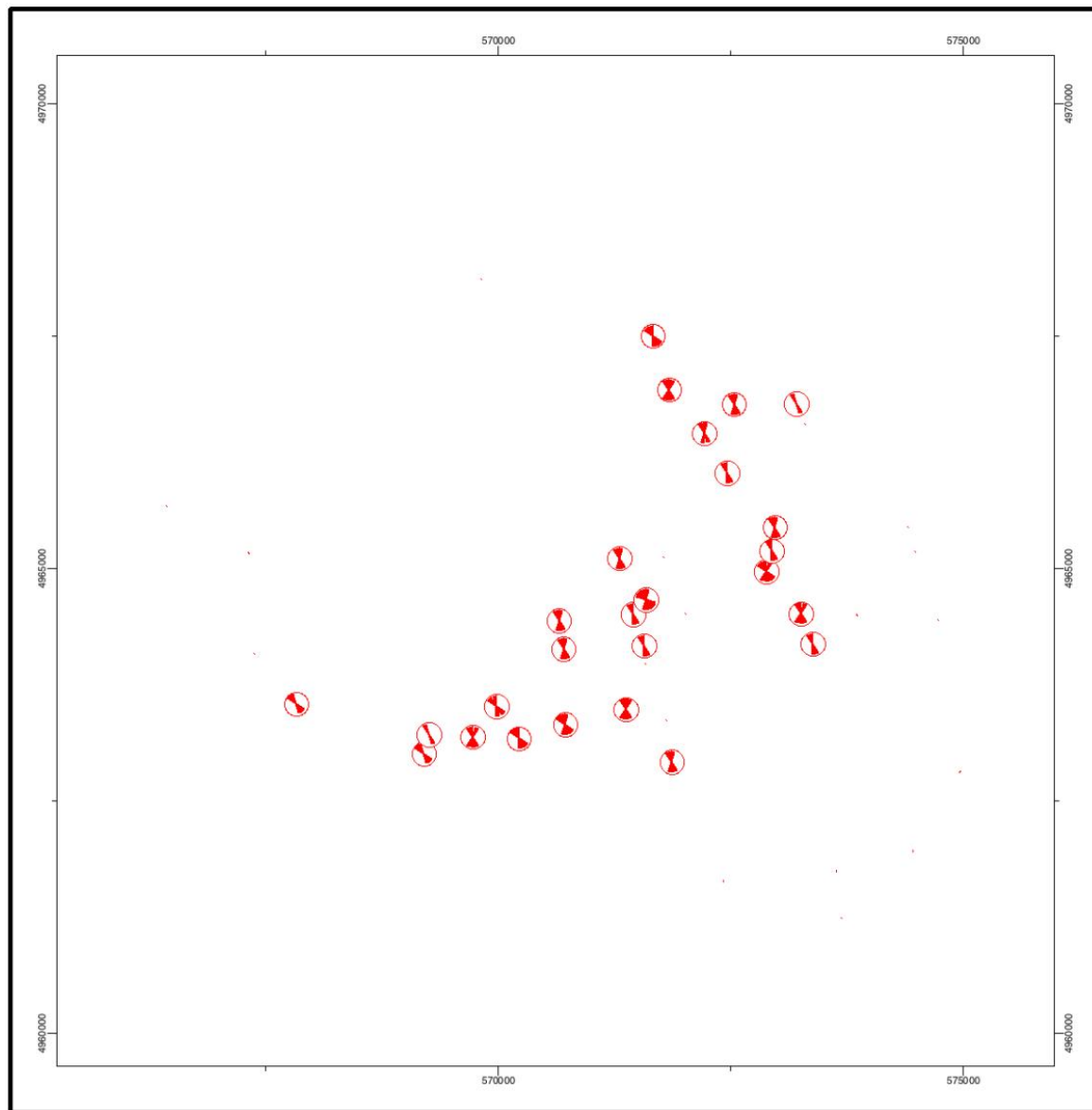
- Pick Polygon
- Delete In Polygon
- Delete Out Of Polygon
- Delete With FaultPolygons
- Delete With Boundaries
- Smooth
- Interpolation
- Save
- Save As
- Exit



平面投影
分段标注断层要素
断层性质等

2、断层定量参数平面

1、裂缝ASCII图显示与调整



Fracture Map Properties

Stick | Point | Rose Diagram

☒ Show Rose Diagram ☐ Show Spider Diagram

Rose Diagram

Value Mode: Average Color Type: Fixed Fixed Color: Red

☒ Show Petal Edge

Edge Width: 0.02 Edge Color: Red Edge Style: —

Stick Diagram

Value Mode: Average Color Type: Fixed Fixed Color: Red

Line Width(cm): 0.01 Line Style: —

☐ Show Spider Diagram Edge

Edge Width(cm): 0.01 Edge Color: Red Edge Style: —

Diagram Boundary

☒ Show Diagram Boundary ☐ Show Diagram Grid

Line Width(cm): 0.01 Line Color: Red Line Style: —

Boundary Radius(cm): 0.25 Background: White

Filter

Value Mode: Every Intensity

Threshold Type: > Threshold Value Azimuthal Angle: 0

Statistical Parameter

Mode: Grid base Line&Trace Add a Rose Diagram by User Defined Area

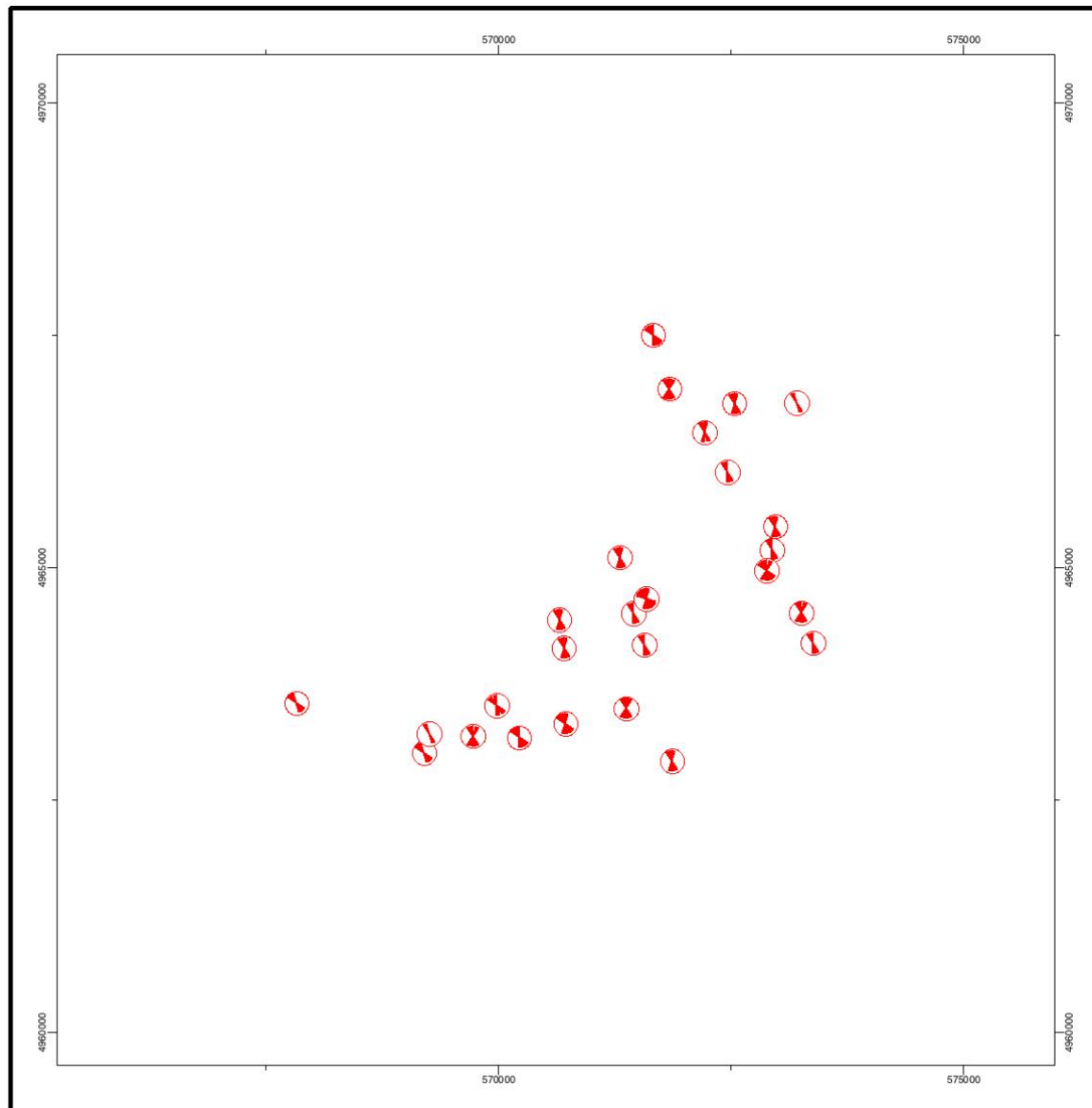
Number of Azimuth: 10 Start Angle: 0 End Angle: 180

