

UNDERSEA FEATURE NAME PROPOSAL
(Sea NOTE overleaf)

Note: The boxes will expand as you fill the form.

Name Proposed:	Tell Qarqur Guyot	Ocean or Sea:	Central Pacific
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Proposer offers SCUFN/IHO/IOC to apply their own name to the feature if they have a name they wish to use

Supporting Documents can be downloaded from:

<https://www.dropbox.com/sh/3svqqao6hlm9vrq/AAA-FXFLMWk7MqQd9GDdLKPua?dl=0>

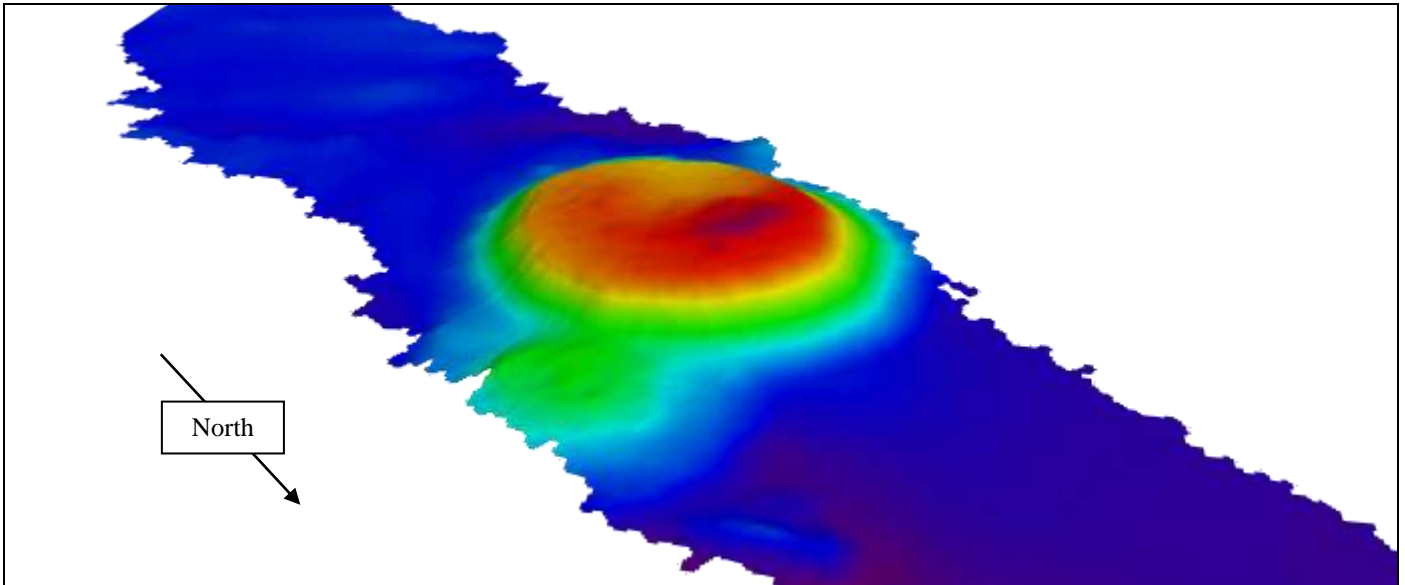


Image 001: 3D rendering of the proposed *Tell Qarqur Guyot* feature detailed in the following proposal [CARIS]

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 001.tif

4.6MB]

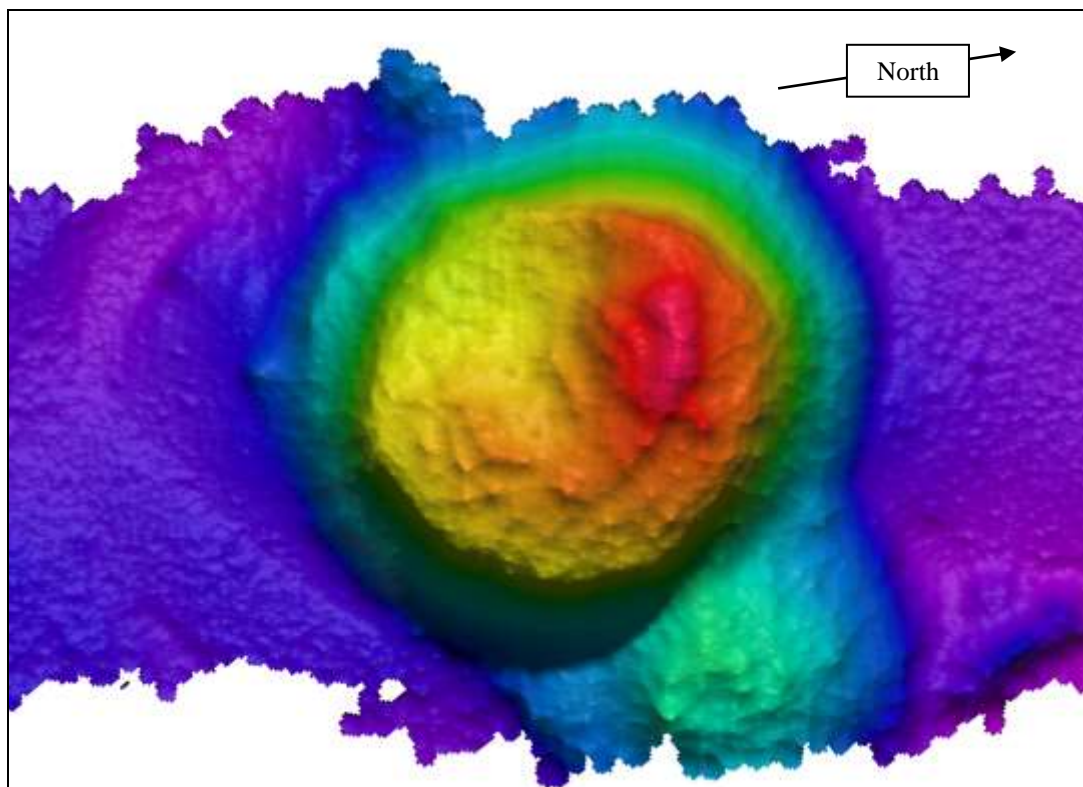


Image 002: Overview of the proposed *Tell Qarqur Guyot* feature detailed in the following proposal [Fladermaus Product]

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 002.tif

- 1.4MB]

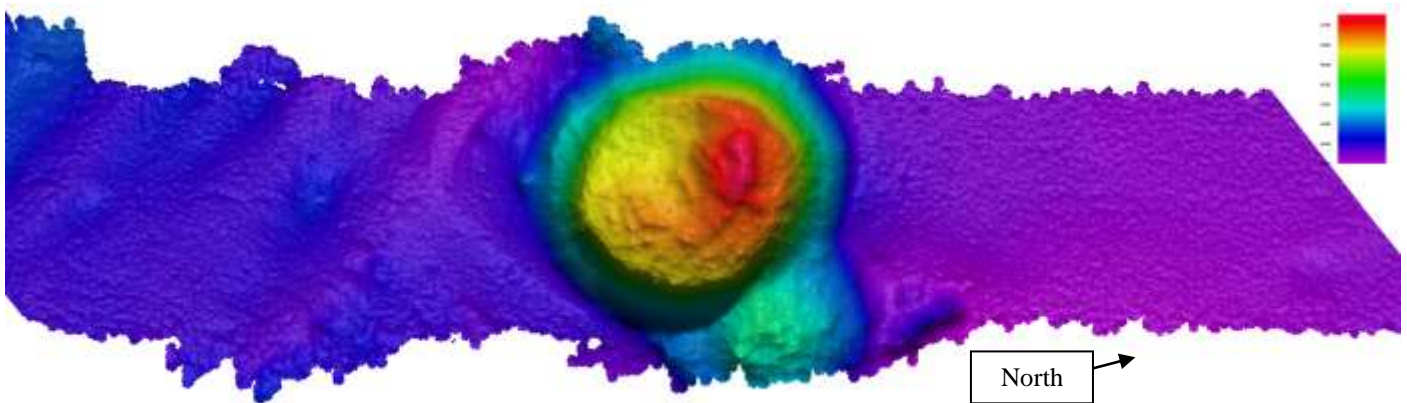


Image 003: Overview of the proposed *Tell Qarqur Guyot* feature detailed in the following proposal [Fladermaus Product]

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 002.tif

- 7.1 MB]

Geometry that best defines the feature (Yes/No) :						
Point	Line	Polygon	Multiple points	Multiple lines*	Multiple polygons*	Combination of geometries*
		Yes				

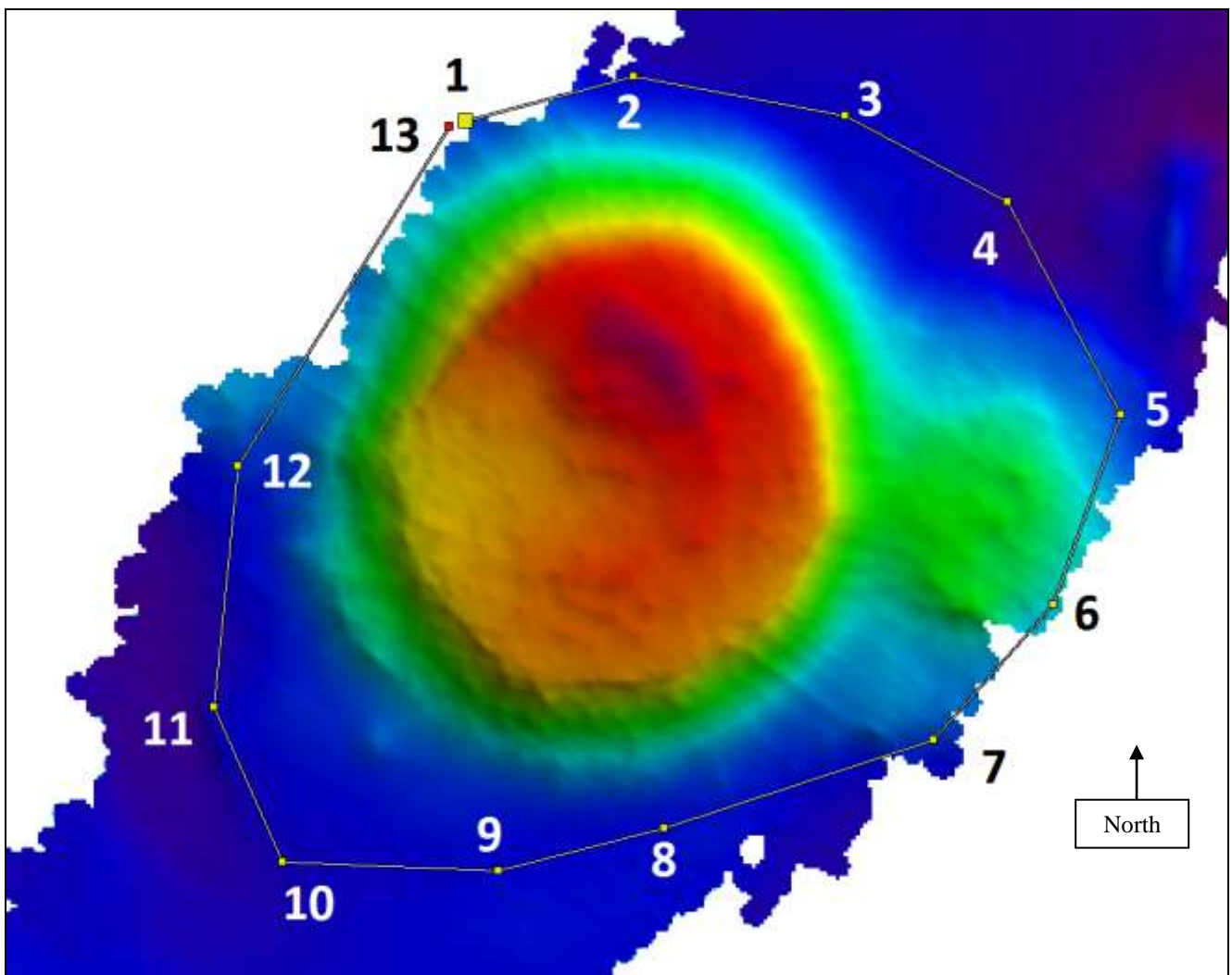


Image 004: Boundary perimeter of the proposed **Tell Qarqur Guyot** with 13 points defining the feature. Latitude and Longitude of individual points is given in the following table (Table 1.0)

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 004.tif

- 4.17 MB]

Table 1.0 - Points defining the outline of the proposed **Tell Qarqur Guyot feature shown in **Image 004****

This table contains the list of points that define the boundary of the proposed feature as specified in **Image 004**

	Lat DD MM.MMM	Lon DD MM.MMM	Lat DD.DDD	Lon DD.DDD	Lat DD MM SS.SS	Lon DD MM SS.SS	Total Distance
Position 1	05 14.568446S	143 11.249320W	-5.242807	-143.187489	S 5 14 34.11	W 143 11 14.96	0.00
Position 2	05 14.328411S	143 10.337206W	-5.238807	-143.172287	S 5 14 34.11	W 143 11 14.96	1742.34
Position 3	05 14.545934S	143 09.189965W	-5.242432	-143.153166	S 5 14 32.76	W 143 09 11.40	3899.59
Position 4	05 15.017599S	143 08.309856W	-5.250293	-143.138498	S 5 15 01.06	W 143 08 18.59	5743.46
Position 5	05 16.176478S	143 07.698356W	-5.269608	-143.128306	S 5 16 10.59	W 143 07 41.90	8159.74
Position 6	05 17.207415S	143 08.068790W	-5.286790	-143.134480	S 5 17 12.44	W 143 08 04.13	10179.32
Position 7	05 17.940750S	143 08.722298W	-5.299012	-143.145372	S 5 17 56.44	W 143 08 43.34	11991.61
Position 8	05 18.416144S	143 10.185716W	-5.306936	-143.169762	S 5 18 24.97	W 143 10 11.14	14833.62
Position 9	05 18.650252S	143 11.086084W	-5.310838	-143.184768	S 5 18 39.02	W 143 11 05.17	16552.03
Position 10	05 18.592699S	143 12.257646W	-5.309878	-143.204294	S 5 18 35.56	W 143 12 15.46	18718.99
Position 11	05 17.749044S	143 12.627475W	-5.295817	-143.210458	S 5 17 44.94	W 143 12 37.65	20417.39
Position 12	05 16.438567S	143 12.492640W	-5.273976	-143.208211	S 5 16 26.31	W 143 12 29.56	22845.49
Position 13	05 14.597795S	143 11.338183W	-5.243297	-143.188970	S 5 14 35.87	W 143 11 20.29	26852.92

The CARIS file containing information on each of the points is included in the supporting documentation for this proposal and can be found in the following file:

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 005.txt

- 2KB]

Table 2.0 - Point defining the center position of the proposed **Tell Qarqur Guyot feature**

This table contains the central position of the feature. This is NOT the summit of the feature which is given in Table 3.0

	Centre	Lat DD MM.MMM	Lon DD MM.MMM	Lat DD.DDD	Lon DD.DDD	Lat DD MM SS.SS	Lon DD MM SS.SS
Point	3849m	05 16.419821S	143 10.446868W	-5.273664	-143.174114	S 5 16 25.19	W 143 10 26.81

Table 3.0 - Coordinates for summit (shallowest point) of the proposed **Tell Qarqur Guyot feature**

This table contains the position information for the shallowest sounding of the feature

	Summit	Lat DD MM.MMM	Lon DD MM.MMM	Lat DD.DDD	Lon DD.DDD	Lat DD MM SS.SS	Lon DD MM SS.SS
Summit	3669m	05 15.963097S	143 10.108068W	-5.266052	-143.168468	S 5 15 57.79	W 143 10 06.48

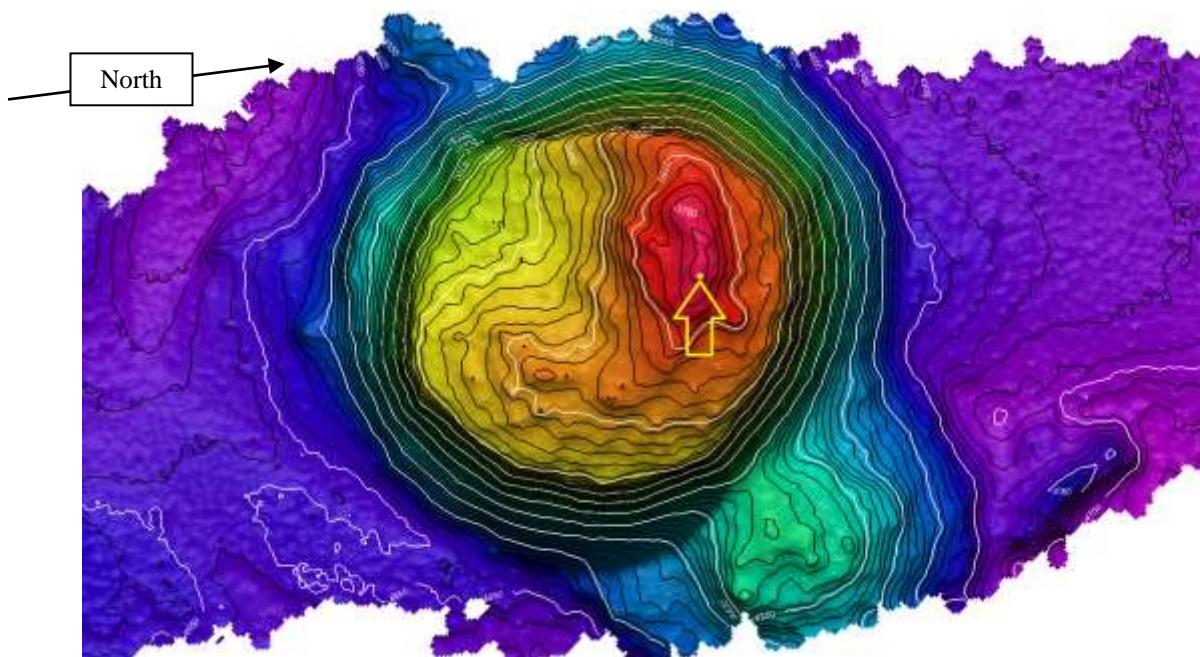


Image 005: Overview of the proposed **Tell Qarqur Guyot** with arrow indicating the location of the shallowest sounding detailed in **table 3.0**