Inline Interval: 10 Crossline Interval: 10 CMP Interval: 50

OK Apply Save as Default Save Statistical Data Cancel

2、断层定量参数平面

2、Azimuthal显示与调整



Fracture Map Properties

Rose Diagram

☒ Show Rose Diagram ☐ Show Spider Diagram

Rose Diagram

Value Mode: Average Color Type: Fixed Fixed Color: Red

☒ Show Petal Edge

Edge Width: 0.02 Edge Color: Red Edge Style: —

Stick Diagram

Value Mode: Average Color Type: Fixed Fixed Color: Red

Line Width(cm): 0.01 Line Style: —

☒ Show Spider Diagram Edge

Edge Width(cm): 0.01 Edge Color: Red Edge Style: —

Diagram Boundary

☒ Show Diagram Boundary ☐ Show Diagram Grid

Line Width(cm): 0.01 Line Color: Red Line Style: —

Boundary Radius(cm): 0.25 Background: White

Filter

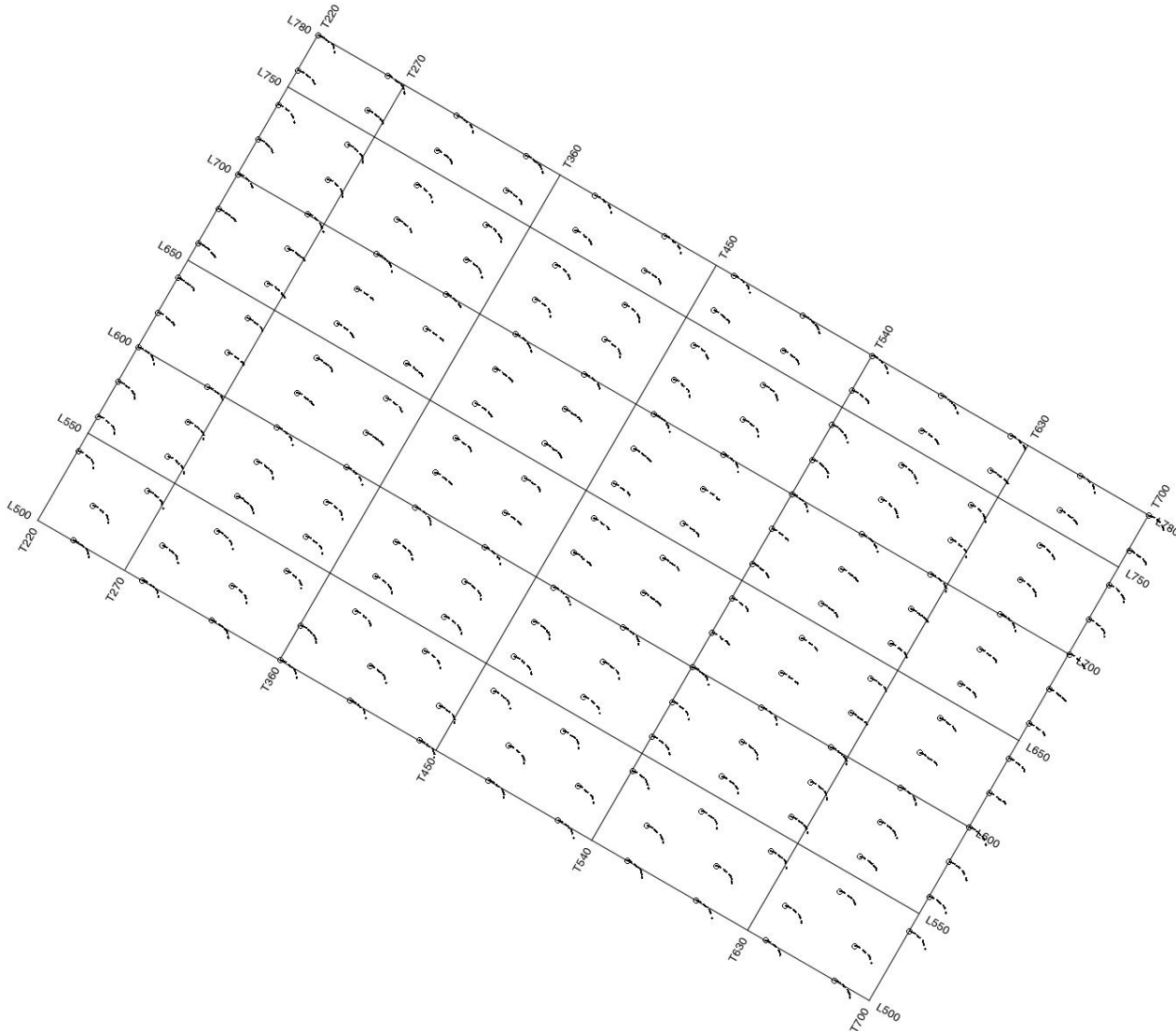
Value Mode: Every Intensity

Threshold Type: > Threshold Value Azimuthal Angle: 0

OK Apply Save as Default Cancel

3、速度与平成压力数据

1、均方根速度谱



Velocity Spectrum Checking...