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 006.tif

- 2.4MB]

Table 4.0 - Coordinates for deepest point of the proposed **Tell Qarqur Guyot** feature

This table contains position information for the deepest sounding on the feature

	Deepest Point	Lat DD MM.MMM	Lon DD MM.MMM	Lat DD.DDD	Lon DD.DDD	Lat DD MM SS.SS	Lon DD MM SS.SS
Deepest Point	4750m	05 15.290703S	143 08.051686W	-5.254845	-143.134195	S 5 15 17.44	W 143 08 03.10

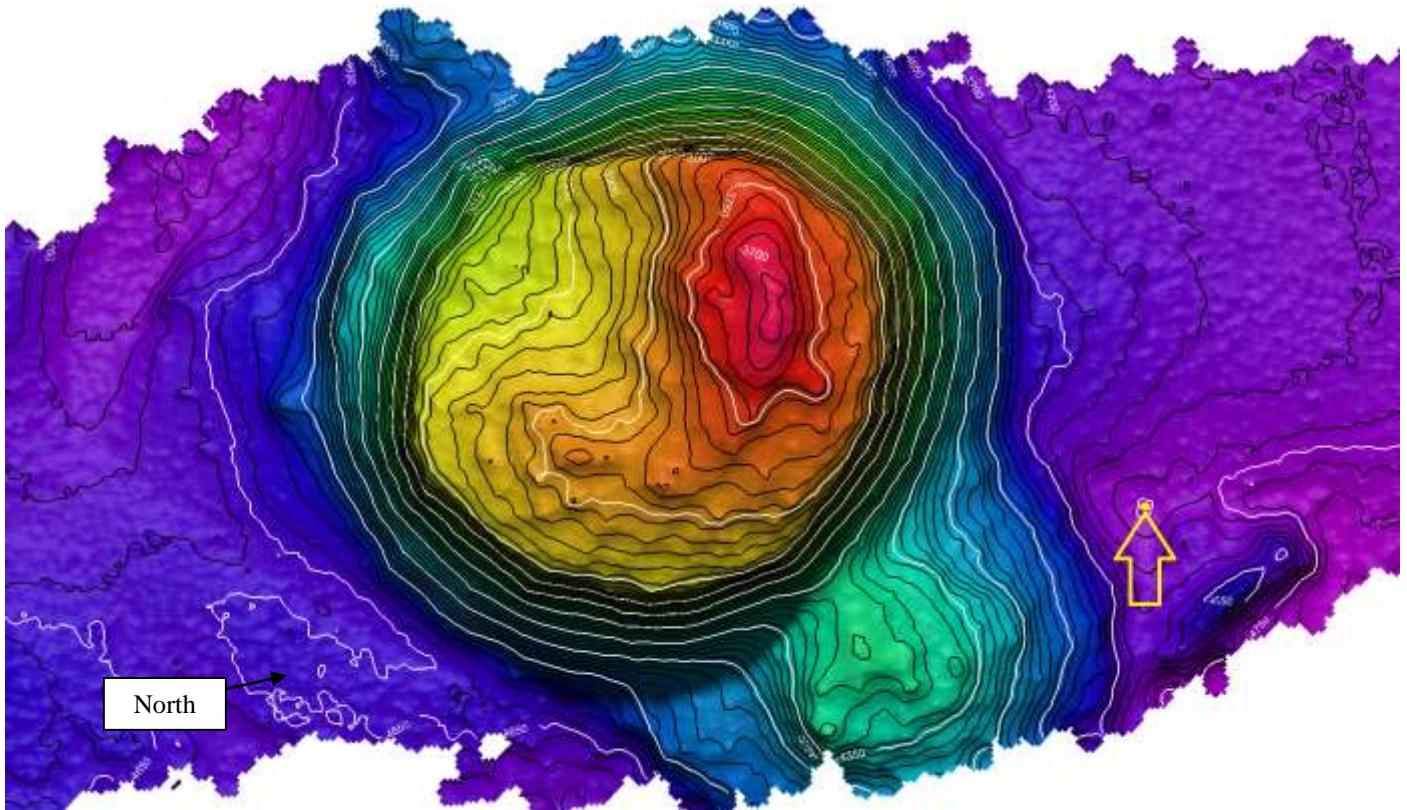


Image 006: Overview of proposed **Tell Qarqur Guyot** with arrow indicating the shallowest sounding detailed in **table 4.0**

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 007.tif

- 2.4MB]

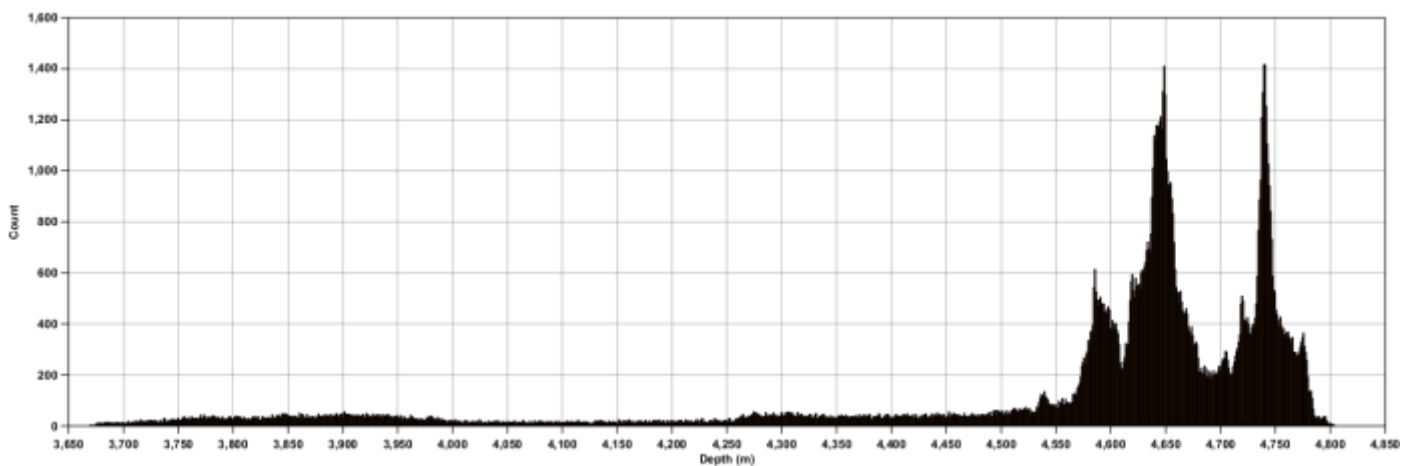


Image 007: Surface statistics generated using CARIS HIPS & SIPS detailing the number of soundings for each depth in the proposed **Tell Qarqur Guyot** feature

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 008.tif

- 192KB]

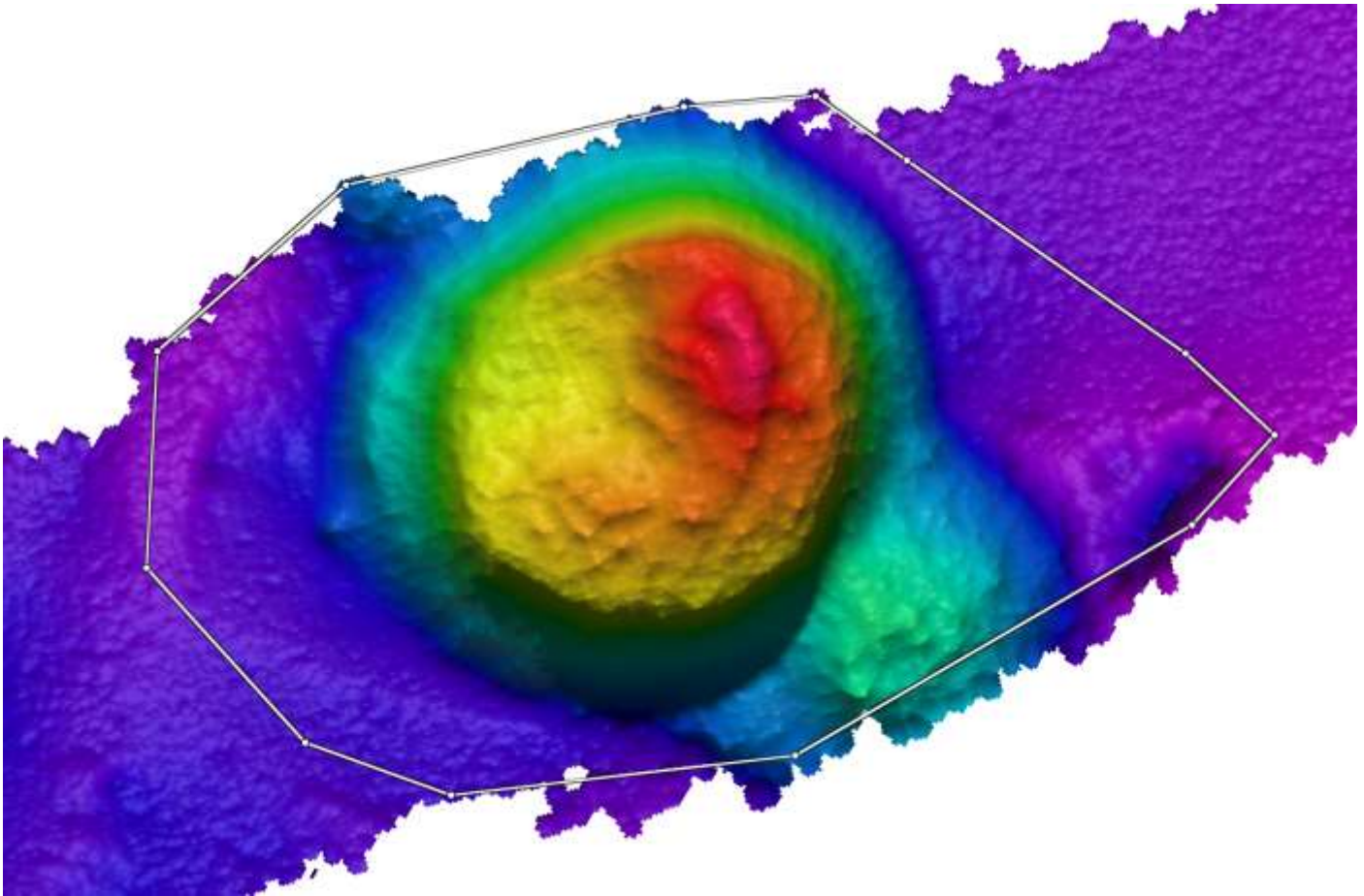


Image 008: Overview of the area used to calculate surface statistics given in **Table 5.0** (below)

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 009.PNG - 1.6MB]

Table 5.0 – Fladermaus statistics for the proposed *Tell Qarqur Guyot* feature

Surface Characteristics Information	Surface Statistics Information
Name: Selected Area from Tell Qarqur Guyot	Name: Selected Area from Tell Qarqur Guyot
Dimensions: 236 rows x 289 columns	Median: -4489.60
Cell Size: 40.000000	Mean: -4376.10
Bounds:	Std Dev: 324.53
X Range: 253920.00 to 265440.00	Height Range: [-4797.683, -3669.115]
Y Range: 9411560.00 to 9420960.00	Total 2D Surface Area: 69254400.00
Z Range: -4804.09 meter to -3669.11 meter	Positive (above 0.0) 2D Surface Area: 0.00
Horizontal Coordinate System:	Negative (below 0.0) 2D Surface Area: 69254400.00
FP_WGS_84_UTM_zone_7S	Total Volume: -303063887001.92
	Positive (above 0.0) Volume: 0.00
	Negative (below 0.0) Volume: 303063887001.92

Table 6.0 – Feature Description of Proposed *Tell Qarqur Guyot*

Particulars of the feature

Feature Description:	Maximum Depth:	4751m	Steepness :	See individual profiles
	Minimum Depth :	3669m	Shape :	Irregular
	Total Relief :	1082m	Dimension/Size :	Approx. 7800m diameter

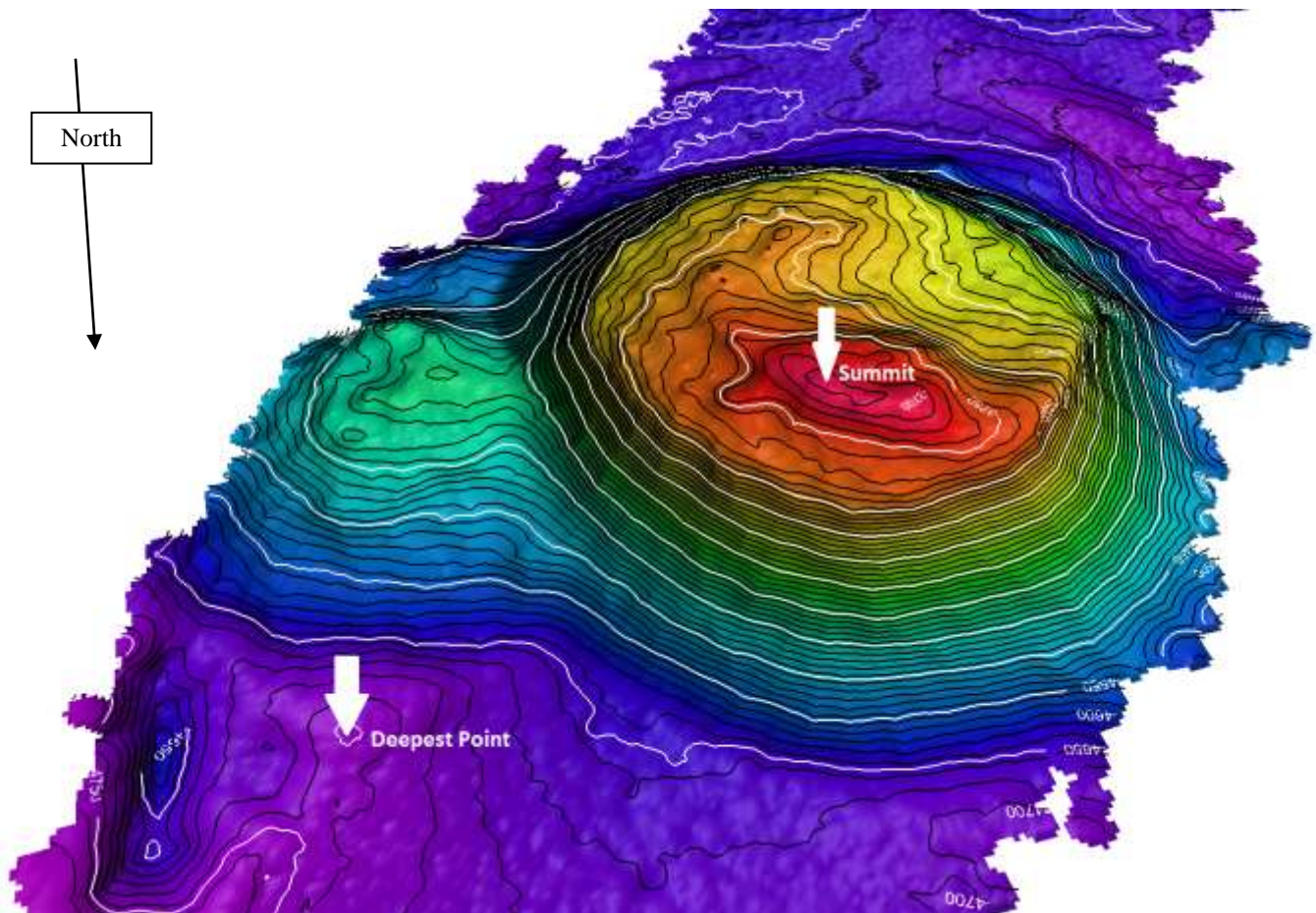


Image 009: 3D Overview of the proposed *Tell Qarqur Guyot* feature with both the summit and deepest sounding highlighted
 [Fladermaus Product]

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 010.TIF

- 1.7MB]

Profile Line 001 – Across feature with both shallowest and deepest sounding included in profile line

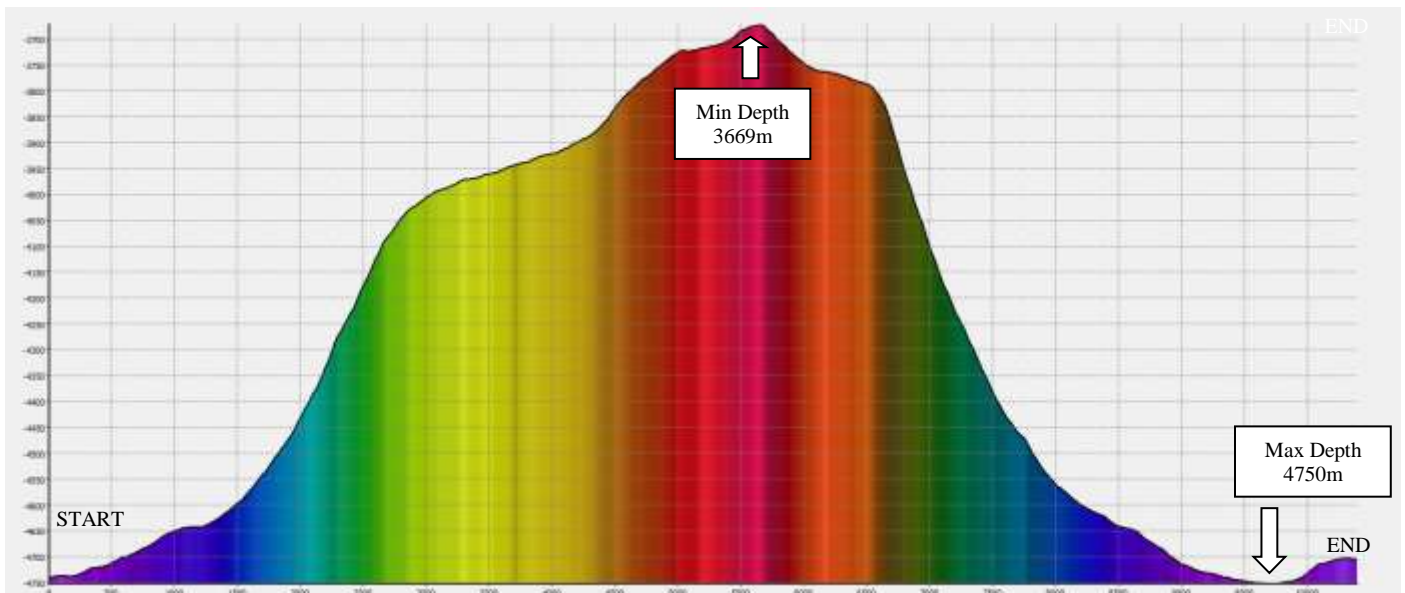


Image 010: Profile Line 001 intersecting both the shallowest and deepest soundings of the proposed *Tell Qarqur Guyot* feature.

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 011.TIF

- 1.3MB]

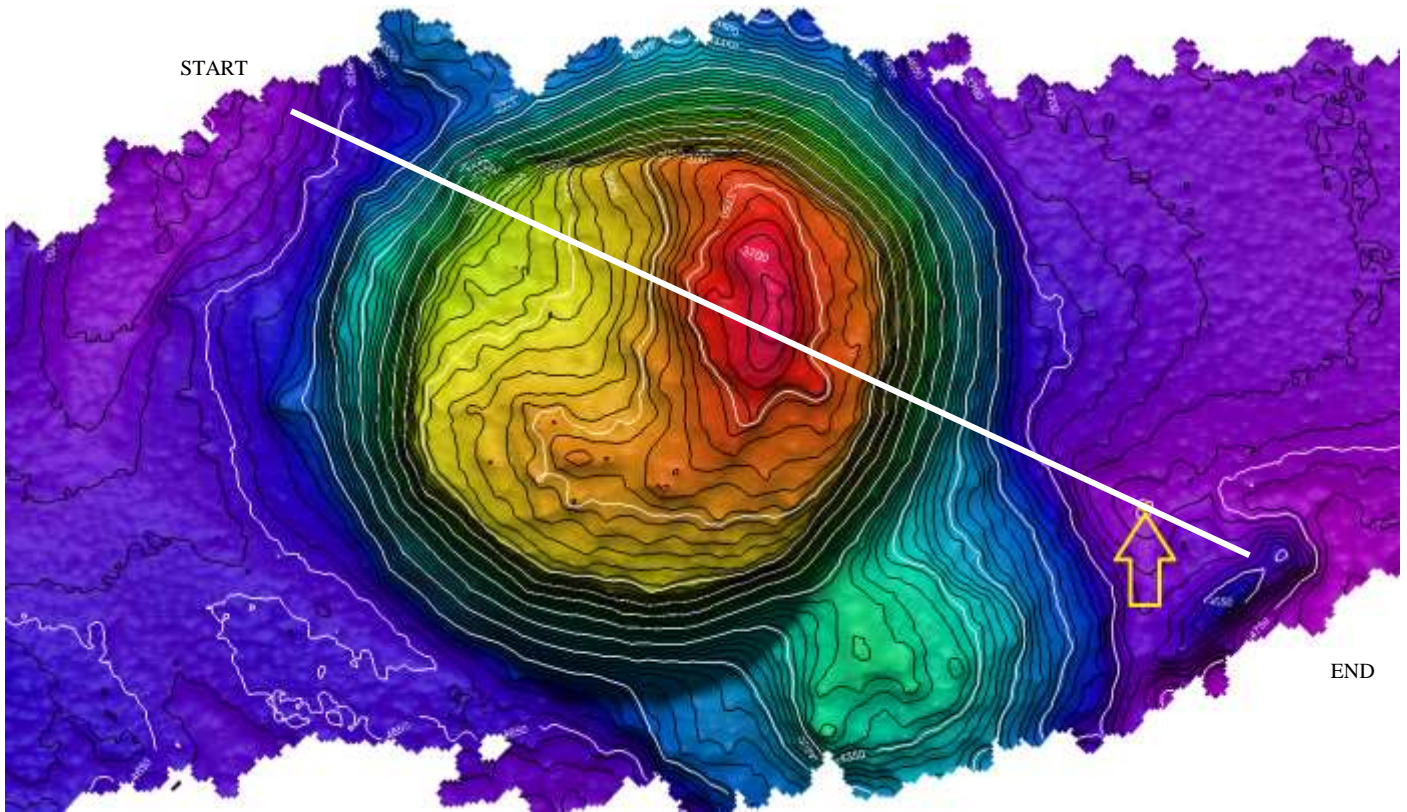


Image 011: Overview of **Profile Line 001** intersecting both the shallowest and deepest point of the proposed **Tell Qarqur Guyot** feature. Profile line 001 is shown in **Image 10** (Above)

Table 7.0 – Particulars of **Profile Line 001**. Complete line information and soundings can be found in the supporting document:

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 012.txt](#) - 436KB]

Length	Start	End	Shallowest Point	Deepest Point	Total Relief
10390m	S 5 16.837 W 143 12.994	S 5 14.982 W 143 07.685	3669m 05 15.963097S 143 10.108068W	4750m 05 15.290703S 143 08.051686W	1081m

Profile Line 002

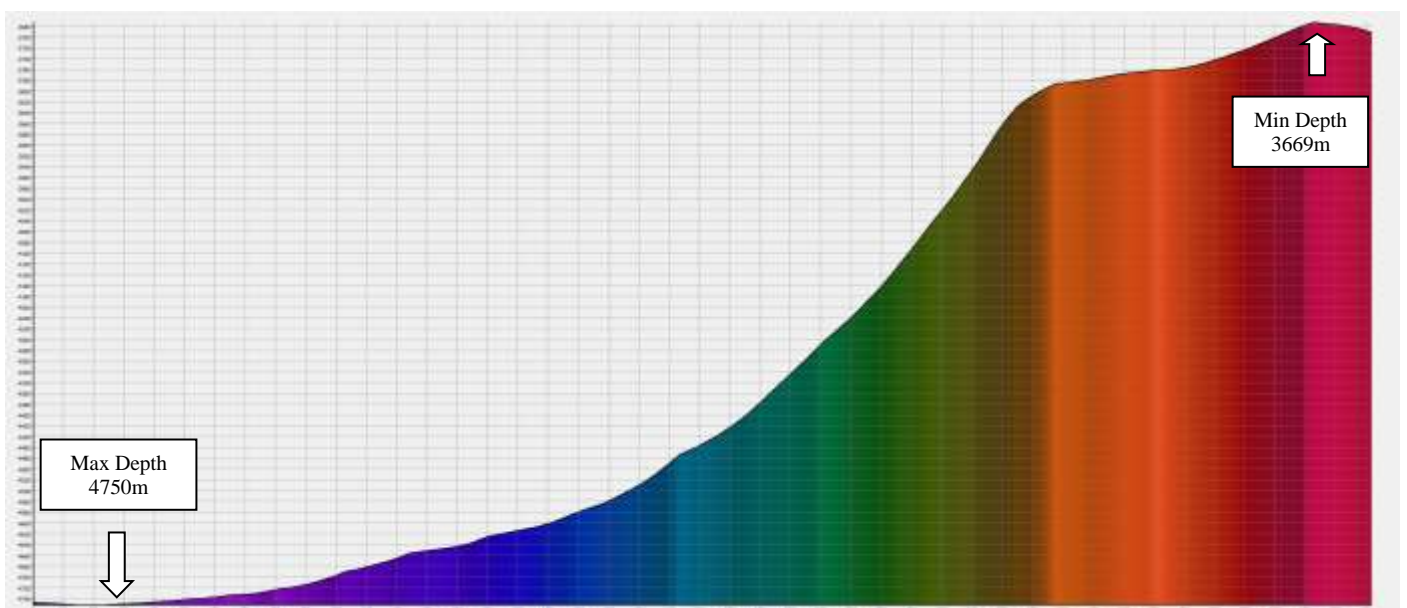


Image 012: Profile Line 002 from deepest sounding to shallowest sounding

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 008.tif](#) - 192KB]

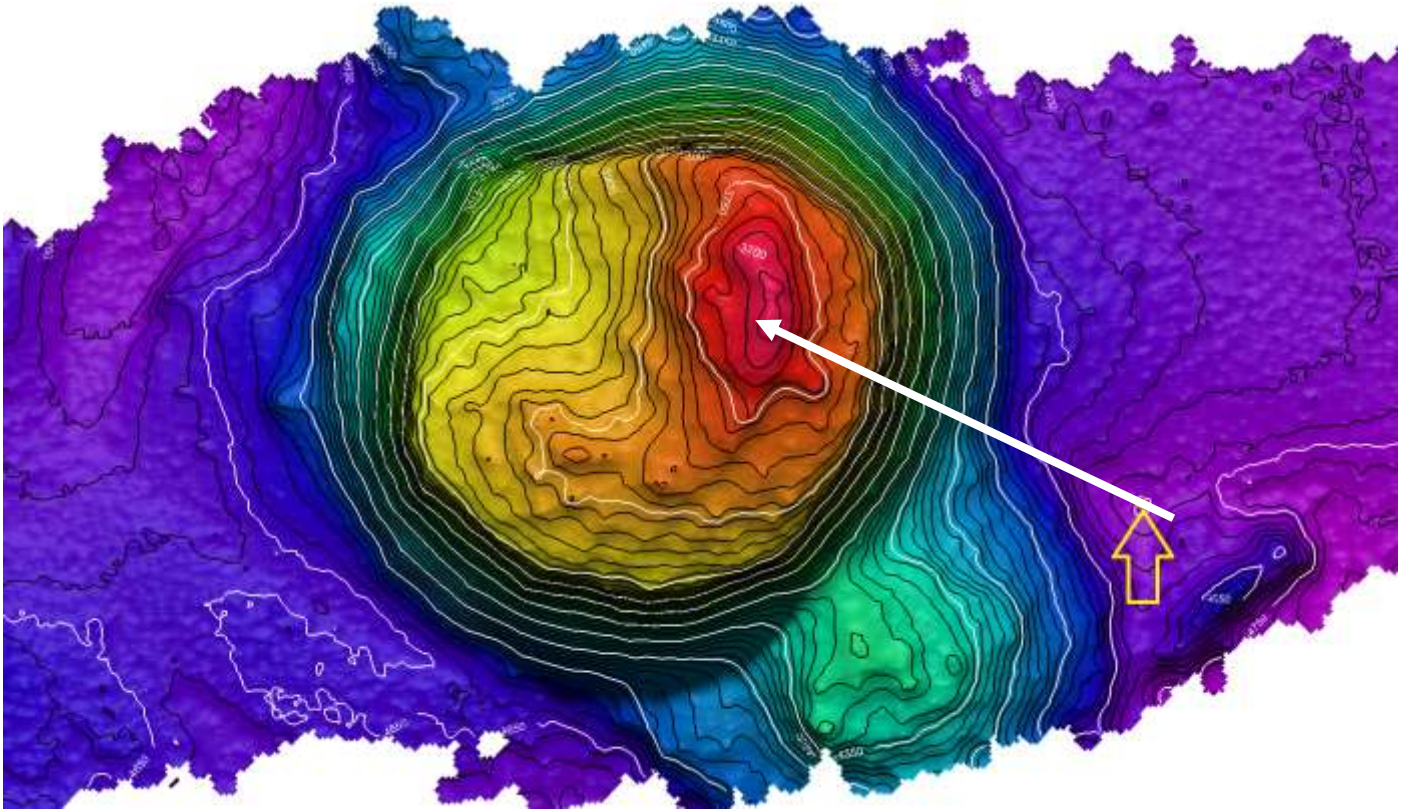


Image 013: Overview of **Profile Line 002** from deepest sounding to shallowest sounding
 [Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 013.TIF - 1.3MB]

Table 8.0 – Particulars of **Profile Line 002**. Complete line information and soundings can be found in the supporting document:
 [Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 014.txt - 185kb]

Average Gradient	Length	Start	End	Shallowest Point	Deepest Point	Total Relief
14.1°	4417m	S 5 16.001 W 143 10.192	S 5 15.177 W 143 07.947	3669.4m 05 15.963097S 143 10.108068W	4751.04m 05 15.290703S 143 08.051686W	1082m

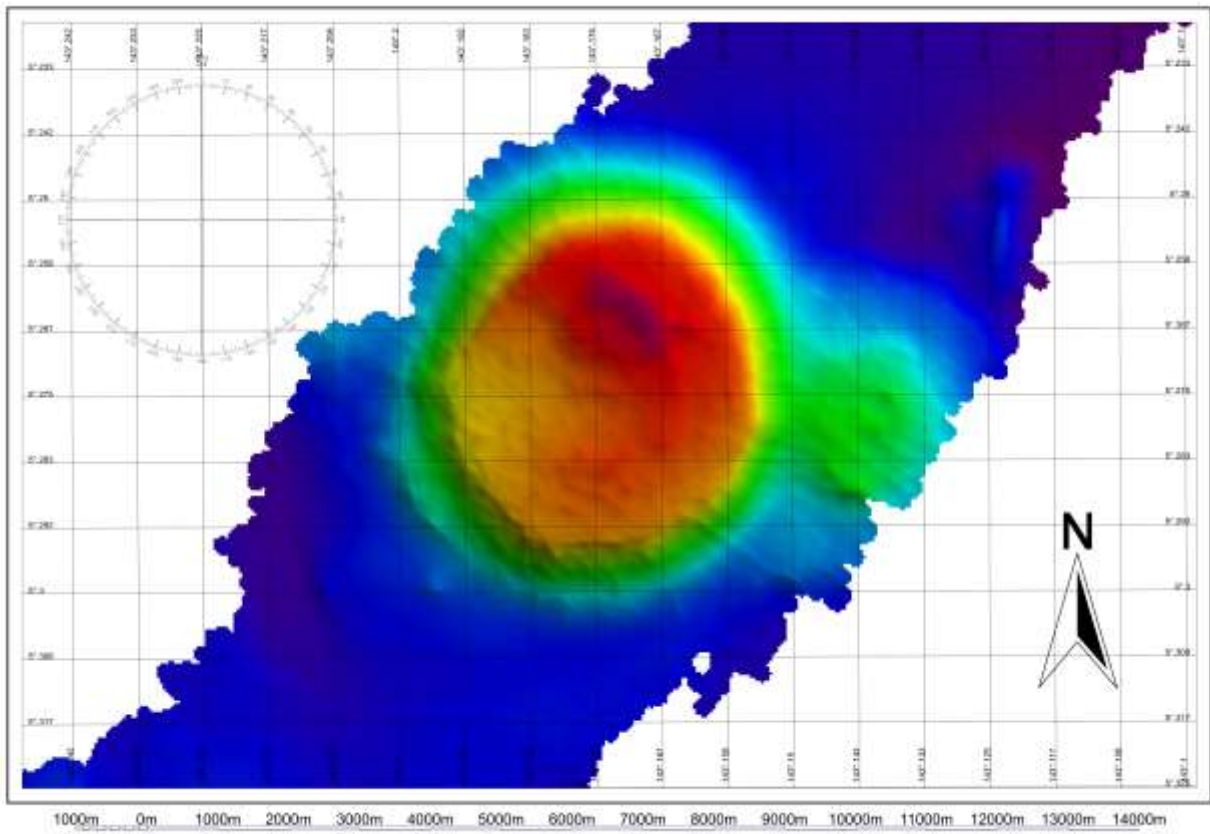


Image 014: Proposed **Tell Qarqur Guyot** feature with latitude and longitude grid in DD.MM, scale bar, compass rose and North arrow indicator

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 015.tif

- 50mb]