Copy a Point

Copy Points along InLine

Copy Points along CrossLine

Pick Polygon

Delete In Polygon

Delete Out of Polygon

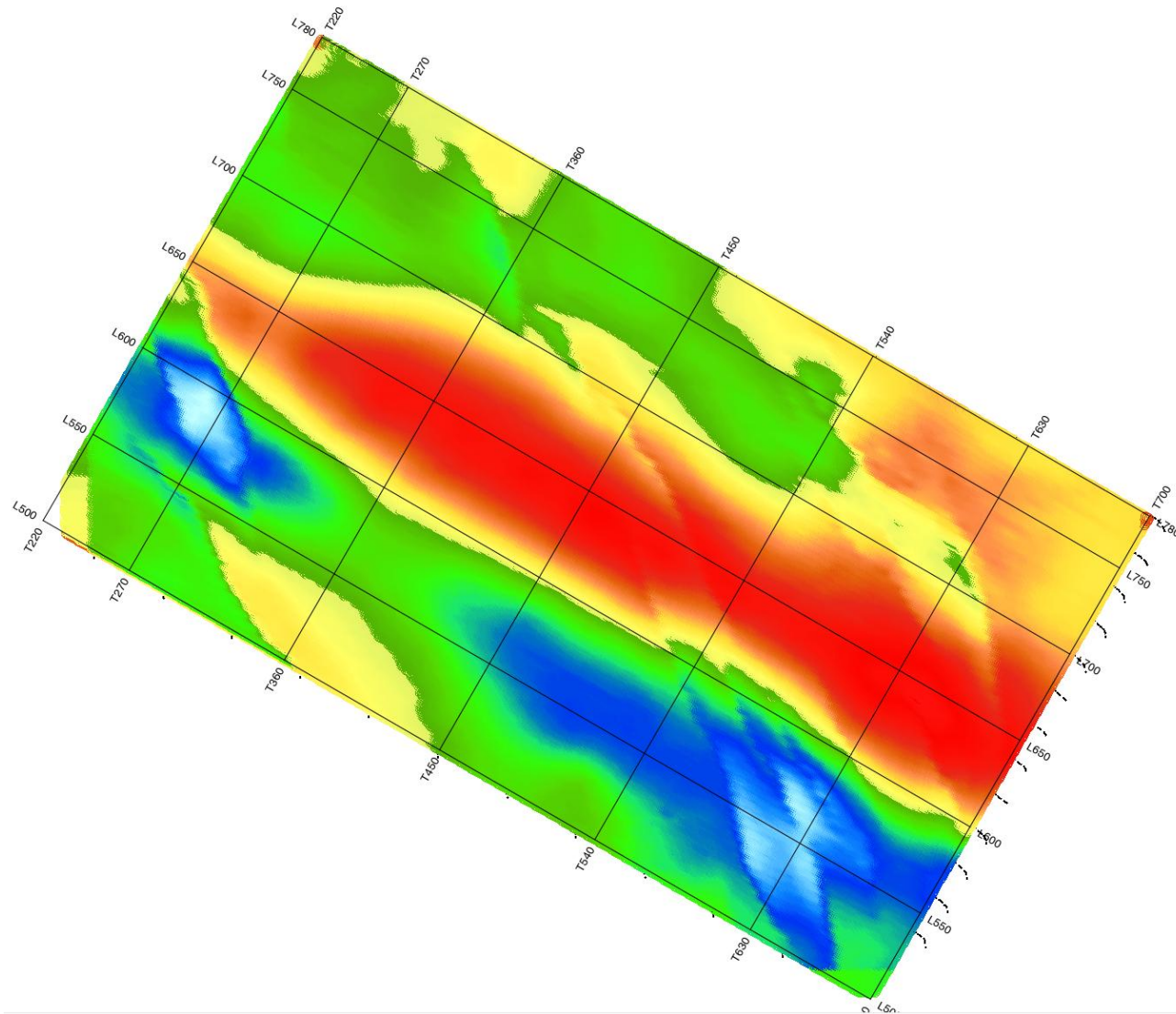
Ddelete With Boundaries

Save

Exit

3、速度与平成压力数据

2、平均速度、叠加速度、层速度等



Scatter Display Parameters

Color Type

Color Mode

Color

☐ ColormapModeGlobe

☒ Scatter Mode ☐ Contour Mode

Scatter

☒ Point

Size(Pixel) Display Mode

☐ Histogram

Width(Pixel) Height(Pixel)

Interval

☐ Label

Size(cm) Color

Font

Contour

X Space Y Space

Interval

Line Style Width(cm)

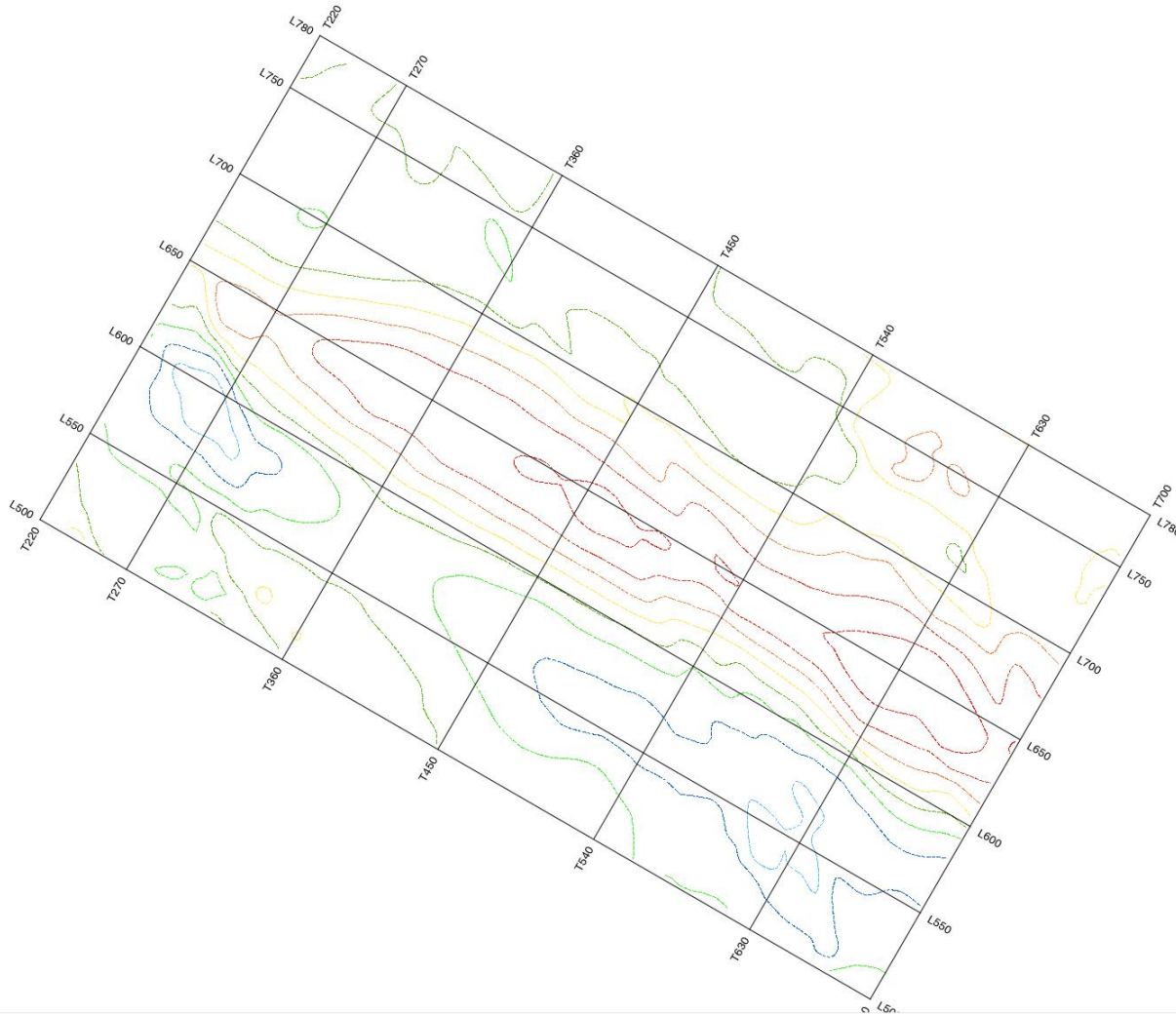
Bold Step Bold Width(cm)

☐ Save As Default

OK Apply Reset Default Cancel

3、速度与平成压力数据

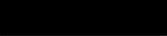
3、地层压力数据等



Scatter Display Parameters

Color Type

Color Mode **Multi Colors**

Color 

☐ ColormapModeGlobe

☒ **Scatter Mode** ☐ Contour Mode

Scatter

☒ Point

Size(Pixel) **10** Display Mode 

☐ Histogram

Width(Pixel) **5** Height(Pixel) **30**

Interval **1**

☐ Label

Size(cm) **0.30** Color 

Font **Helvetica, 10**

Contour

X Space **100.00** Y Space **100.00**

Interval **20**

Line Style  Width(cm) **0.02**

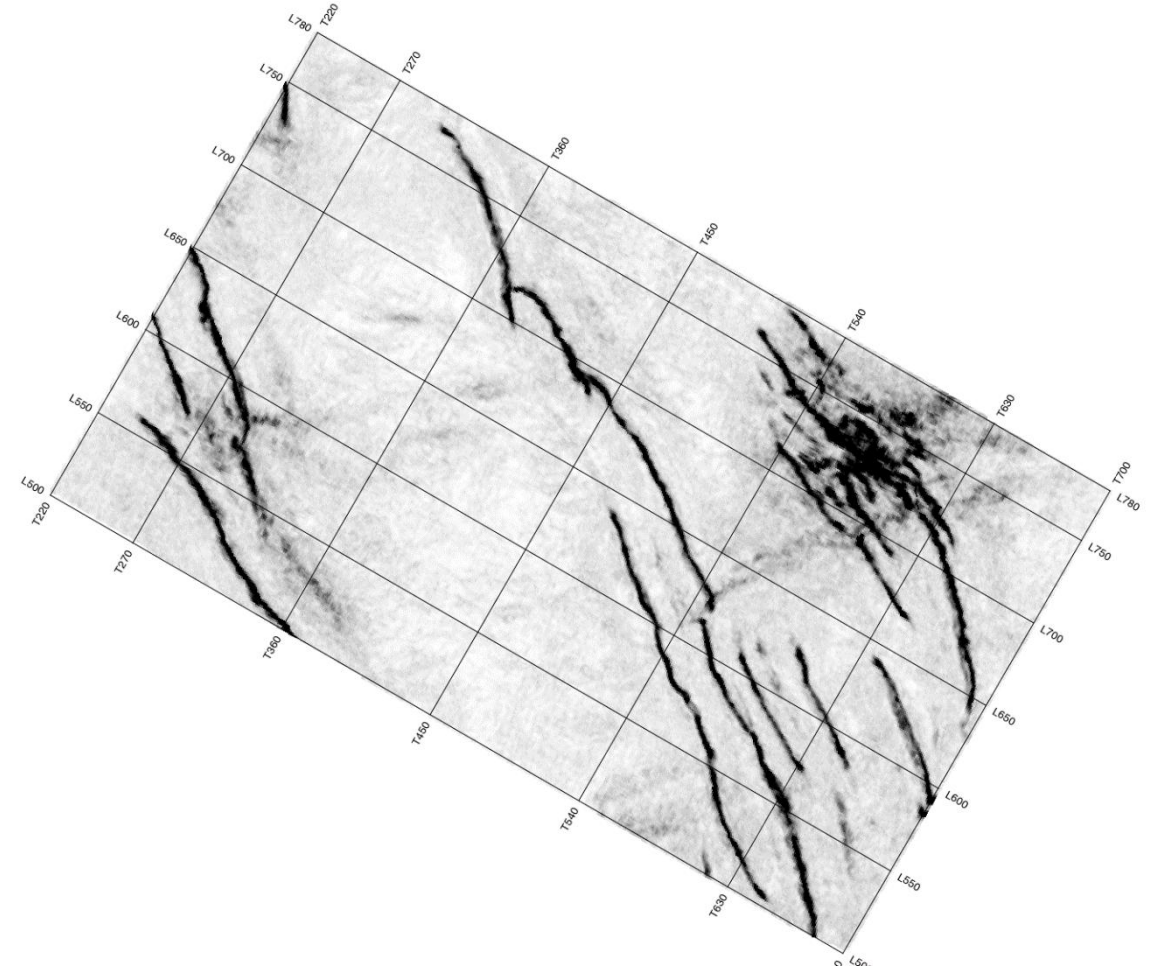
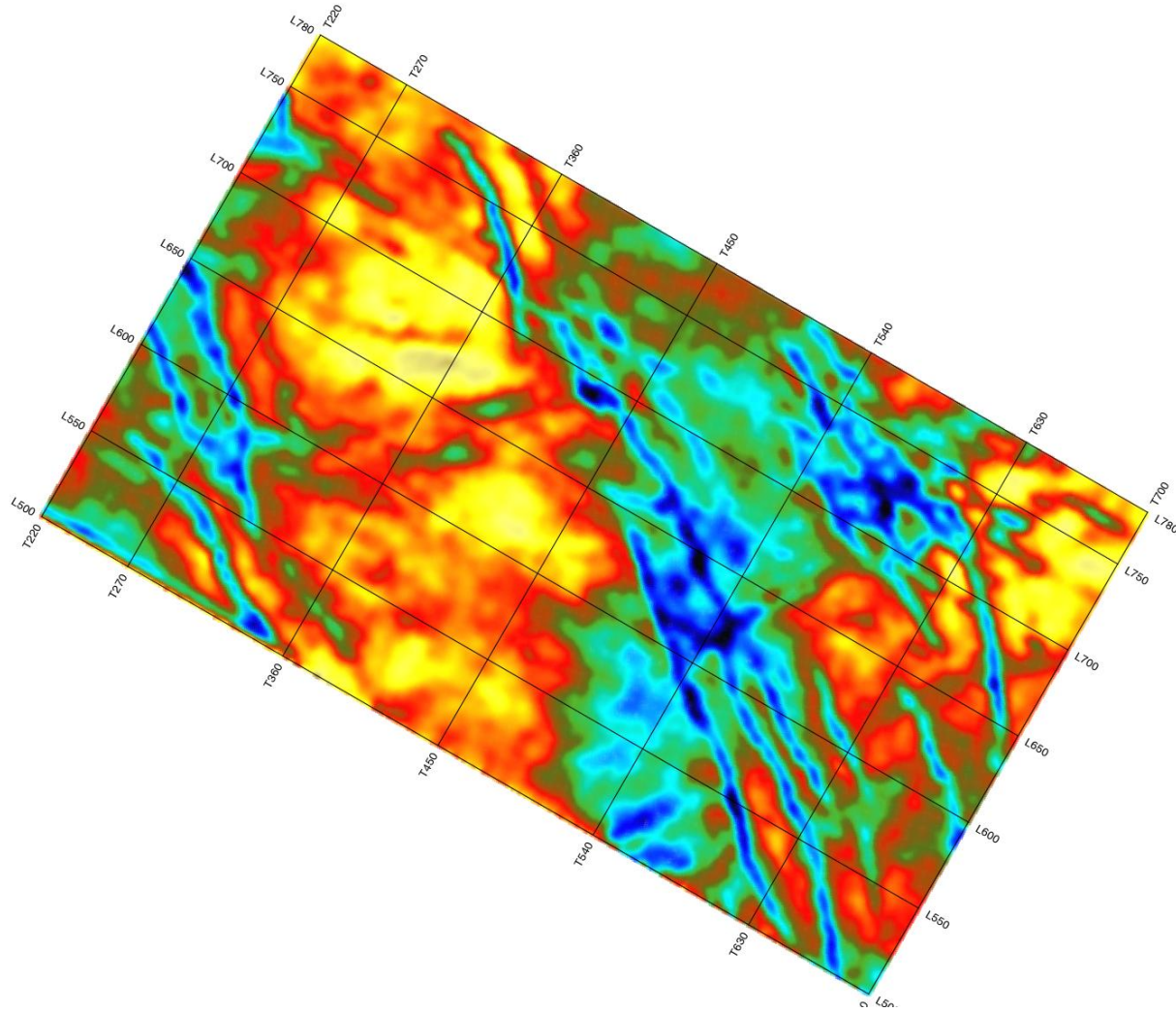
Bold Step **5** Bold Width(cm) **0.02**