Location of proposed *Tell Qarqur Guyot* feature

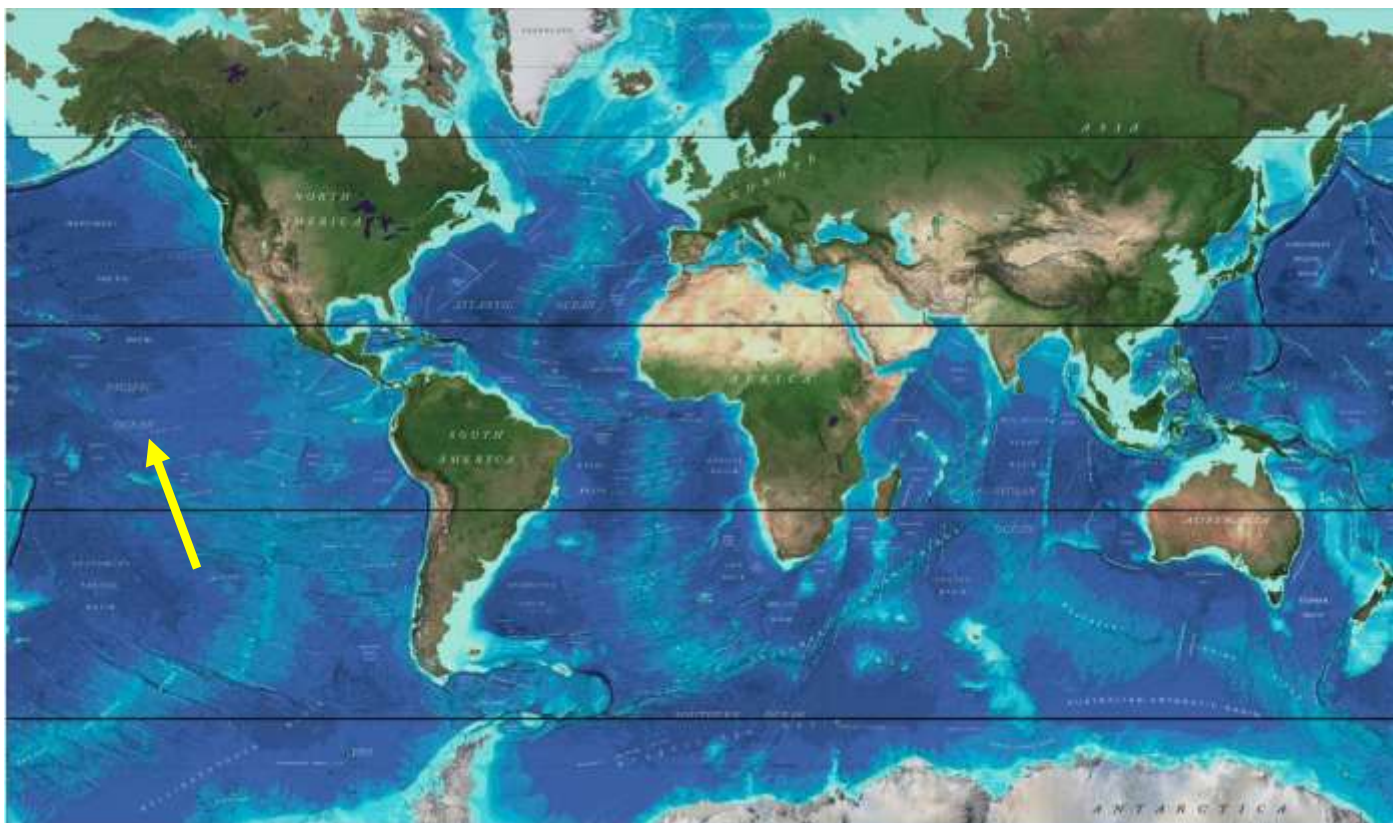


Image 015: Overview with yellow arrow indicating the location of the proposed *Tell Qarqur Guyot* overlaid on Gebco World Map 2014

[Leighton Rolley - *Tell Qarqur Guyot* - Supporting Document – 016.tif

- 50mb]



Image 016: Overview showing the location of proposed *Tell Qarqur Guyot* overlaid on Gebco World Map 2014

[Leighton Rolley - *Tell Qarqur Guyot* - Supporting Document – 017.png

- 4.52mb]

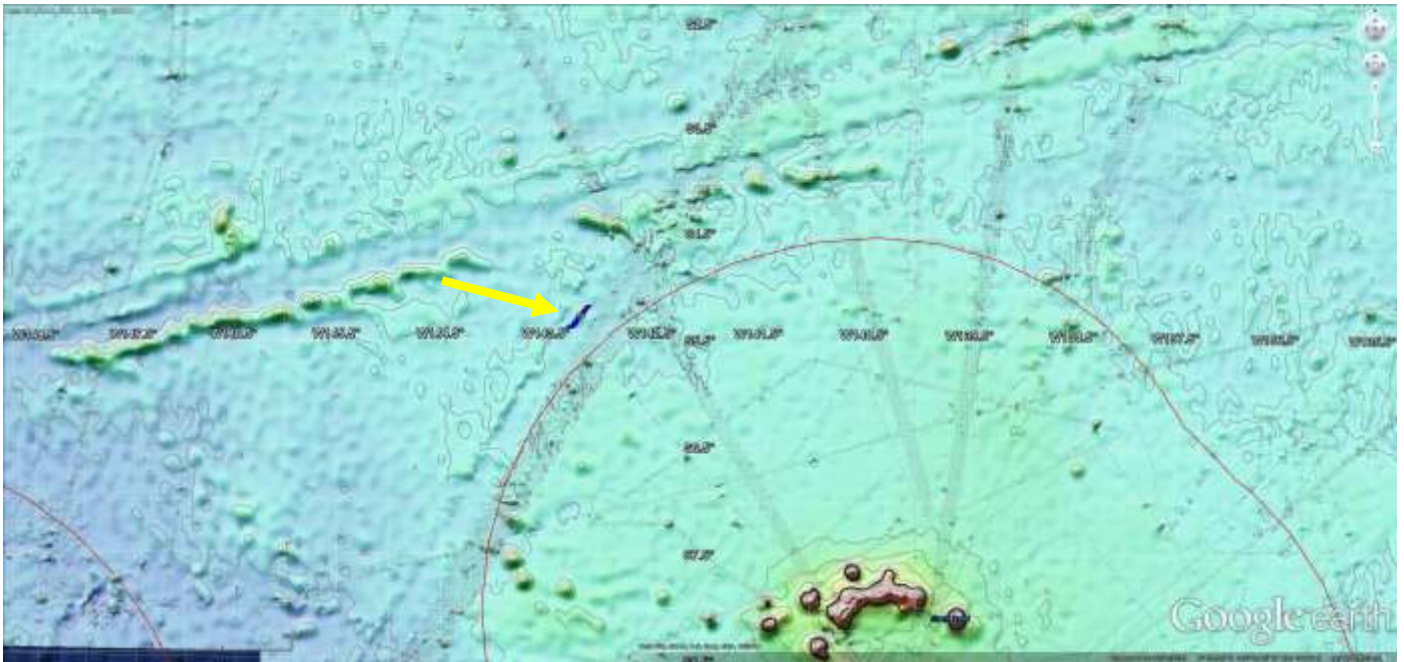


Image 017: Location of proposed *Tell Qarqur Guyot*. overlaid on SRTM30_PLUS V7 (Global Bathymetry and Elevation Data at 30 Arc Seconds Resolution: SRTM30 PLUS). This particular data set includes 290 million, depth soundings compiled and edited by investigators at SIO, NOAA, NGA, U.S. Navy, and GEBCO. The details are included in the following publication:

http://topex.ucsd.edu/sandwell/publications/124_MG_Becker.pdf

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 018.jpg](#)

[- 488KB\]](#)

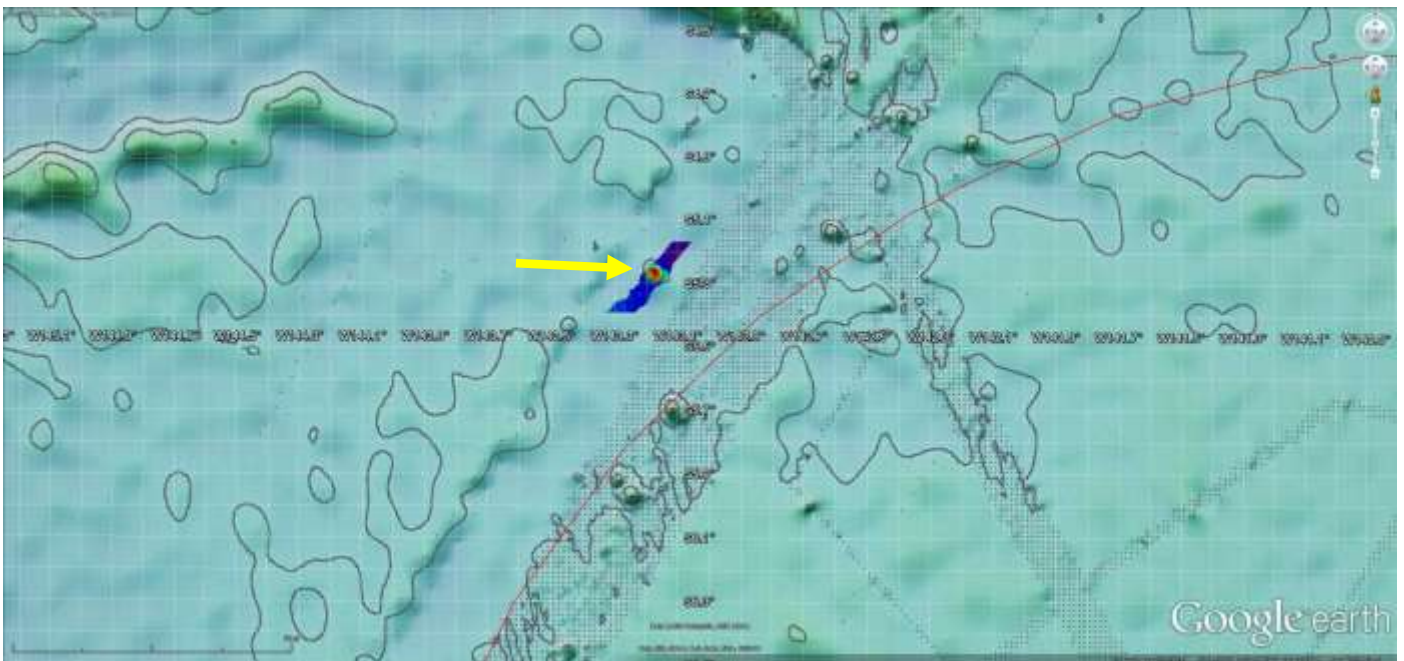


Image 018: Location of proposed *Tell Qarqur Guyot*. overlaid on SRTM30_PLUS V7 (Global Bathymetry and Elevation Data at 30 Arc Seconds Resolution: SRTM30 PLUS). This particular data set includes 290 million, depth soundings compiled and edited by investigators at SIO, NOAA, NGA, U.S. Navy, and GEBCO. The details are included in the following publication:

http://topex.ucsd.edu/sandwell/publications/124_MG_Becker.pdf

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 019.jpg](#)

[- 477KB\]](#)



Image 019: Location of proposed *Tell Qarqur Guyot*. overlaid on SRTM30_PLUS V7 (Global Bathymetry and Elevation Data at 30 Arc Seconds Resolution: SRTM30 PLUS). This particular data set includes 290 million, depth soundings compiled and edited by investigators at SIO, NOAA, NGA, U.S. Navy, and GEBCO. The details are included in the following publication:

http://topex.ucsd.edu/sandwell/publications/124_MG_Becker.pdf

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 20.jpg](#)

[- 475KB\]](#)

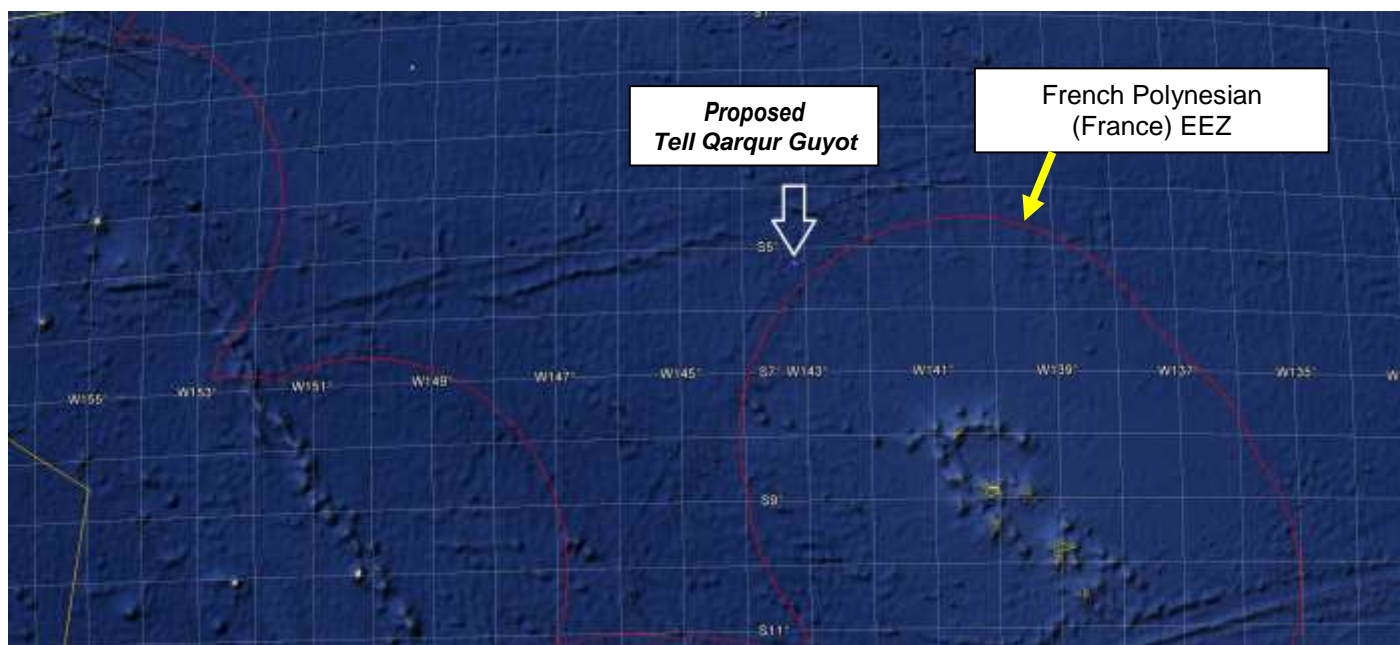


Image 020: Location of the proposed *Tell Qarqur Guyot*. The nearest EEZ to the feature is approximately **18.23NM** (bearing **135.91***) from the proposed feature. The nearest EEZ encompasses the French Polynesian Islands belonging to France

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 015.PNG](#)

[- 4.25mb\]](#)

Contour plots of Proposed *Tell Qarqur Guyot* Feature

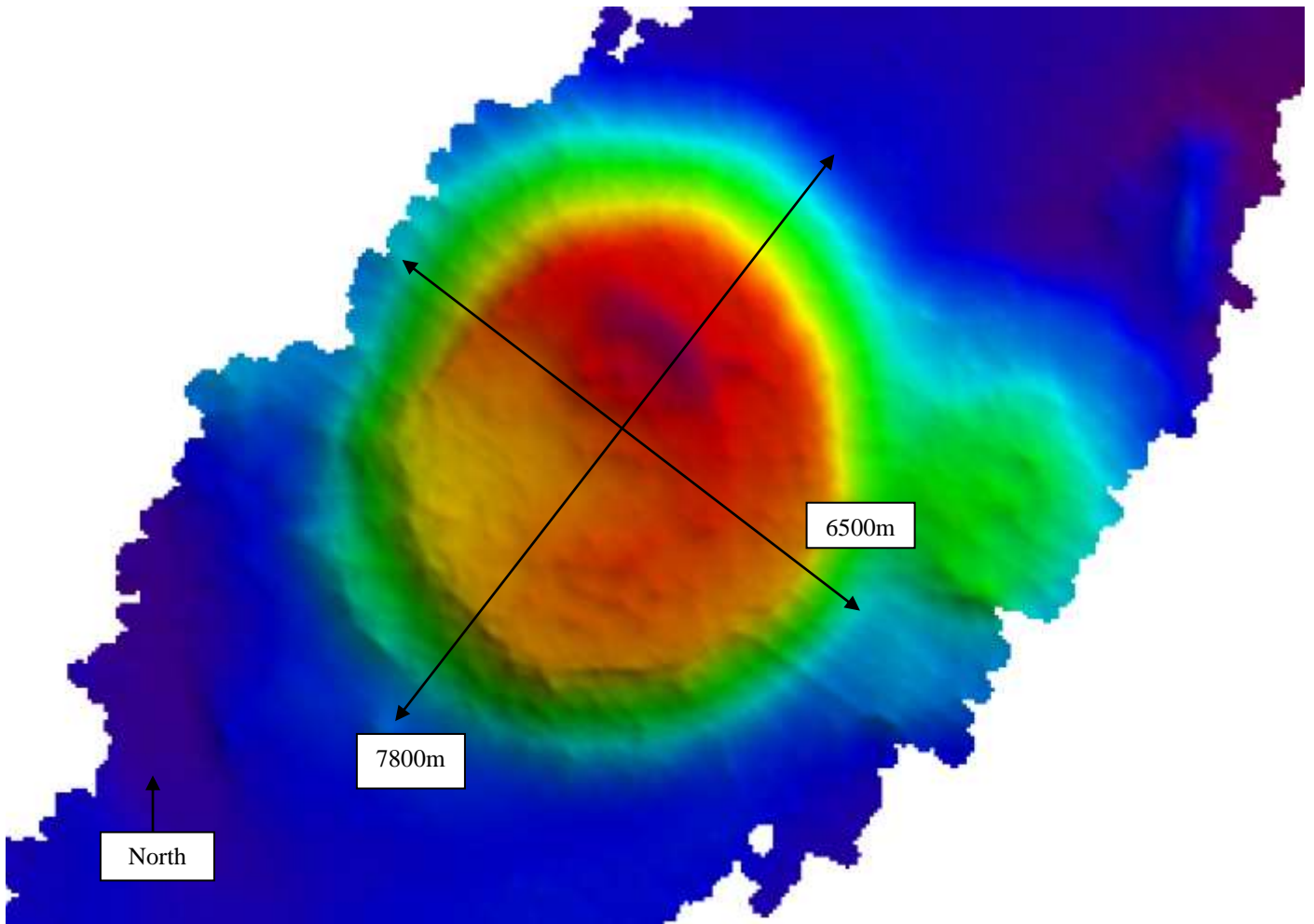


Image 021: Quick reference diagram with approximate dimensions for the proposed *Tell Qarqur Guyot* feature