☐ Save As Default

OK Apply Reset Default Cancel

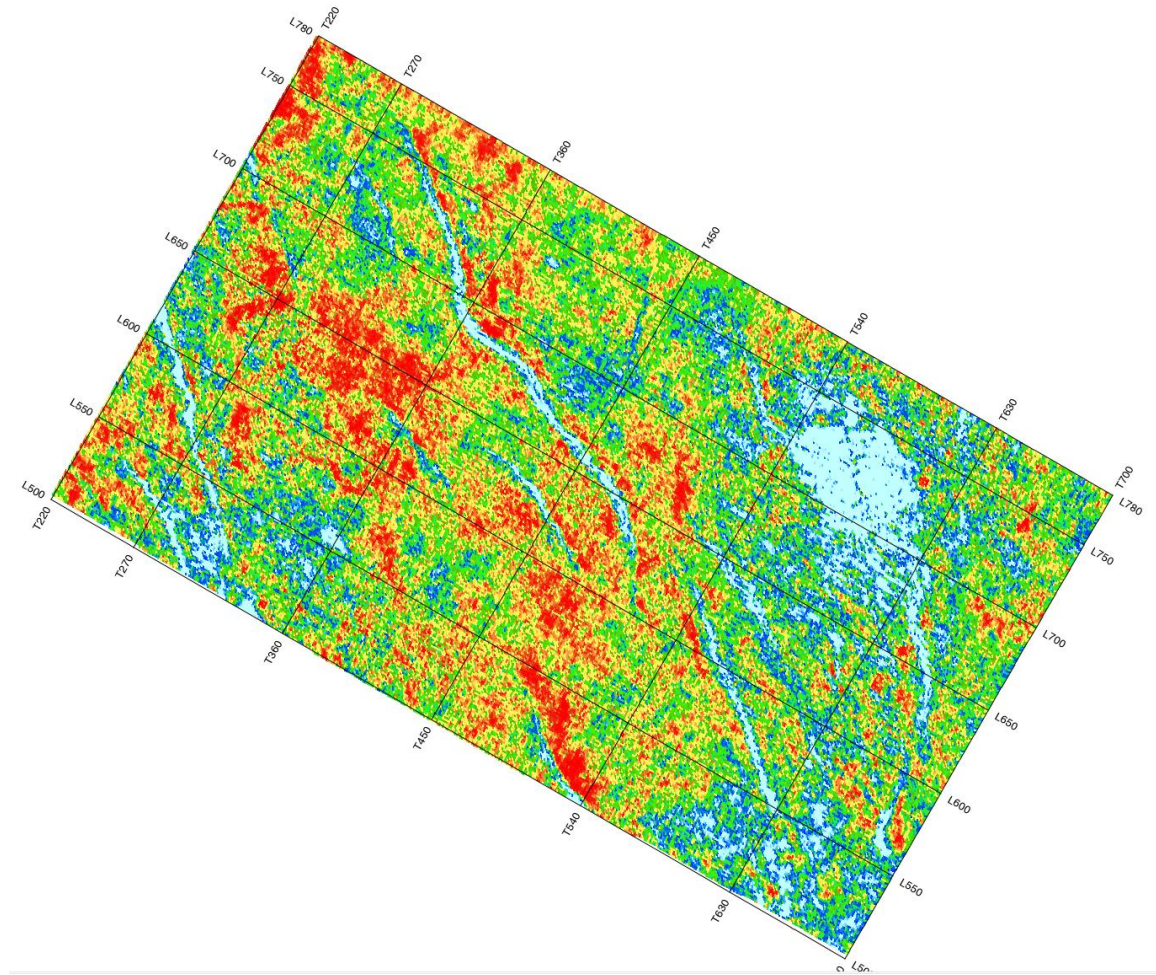
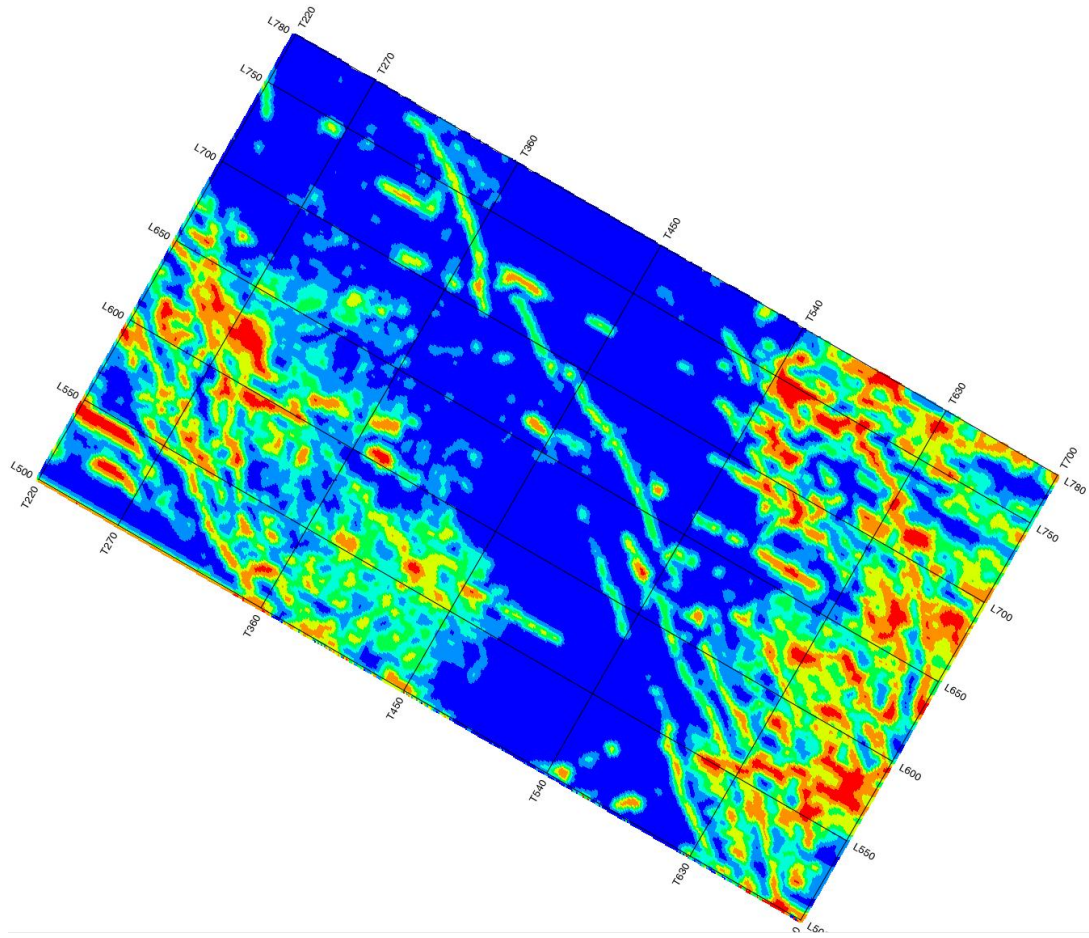
4、地震属性平面数据

振幅类、频率类、相位类、波形类、断裂属性、AVO和叠前属性等



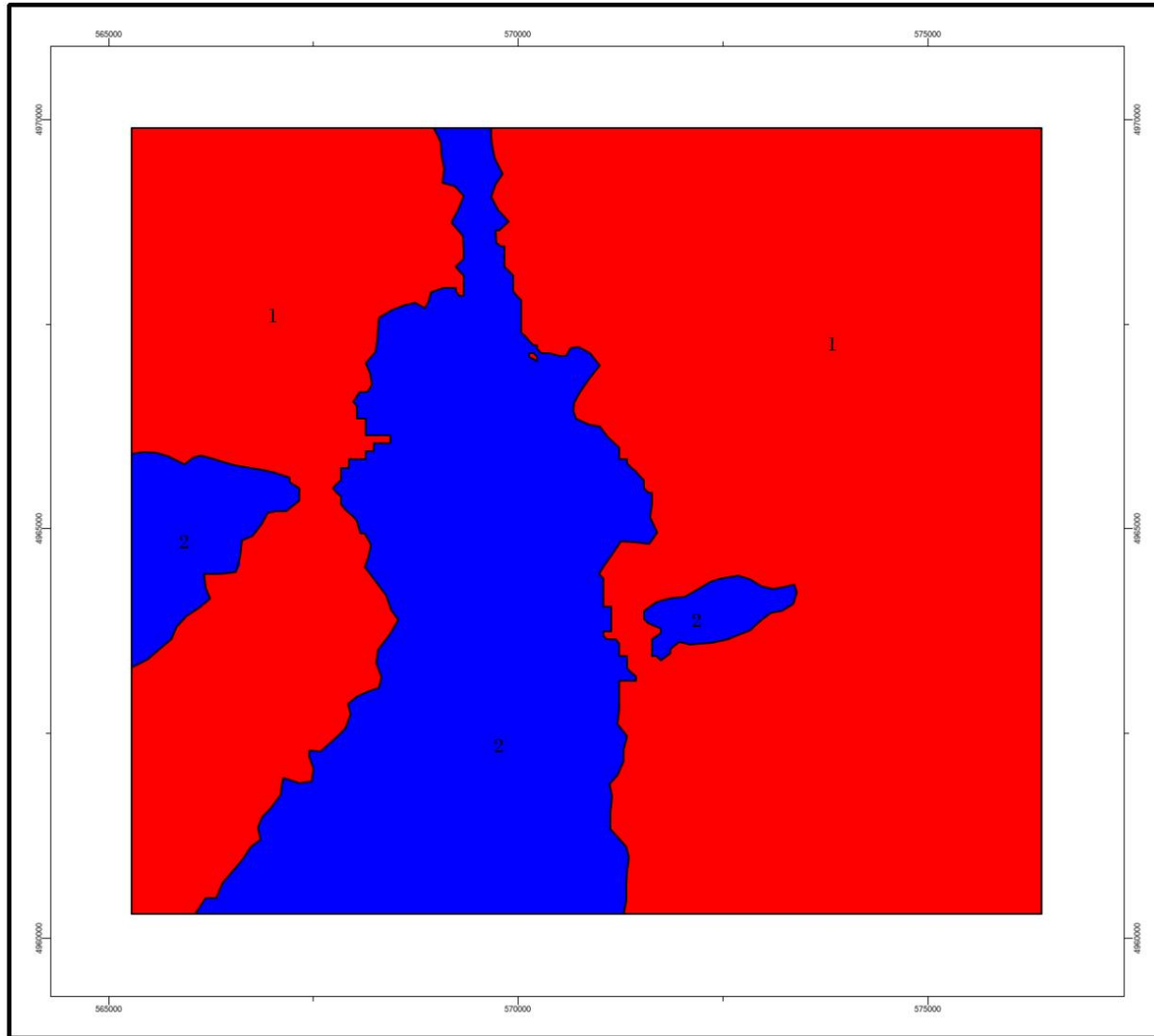
5、沉积储层类平面数据

地震相、砂体厚度、孔隙度、渗透率、含油气概率等



5、沉积储层类平面数据

Sedimentary Facies平面沉积相数据显示



Sedimentary Facies Layer Properties

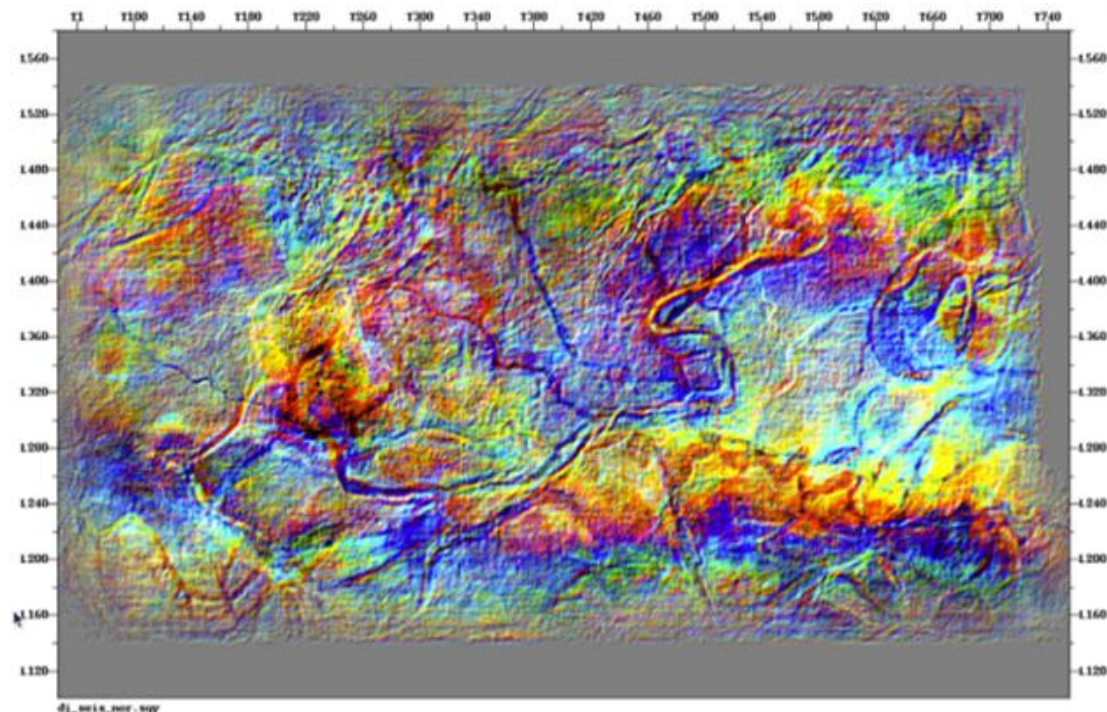
Line Width(cm) Line Color

☒ Show Facies Level

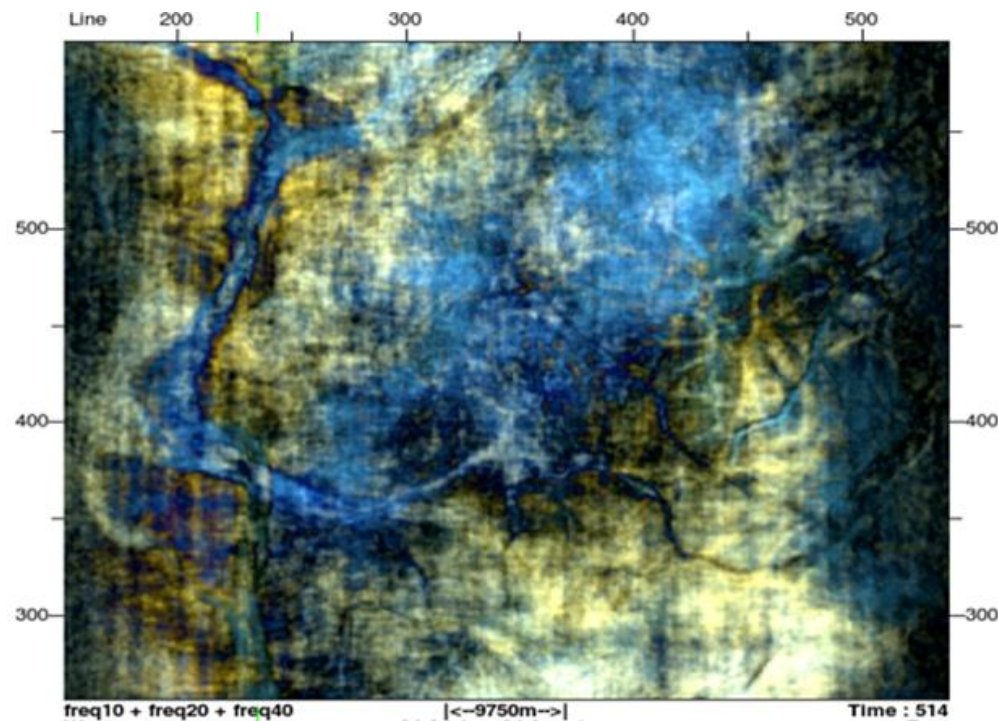
Level Font Level Size(cm)

Level Color

6、地层不整合和特殊地质体平面数据



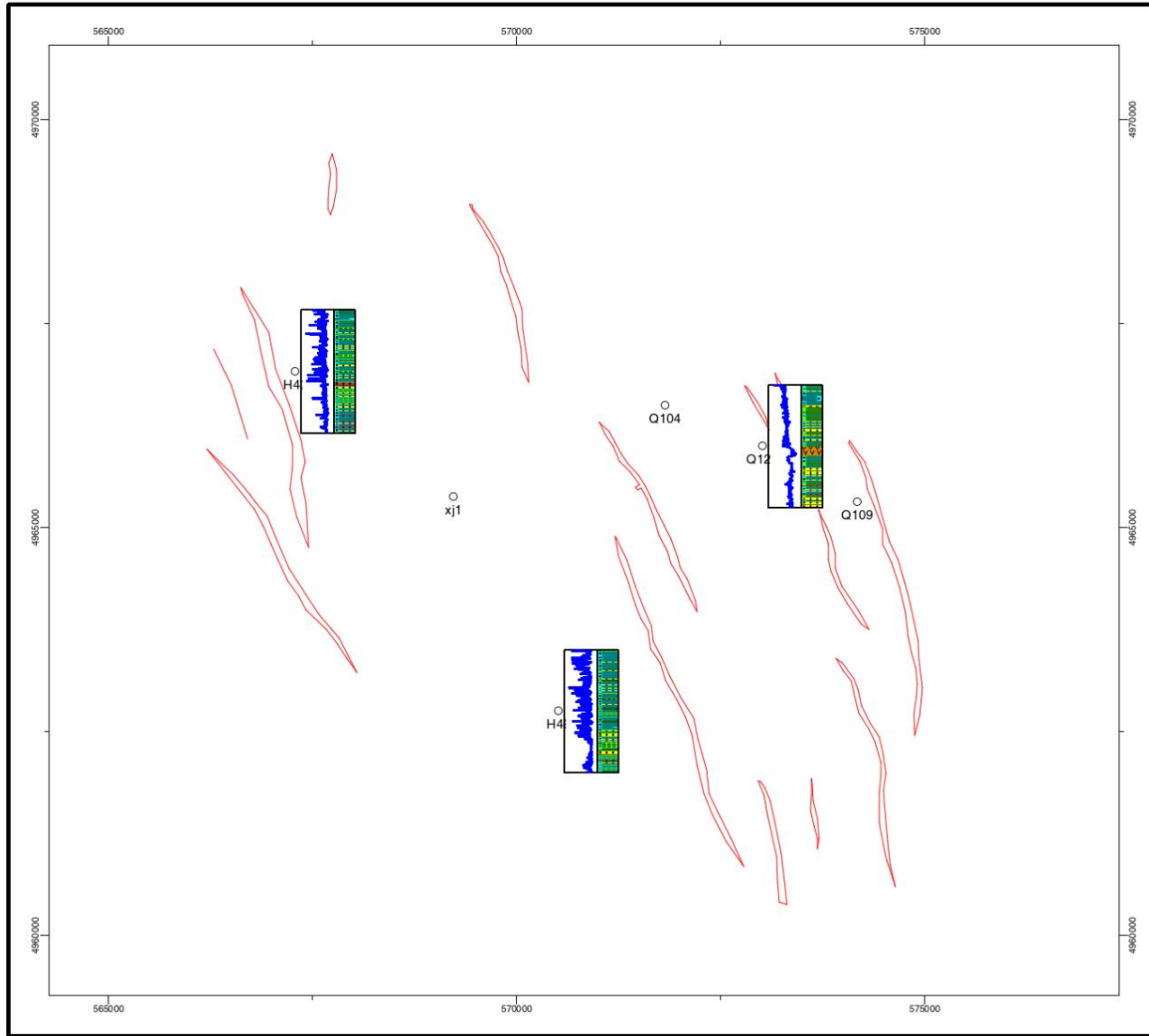
三属性RGB融合



多属性颜色比例融合

7、井震结合综合平面数据

井曲线及岩性数据显示与调整



Well Curve Lith Layers Properties

Border

Position: Top Graph Height(cm): 3.00

X Offset(cm): 0.00 Y Offset(cm): 0.80

Line Width(cm): 0.02 Line Style: [Solid Line]