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 022.png](#)

- 4.24mb]

Contour plots of Proposed *Tell Qarqur Guyot* Feature

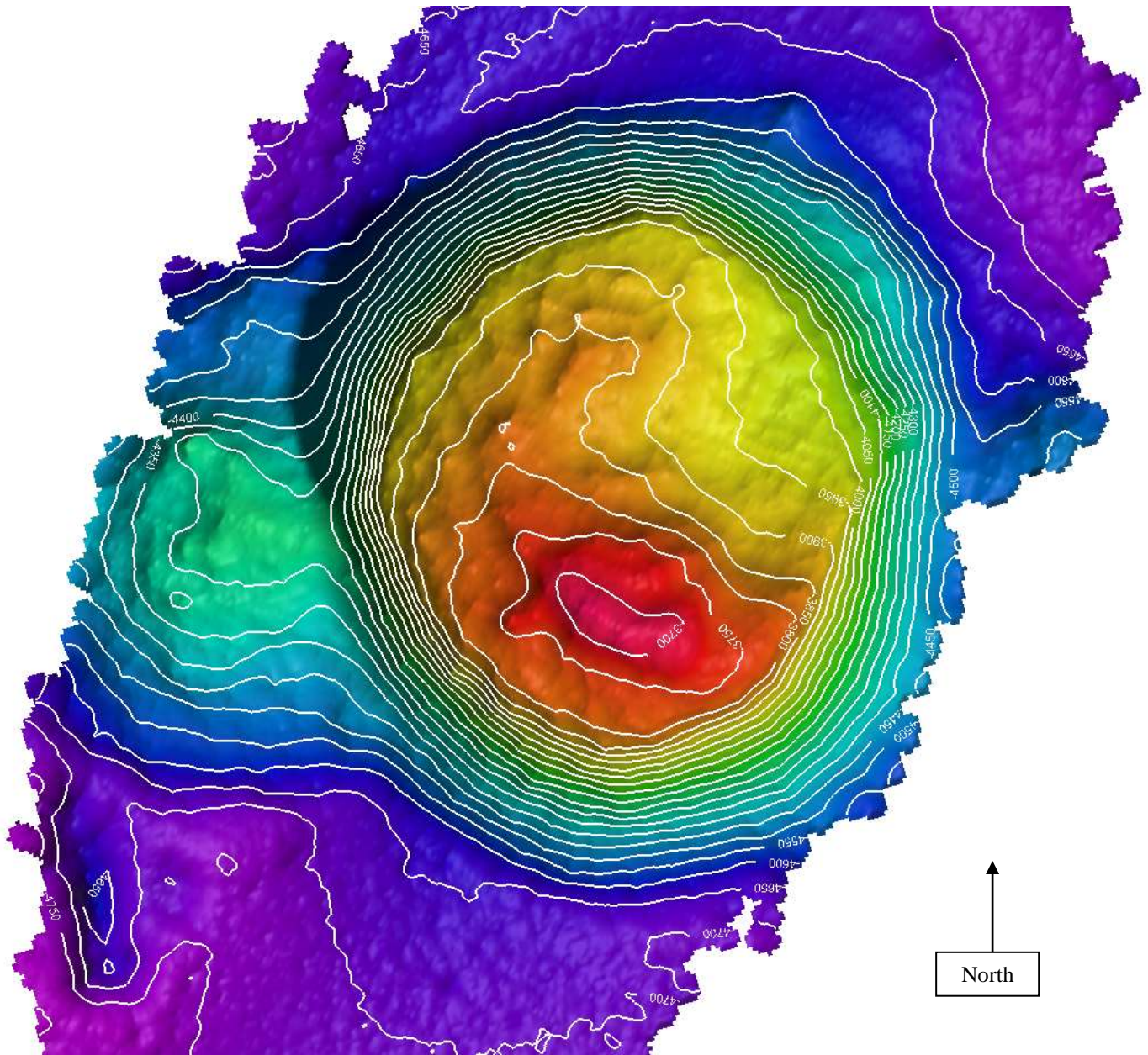


Image 022: 50m spacing Contour plot of proposed *Tell Qarqur Guyot*
[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 023.png - 1.59mb]

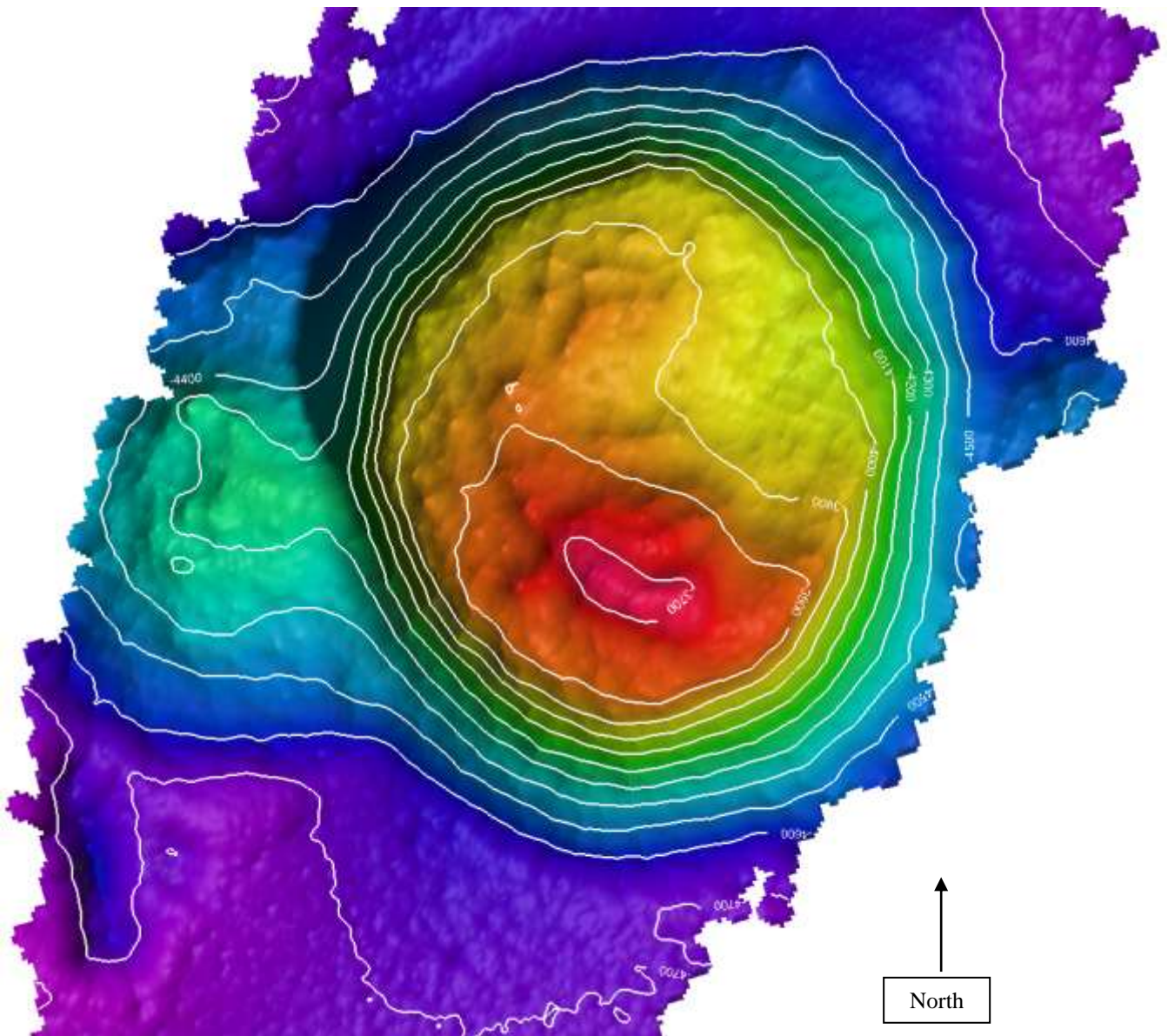


Image 023: 100m Contour spacing plot of proposed *Tell Qarqur Guyot*
 [Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 024.png - 1.17mb]

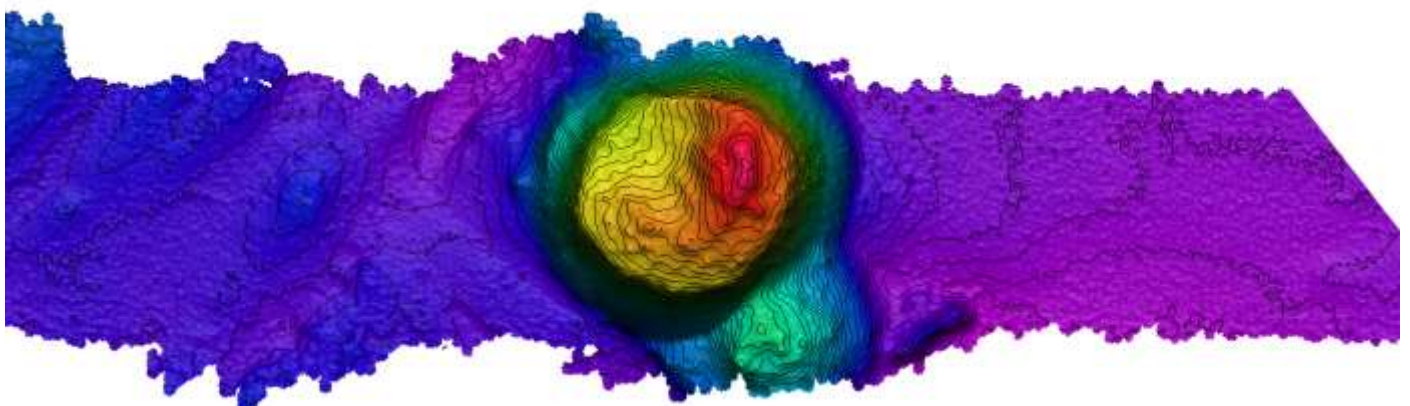


Image 024 20m Contour plot (unlabeled) of proposed *Tell Qarqur Guyot*.
 [Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 025.tif - 6.73mb]

Profiles of Proposed *Tell Qarqur Guyot* Feature

This section of the proposal document contains a series of depth profile lines crossing the feature to support the designation of Guyot

Profile Line 003

Table 9.0 – Along track profile line of proposed *Tell Qarqur Guyot* feature (South-South-West to North-North-East)

Profile Length	Profile Start	Profile End	Shallowest Point of Profile Line	Deepest Point of Profile Line	Gradient of SSW slope	Gradient of NNE Slope	Total Relief of profile line
13700m	S 5 19.308 W 143 12.569	S 5 13.433, W 143 08.029	3689m S 5 16.039 W 143 10.043	4720m S 5 13.446 W 143 08.039	7.07° Over 7560m	9.07° Over 5920m	1031m

The CARIS generated profile line file is included in the supporting documentation and can be found in the following file:

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 026.txt](#) - 577 KB]

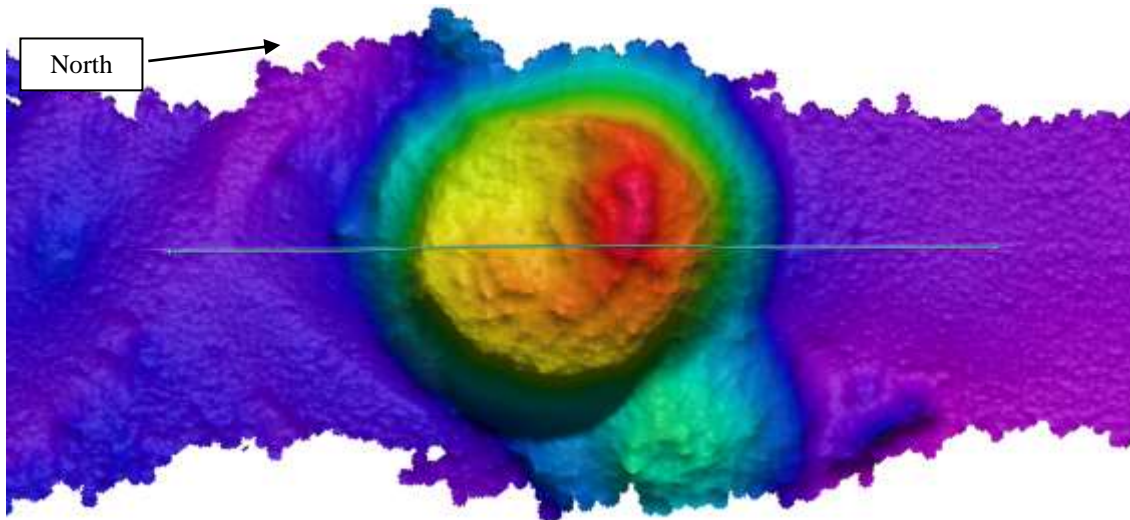


Image 024: Overview of feature including the profile line used to produce the depth profile in *Image 025*.

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 027.png](#) - 2.99MB]

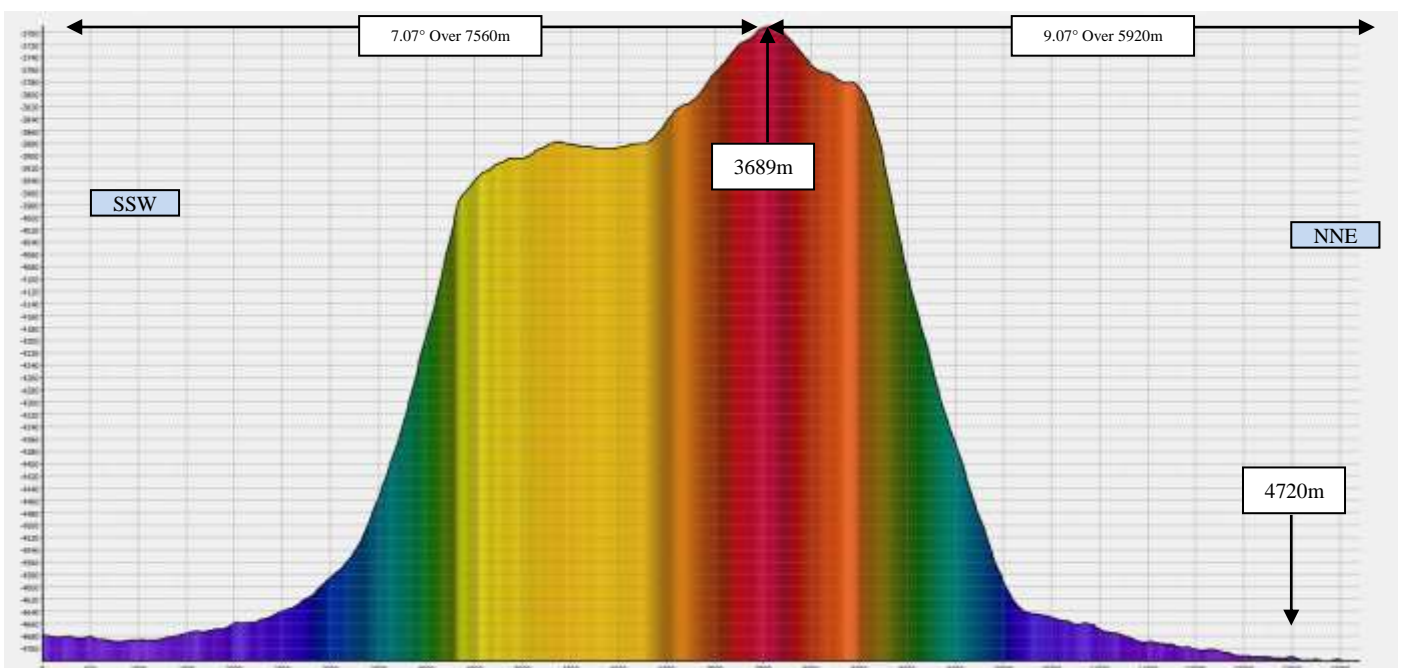


Image 025: Depth profile of the line shown in *Image 024*

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 028.tif](#) - 1.79MB]

Profile Line 004

Table 10.0 – Profile line of proposed *Tell Qarqur Guyot* from North-North-West to South-South-East

Profile Length	Profile Start	Profile End	Shallowest Point of Profile Line	Deepest Point of Profile Line	Gradient of NNW slope	Gradient of SSE Slope	Total Relief of profile line
7516m	S 5 15.495 W 143 11.837	S 5 15.503 W 143 11.827	3812m S 5 16.896 W 143 10.043	4626m S 5 18.000 W 143 08.630	9.09°	13.01°	814m

The CARIS generated profile line file is included in the supporting documentation and can be found in the following file:

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 029.txt](#)

[- 314KB\]](#)

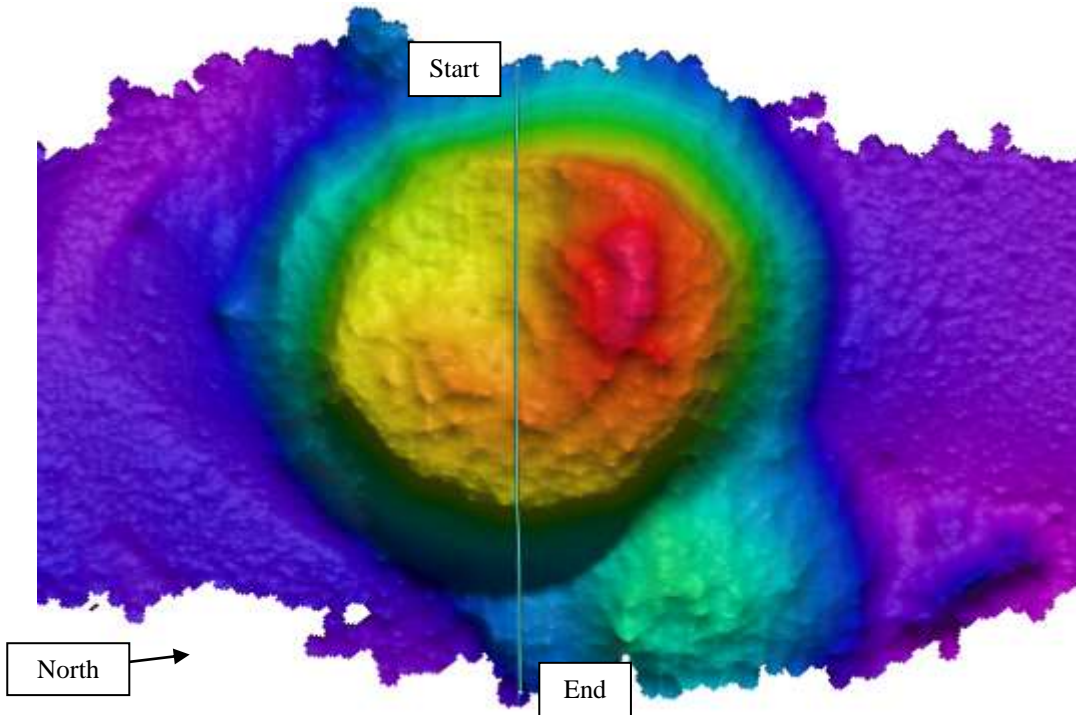
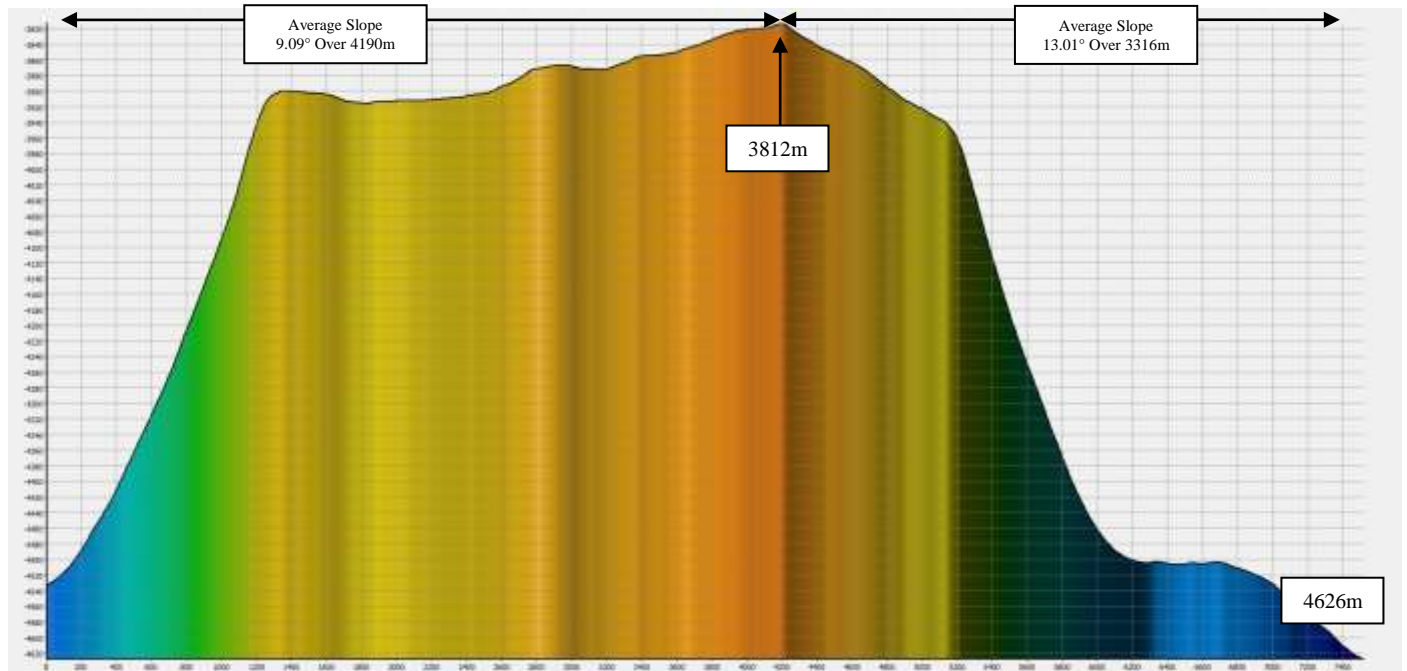


Image 026: Overview of feature including the profile line used to produce the depth profile in *Image 027*.

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 030.png](#)

[- 996KB\]](#)



Start

Image 027: Depth profile of the line shown in *Image 026*

End

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 031.tif](#)

[- 2.77MB\]](#)

Profile Line 005

Table 11.0 – Profile line of proposed *Tell Qarqur Guyot* from South-South-West to North-North-East

Profile Length	Profile Start	Profile End	Shallowest Point of Profile Line	Deepest Point of Profile Line	Gradient of NNW slope	Gradient of SSE Slope	Total Relief of profile line
11061m	S 5 17.126 W 143 13.059	S 5 15.718 W 143 07.240	3748m S 5 16.368 W 143 09.929	4744m S 5 17.116 W 143 13.020	9.1°	10.345°	996m

The CARIS generated profile line file is included in the supporting documentation and can be found in the following file:

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 032.txt](#)

- 464KB]

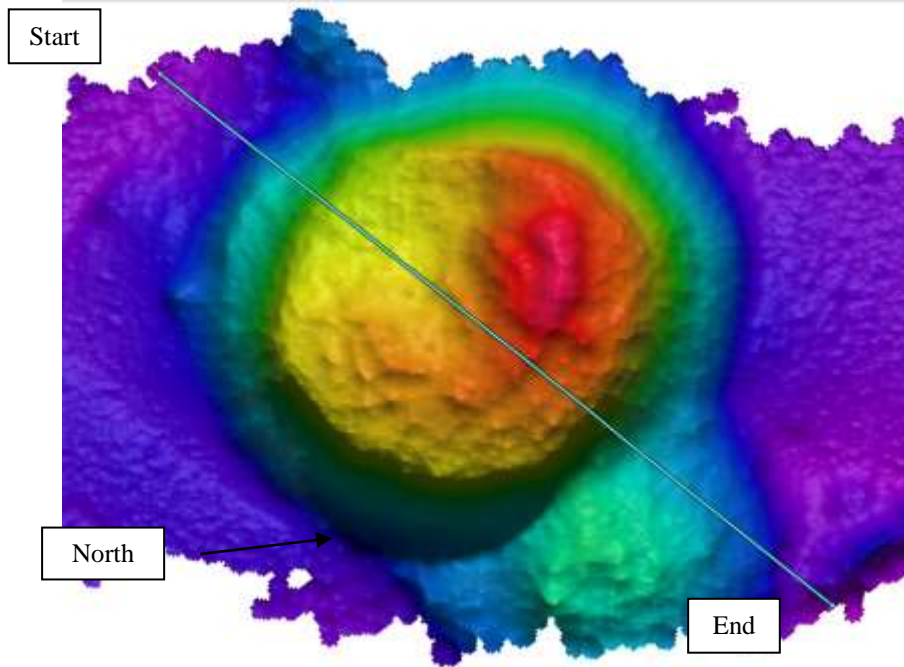


Image 028: Overview of feature including the profile line used to produce the depth profile in *Image 029*.

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 033.png](#)

- 896KB]

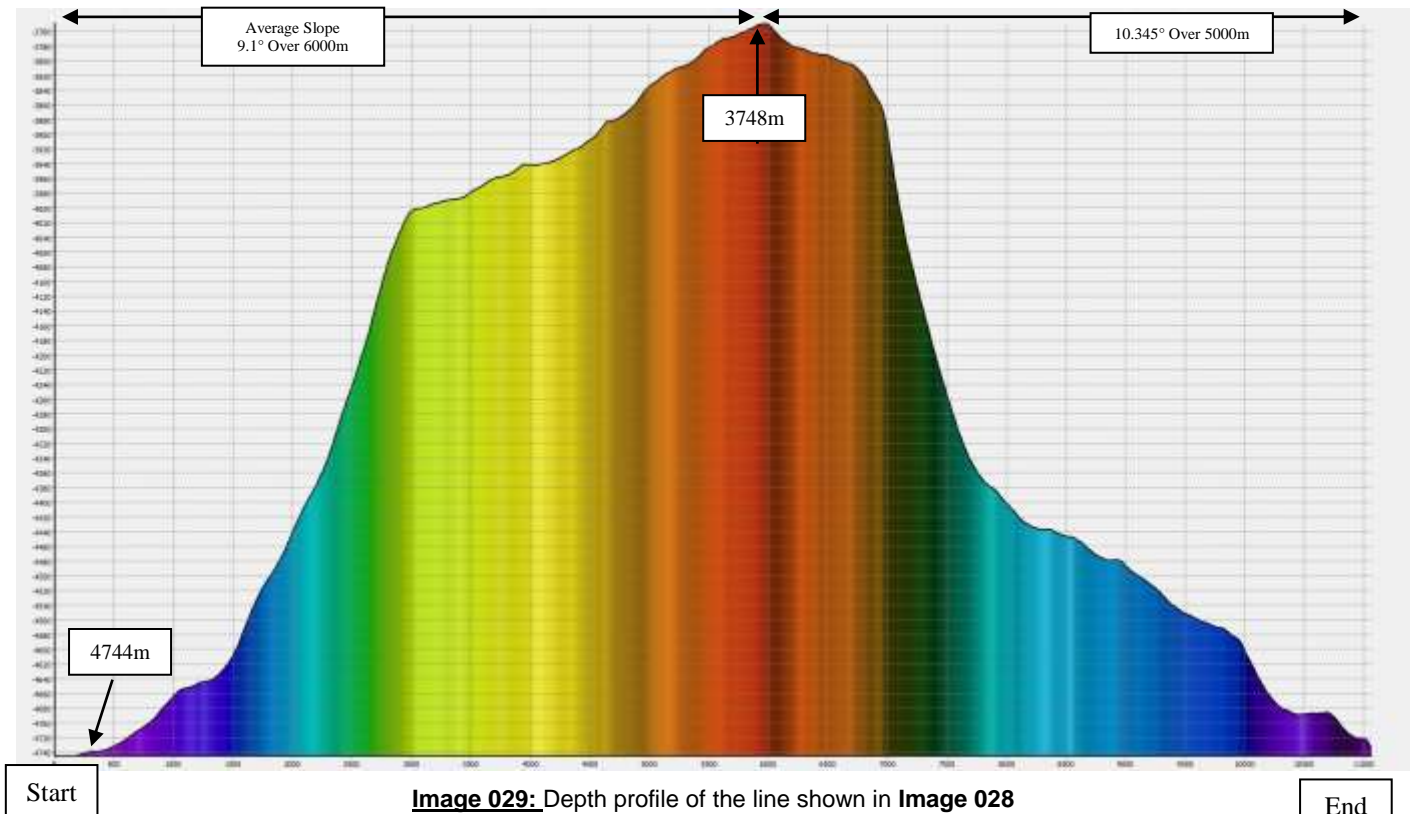


Image 029: Depth profile of the line shown in *Image 028*

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 034.tif](#)

- 2.77MB]

Slope calculations for proposed feature

I have included a number of slope calculations generated using the Fladermaus slope tool to show the relative steepness of the proposed feature.

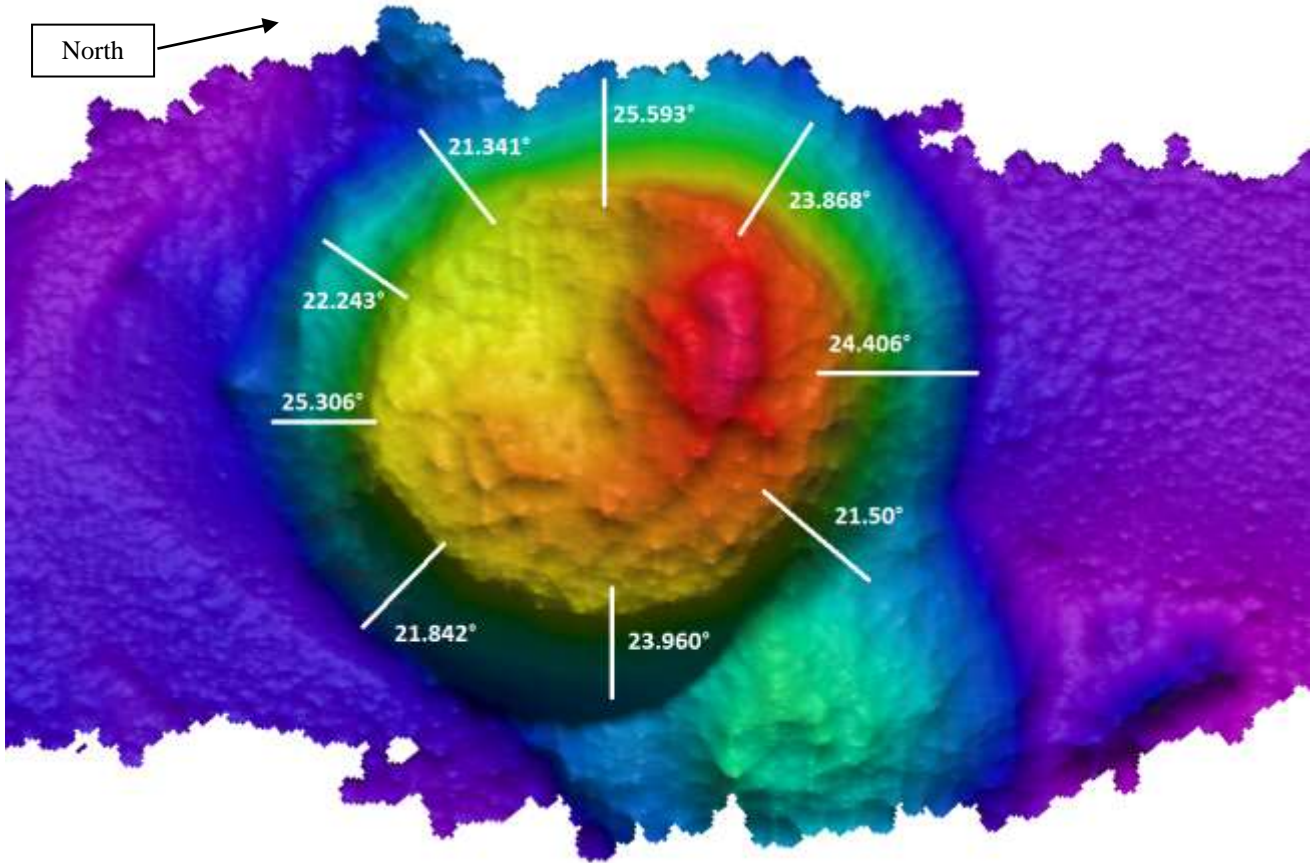


Image 030: Plot showing the **average** slope calculations around the proposed feature
[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 035.tif - 1.33MB]

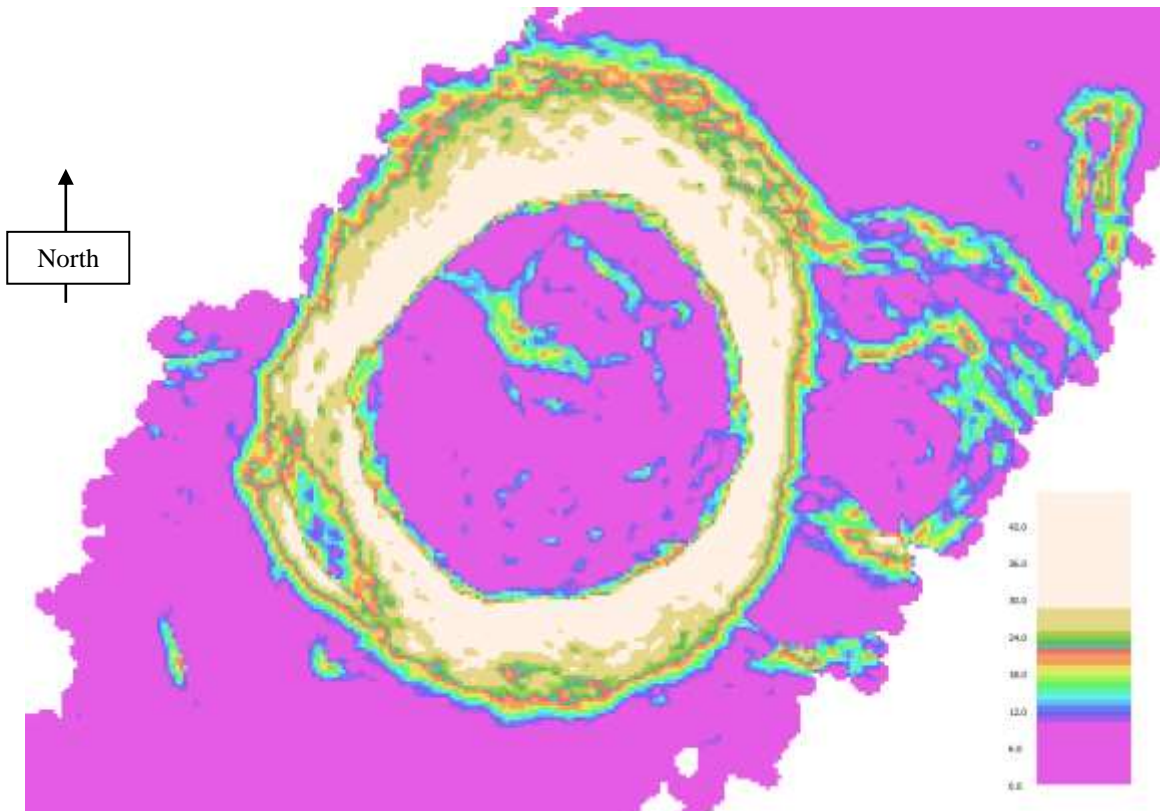


Image 031: Overview of Fladermaus slope product showing the slope values for proposed feature
[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 036.png - 117KB]