Line Color: Black

☒ **Well Curve Graph**

Graph Width(cm): 0.80 Background Color: White

Line Width(cm): 0.03 Line Style: [Solid Line]

Line Color: Blue

☒ **Well Lith Graph**

Graph Width(cm): 0.50 Background Color: White

☐ **Connecting Line**

Line Color: Black Line Style: [Solid Line]

Line Width(cm): 0.02 Arrow Type: [Arrow]

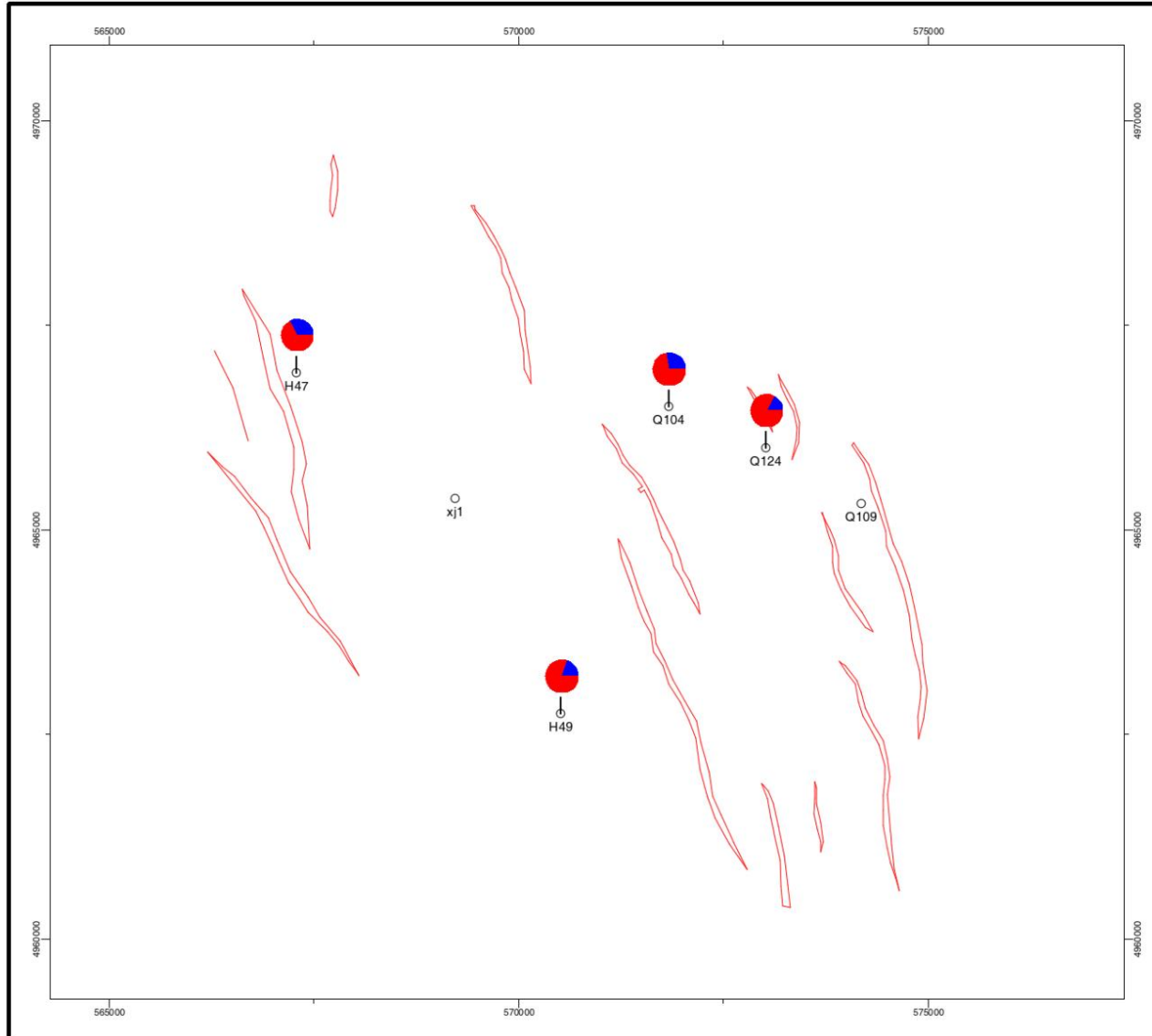
☐ **Well Curve Global Size**

	Position	X Offset(cm)	Y Offset(cm)
Q124	Right		
H47	Right		
H49	Right		

OK Apply Cancel

7、井震结合综合平面数据

油气水数据显示与调整



OilGasWater Layer Properties

☒ Pie Chart Mode ☐ Histogram Mode

Oil Gas Color: ■ Red Water Color: ■ Blue

Dry Color: ■ Yellow

Position: Top

X Offset(cm): 0.00 Y Offset(cm): 0.80

Graph Width(cm): 0.80 Pie Chart Height(cm): 0.80

Histogram Height(cm): 0.50

☒ Connecting Line

Line Color: ■ Black Line Style:

Line Width(cm): 0.02 Arrow Type:

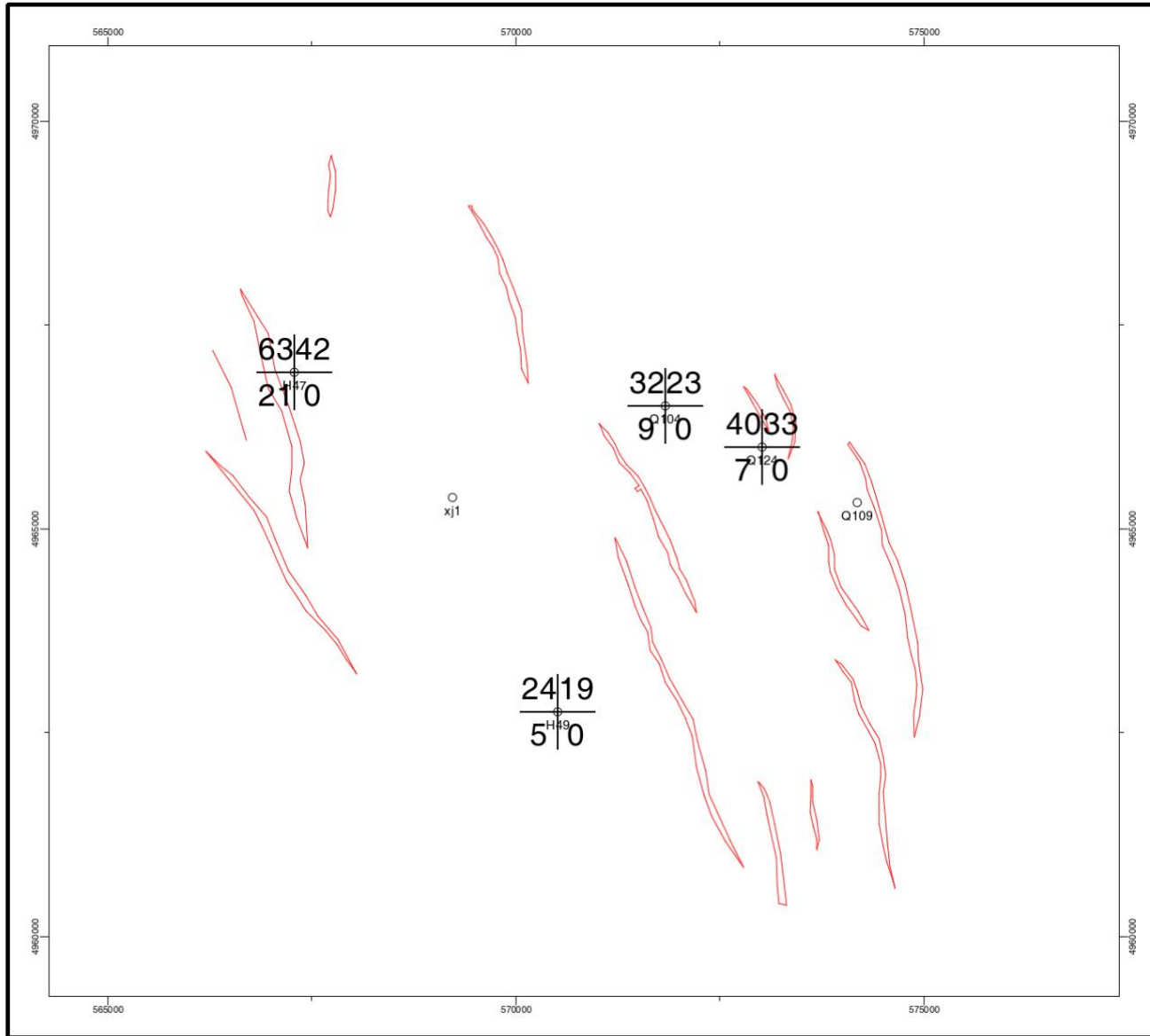
	Position	X Offset(cm)	Y Offset(cm)
H47	Top	0.00	0.80
H49	Top	0.00	0.80
Q124	Top	0.00	0.80
Q104	Top	0.00	0.80