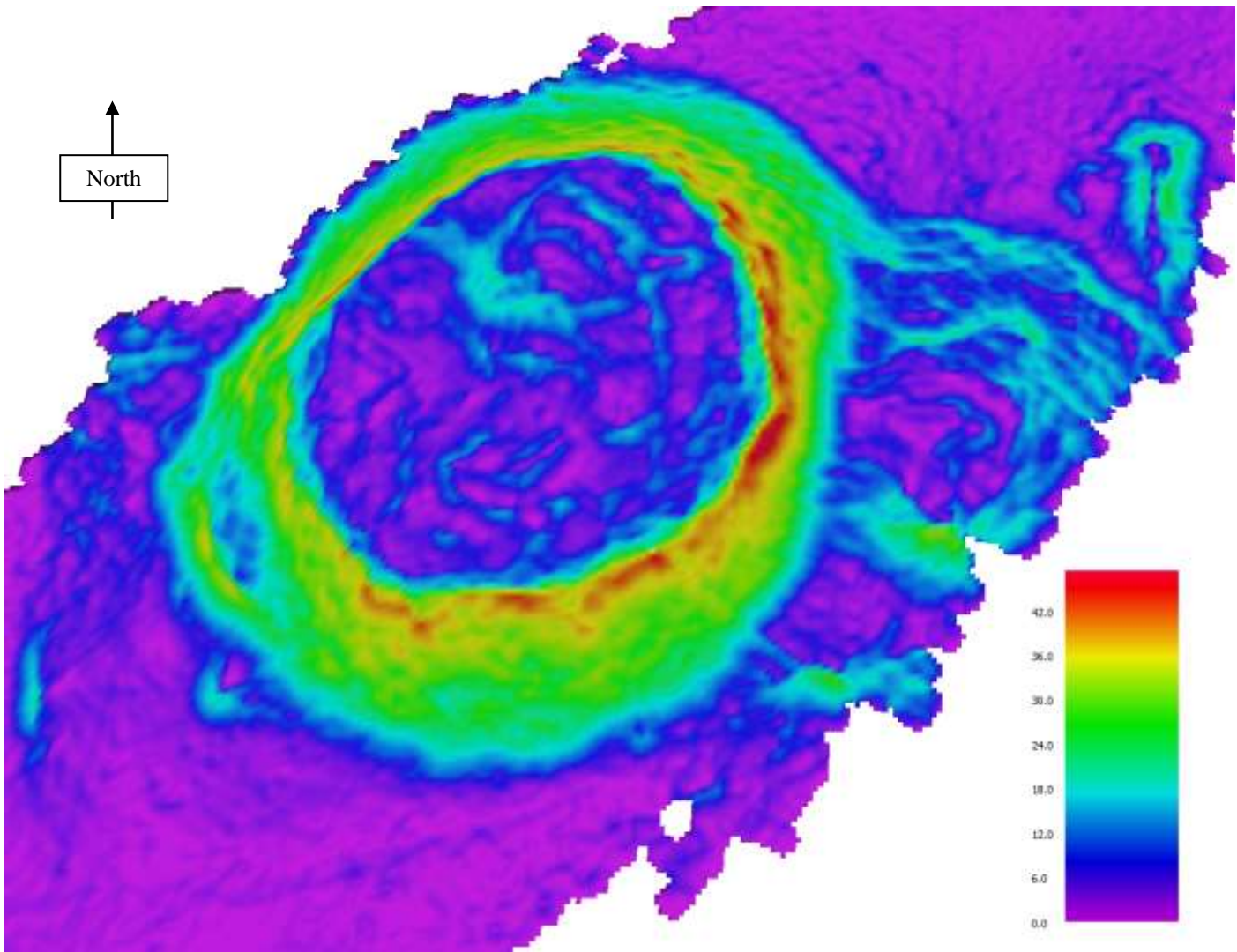


Image 032: Overview of proposed **Tell Qarqur Guyot** feature showing slope calculations overlaid onto bathymetric data
[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 037.tif - 1.40MB]

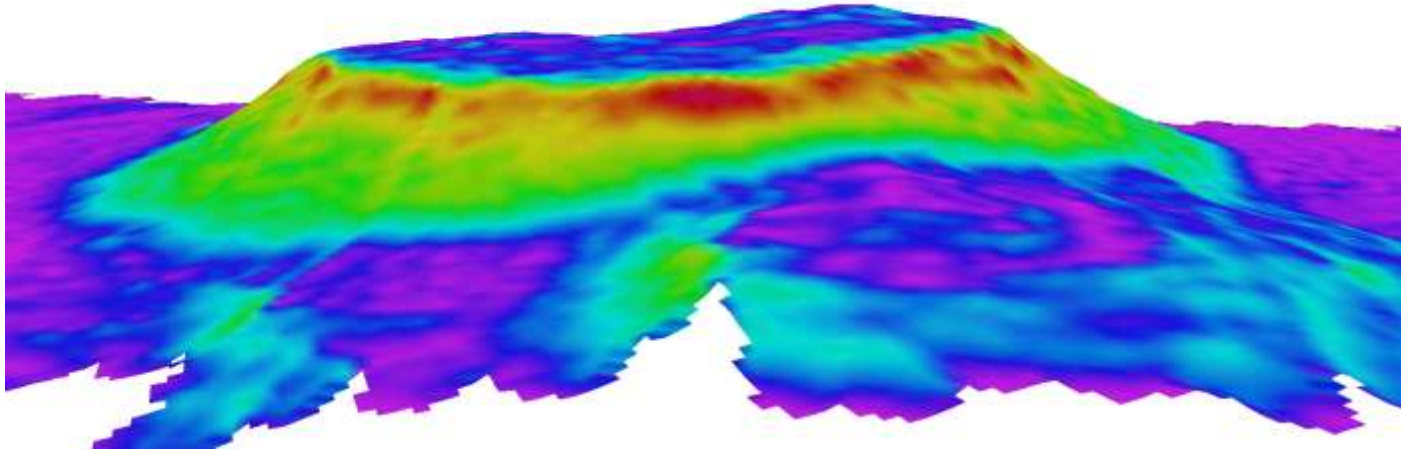


Image 033: 3D rendering showing slope calculations overlaid onto bathymetric data for proposed **Tell Qarqur Guyot** feature
[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 038.tif - 1.04MB]

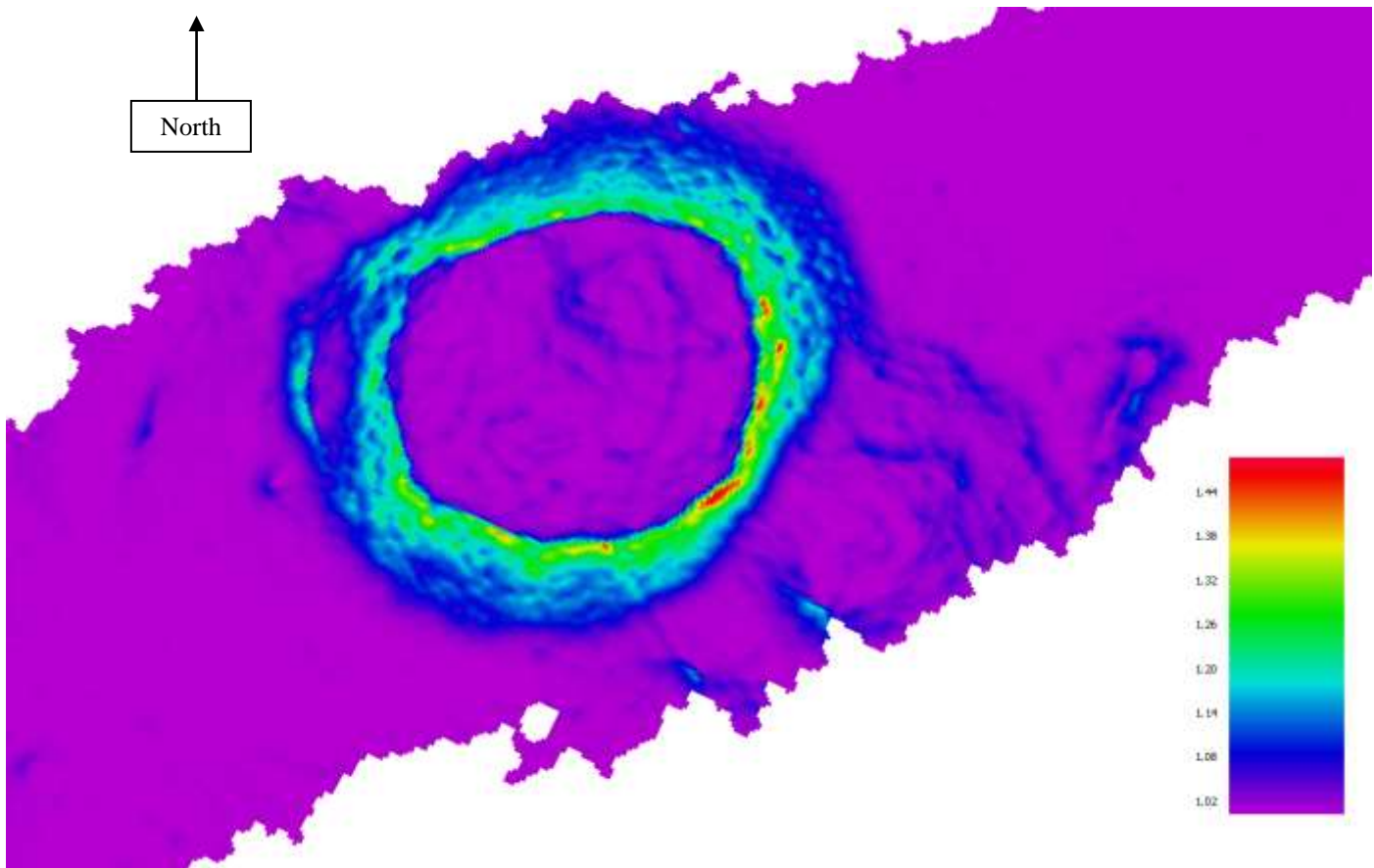


Image 034: Overview of proposed feature with Fladermaus “Rugosity Calculations” overlaid onto bathymetric data
[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 039.png - 447KB]

Tell Qarqur Guyot Summit overview

As the proposed features summit is only 80m over the height specified for a GUYOT in publication Publication B-6 Edition 4.1.0, September 2013 I have included additional contour plots and profiles of the summit to support this proposal.

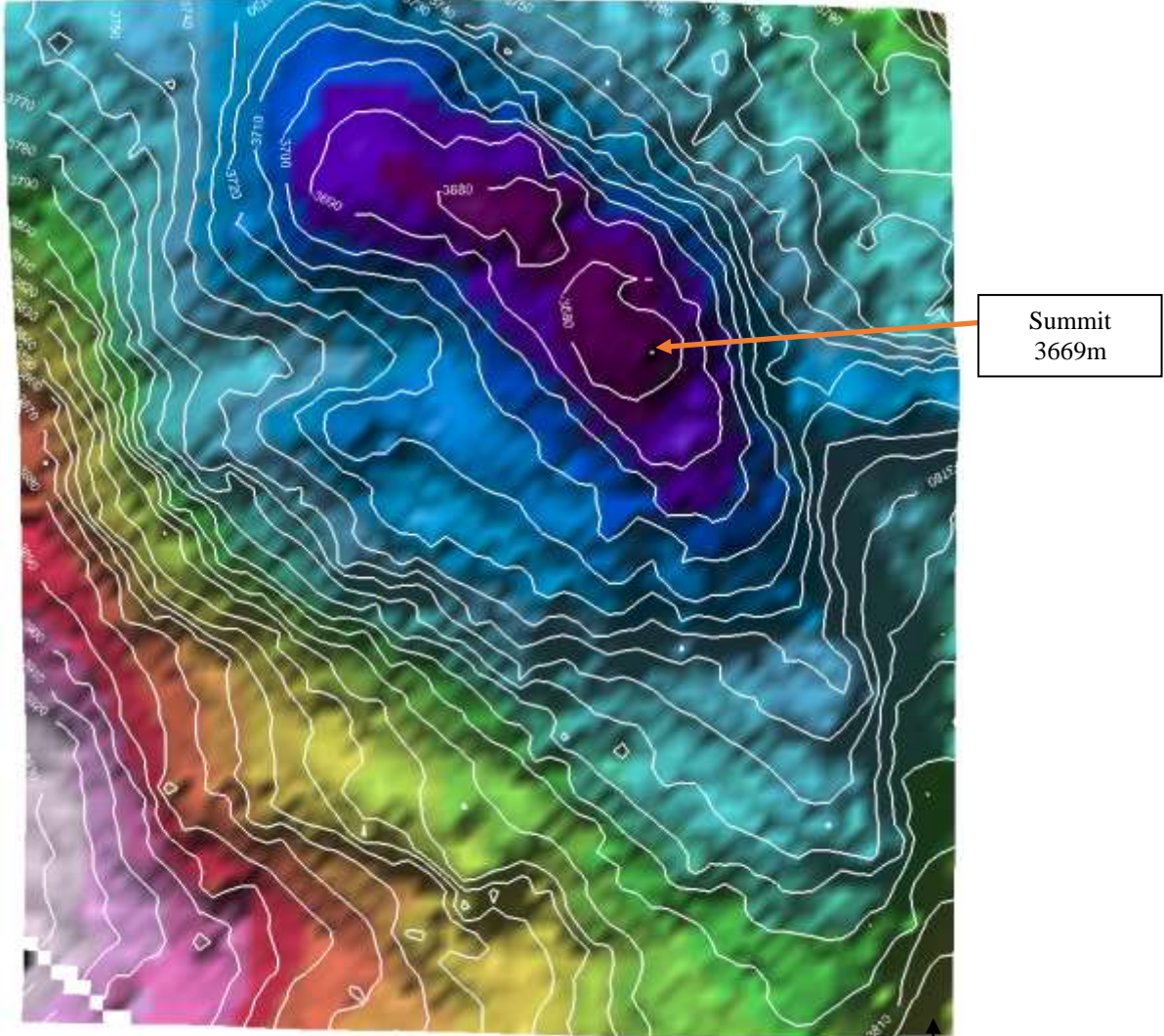


Image 035: Overview of the summit with 10m contour spacing's. The area covered by this contour plot is shown below in **image**

036

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 040.tif

- 1.15MB]

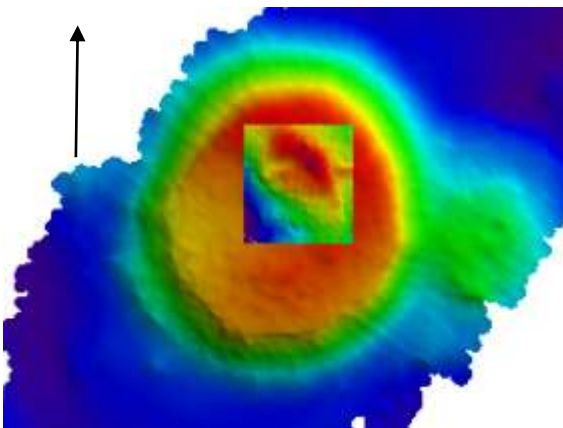


Image 036: Overview of summit area covered by contour plot

035

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 041.png

- 666KB]

Dimensions: 73 rows x 67 columns
Cell Size: 30.000000
Bounds:
X Range: 258300.0 to 260280.0
Y Range: 9416130.0 to 9418290.0
Z Range: -3935.39 meter to -3669.82 meter
Horizontal Coordinate System:
FP_WGS_84_UTM_zone_7S
Median: -3768.30
Mean: -3779.70
Std Dev: 63.84
Height Range: [-3935.391, -3669.820]
Total 2D Surface Area: 4268700.00
Positive (above 0.0) 2D Surface Area: 0.00
Negative (below 0.0) 2D Surface Area: 4268700.00
Total Volume: -16135411220.73
Positive (above 0.0) Volume: 0.00
Negative (below 0.0) Volume: 16135411220.73

Profile Line 007

Table 12.0 – Along-track profile of proposed Tell Qarqur Guyot top

Profile Length	Profile Start	Profile End	Shallowest Point of Profile Line	Deepest Point of Profile Line	Gradient of Left slope	Gradient of Right Slope	Total Relief of profile line
4174m	S 5 17.307 W 143 11.198	S 5 15.566 W 143 09.754	3675m S 5 15.976 W 143 10.094	3958m S 5 17.307 W 143 11.198	4.748	8.353	283m

The CARIS generated profile line file is included in the supporting documentation and can be found in the following file:

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 042.txt](#)

- 174KB]

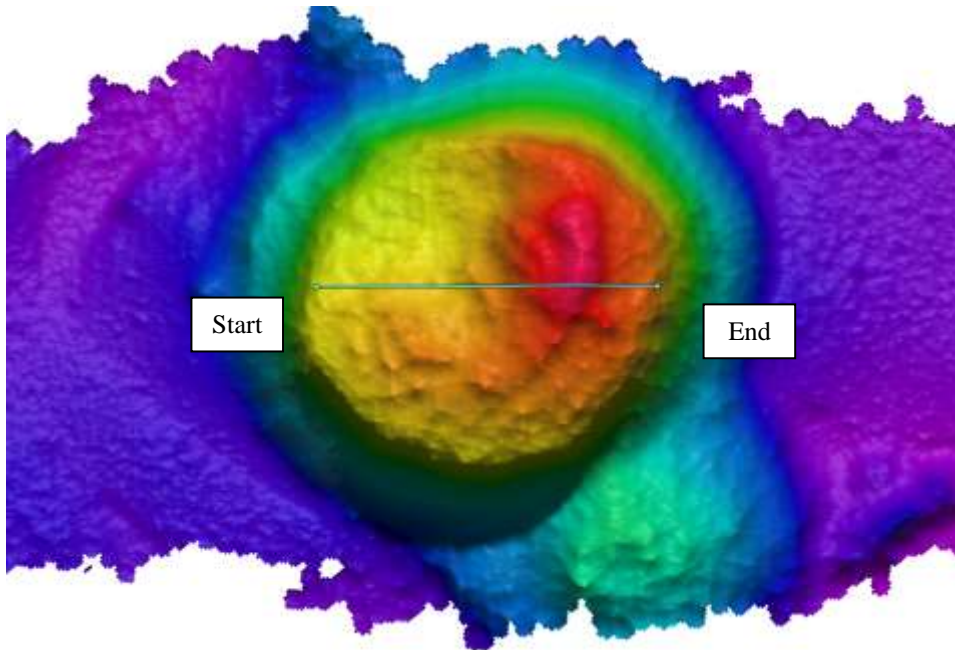


Image 037 Overview of the summit including the profile line used to produce the depth profile in **Image 038**.