OK Apply Cancel

7、井震结合综合平面数据



井数据显示与调整



Well Statistic Layer Properties

Position: Top X Offset(cm): 0.00 Y Offset(cm): 0.00

Cross Line Color: Black Cross Line Style: Cross Line Width(cm): 0.05

Value Color: Black Value Size(cm): 0.80 Value Font: Helvetica

Value Precision: 0

☐ Connecting Line

Line Color: Black Line Style: Line Width(cm): 0.02 Arrow Type: Arrow

Value(Top Left): Thickness(OGW) Value(Top Right): Thickness(Oil/Gas)

Value(Bottom Left): Thickness(Water) Value(Bottom Right): Thickness(Dry)

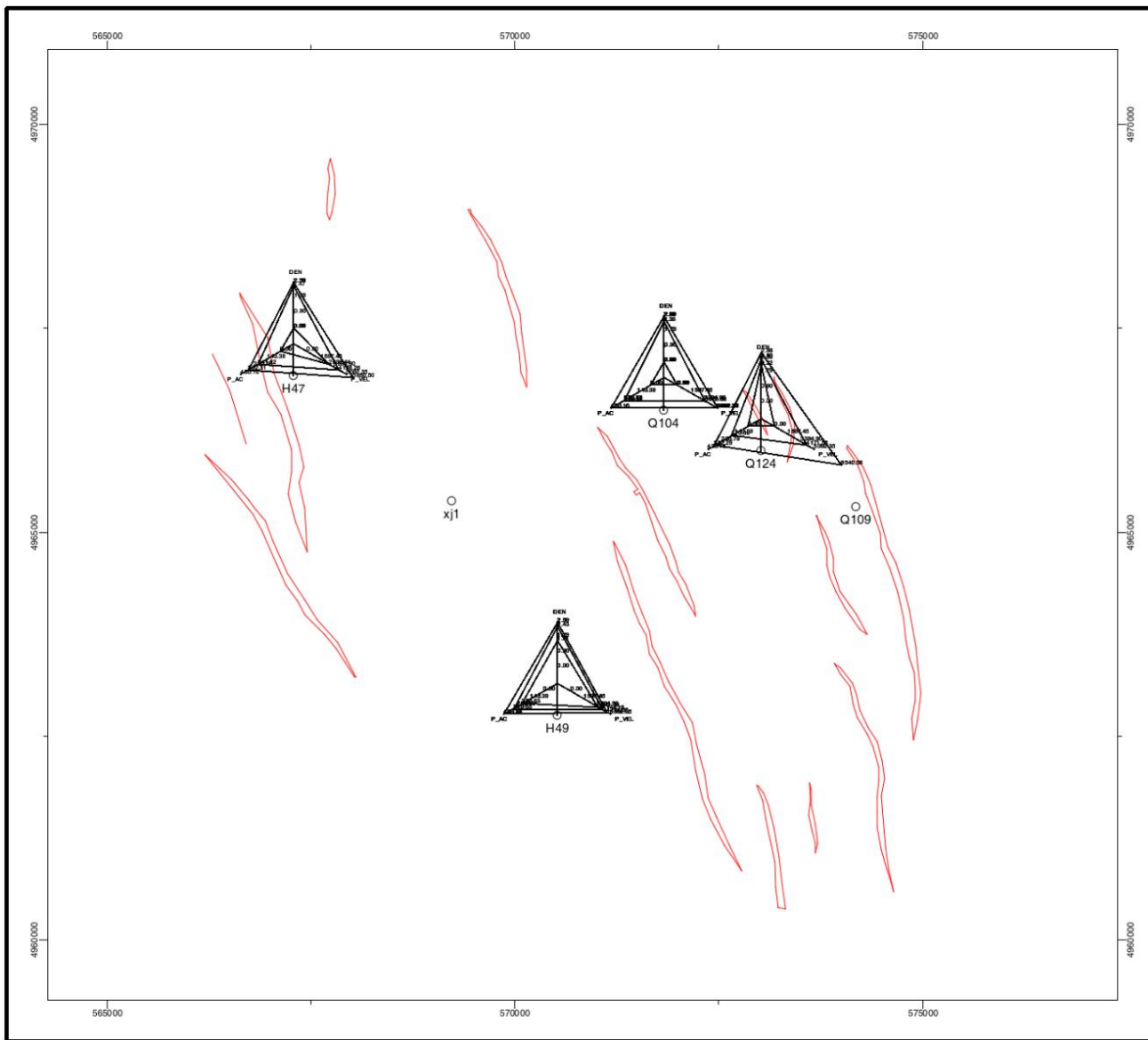
	Position	X Offset(cm)	Y Offset(cm)
H47	Top	0.00	0.00
H49	Top	0.00	0.00
Q124	Top	0.00	0.00
Q104	Top	0.00	0.00

OK Apply Cancel

7、井震结合综合平面数据



井数据蜘蛛图显示与调整



Well Spider Layer Properties

Graph Settings | Coordinate and Connecting Line | Value Settings

Position: Top X Offset(cm): 0.00 Y Offset(cm): 0.80
Scale Count: 3 Circle Radius(cm): 3.00 Text Size(cm): 0.15
Value Precision: 2

☒ Connecting Line
Line Color: Black Line Style: Solid
Line Width(cm): 0.02 Arrow Type: None
☒ Start from Graph Center

☒ P_AC ☒ DEN ☒ P_VEL

	Position	X Offset(cm)	Y Offset(cm)
H49	Top	0.00	0.80
Q124	Top	0.00	0.80
Q104	Top	0.00	0.80

OK Apply Cancel

Well Spider Layer Properties

Graph Settings | Coordinate and Connecting Line | Value Settings

☒ Coordinate Line
Line Color: Black Line Style: Solid Line Width(cm): 0.02
Text Color: Black Text Font: Helvetica
☒ Show Coordinate Name

☒ Coordinate Circle
Line Color: Black Line Style: Solid Line Width(cm): 0.02

Parameter Name
Text Color: Black Text Font: Helvetica

☒ P_AC ☒ DEN ☒ P_VEL

	Position	X Offset(cm)	Y Offset(cm)
H49	Top	0.00	0.80
Q124	Top	0.00	0.80
Q104	Top	0.00	0.80

OK Apply Cancel

Well Spider Layer Properties

Graph Settings | Coordinate and Connecting Line | Value Settings

☒ Minimum Value Line
Line Color: Black Line Style: Solid Line Width(cm): 0.02
Text Color: Black Text Font: Helvetica

☒ Maximum Value Line
Line Color: Black Line Style: Solid Line Width(cm): 0.02
Text Color: Black Text Font: Helvetica

☒ Average Value Line
Line Color: Black Line Style: Solid Line Width(cm): 0.02
Text Color: Black Text Font: Helvetica

☒ P_AC ☒ DEN ☒ P_VEL

	Position	X Offset(cm)	Y Offset(cm)
H49	Top	0.00	0.80
Q124	Top	0.00	0.80
Q104	Top	0.00	0.80

OK Apply Cancel

8、辅助基础平面数据



- | | |
|---------|-----------------|
| 1、散点数据 | 11、层位数据 |
| 2、网格数据 | 12、属性数据 |
| 3、等值线数据 | 13、任意线数据 |
| 4、断层组合线 | 14、裂缝数据 |
| 5、边界数据 | 15、ASCIi格式的裂缝数据 |
| 6、圈闭数据 | 16、方位裂缝数据 |
| 7、勘探部署图 | 17、平面沉积相数据 |
| 8、井数据 | |
| 9、井信息数据 | |
| 10、工区数据 | |

整套地震平面图件涵盖构造、断裂、速度压力、地震属性、沉积储层、特殊地质、井震综合及辅助底图八大系列，从构造格局、储层展布到工程参数，形成完整的平面可视化体系，支撑油气勘探综合评价。