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 043.png](#)

- 2.02MB]

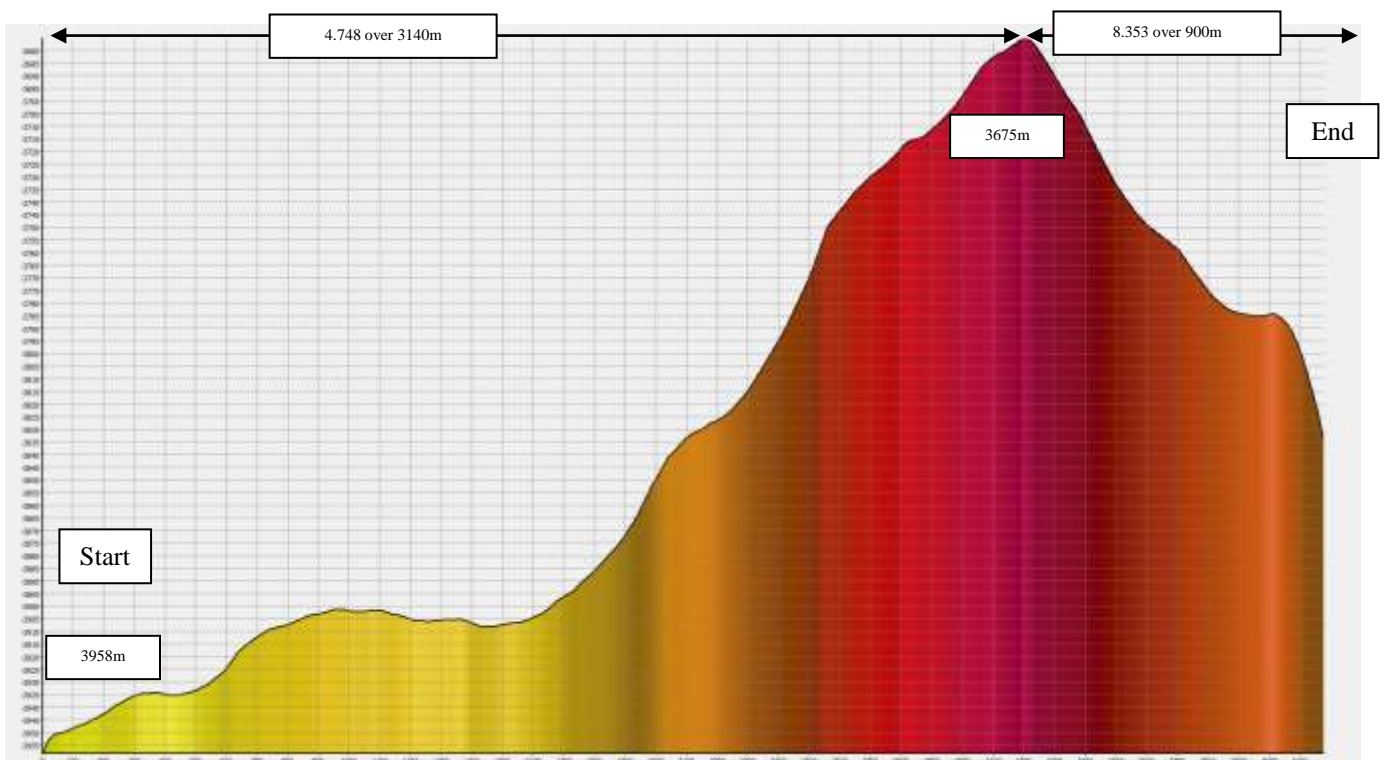


Image 038: Depth profile of the line shown in **Image 037**

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 044.tif](#)

- 2.50MB]

Profile Line 008

Table 13.0 – Across-track profile of proposed Tell Qarqur Guyot top

Profile Length	Profile Start	Profile End	Shallowest Point of Profile Line	Deepest Point of Profile Line	Total Relief of profile line
3843m	S 5 15.874 W 143 11.203	S 5 15.882 W 143 11.194	3804m S 5 16.871 W 143 10.030	3959m S 5 16.879, W 143 10.020	155m

The CARIS generated profile line file is included in the supporting documentation and can be found in the following file:

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 045.txt - 160KB\]](#)

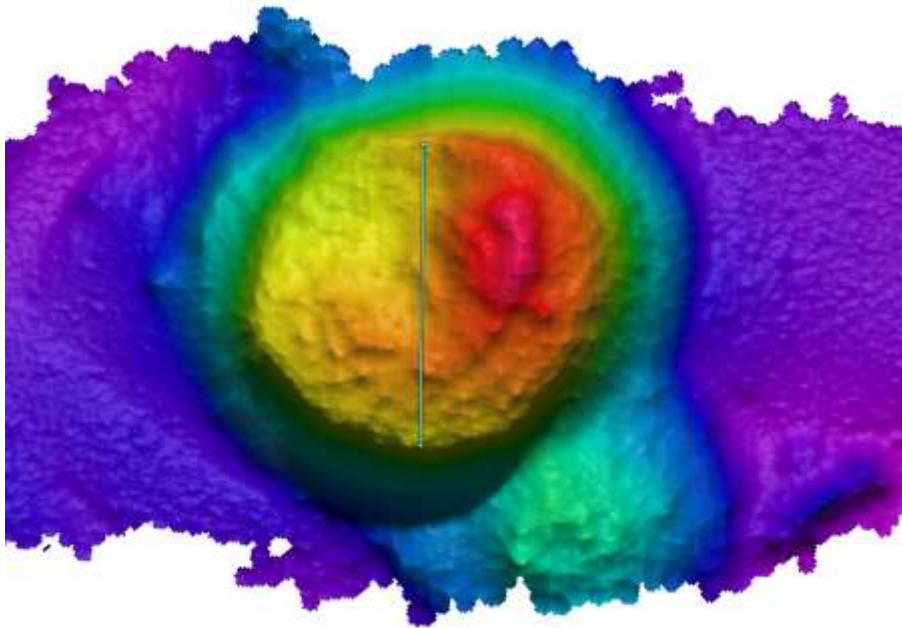


Image 039: Overview of the summit including the profile line used to produce the depth profile in **Image 040**

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 046.png - 964KB\]](#)

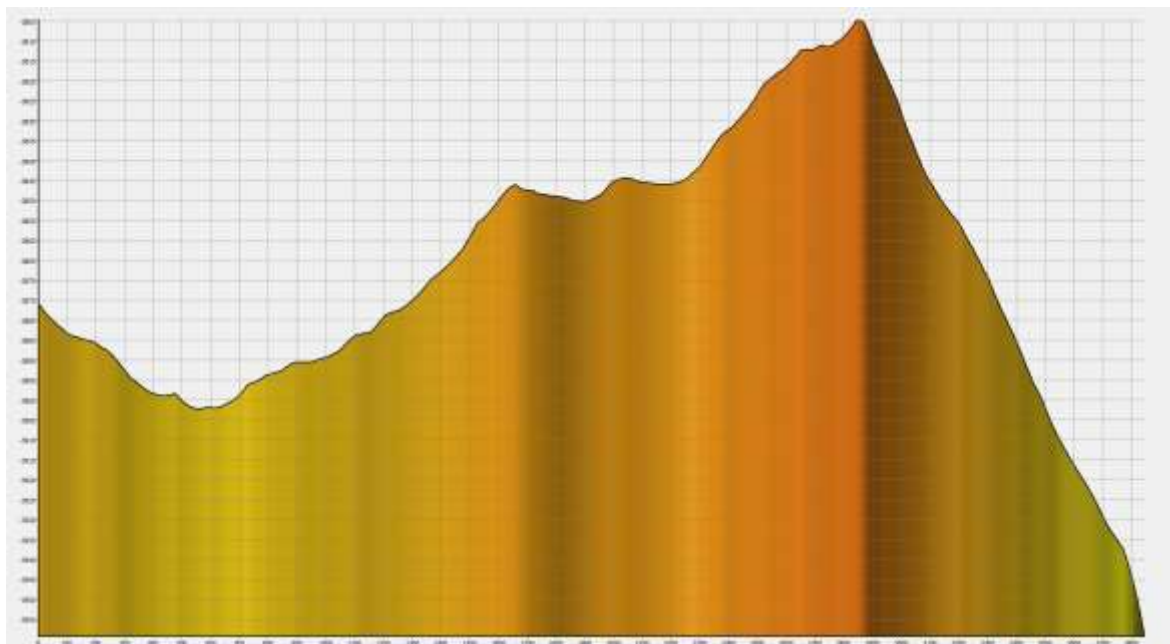


Image 040: Depth profile of the line shown in **Image 039**

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 047.tif - 2.80MB\]](#)

3D Images of Proposed *Tell Qarqur Guyot* Feature

The following section contains a selection of 3D Renderings of the proposed feature from various angles. The angle is shown in the small overview image accompanying each 3D-rendering

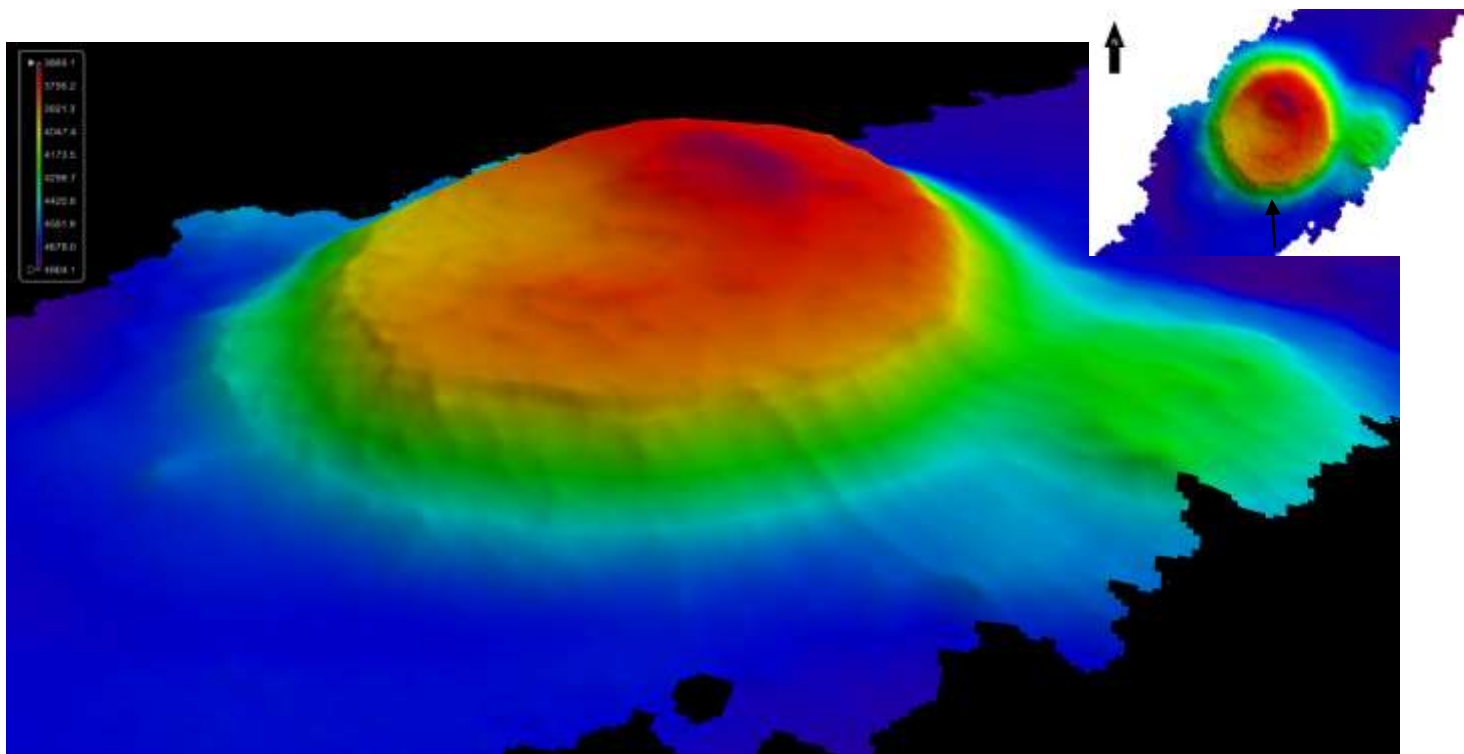


Image 041: Looking northwards from a position on the south side of the feature

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 048.png

- 937KB]

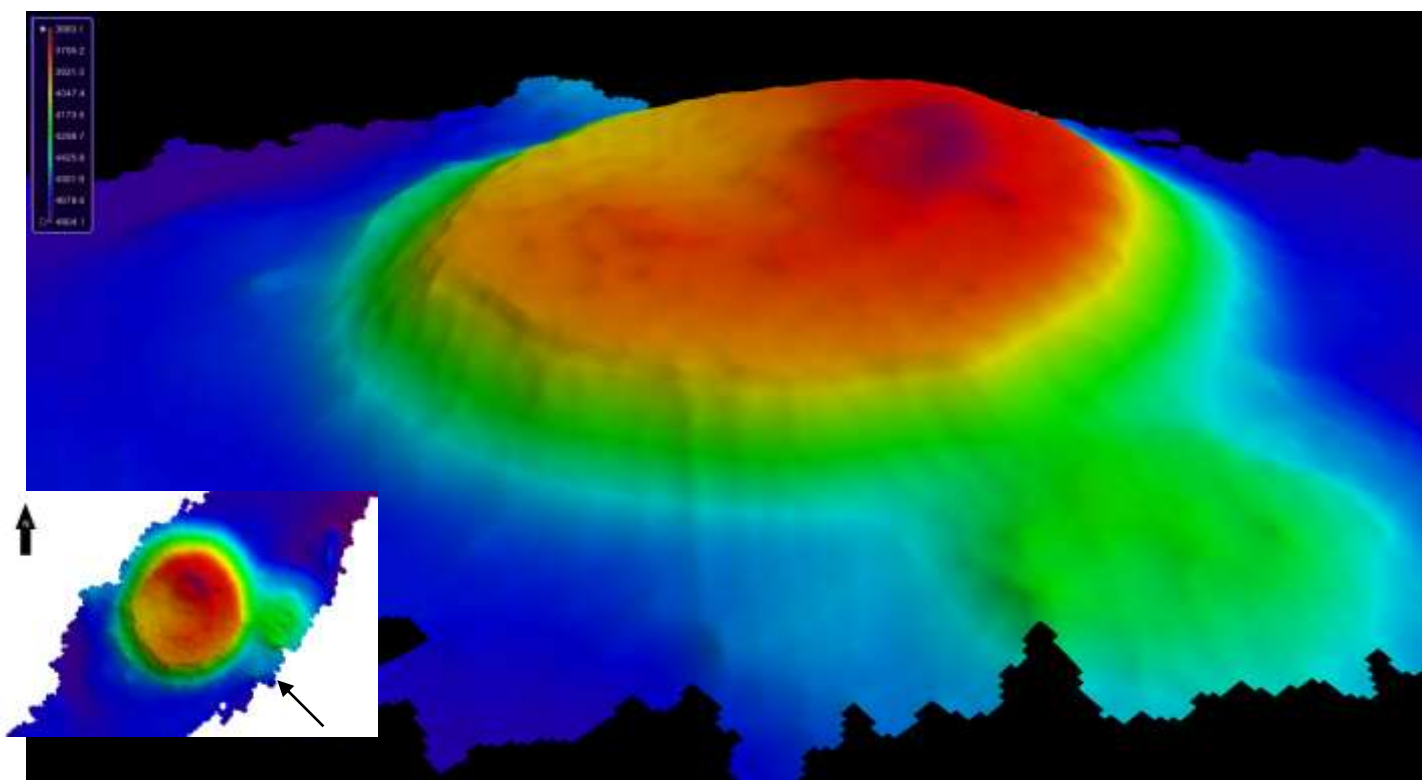


Image 042: Looking NNW from a position on the SSE of the proposed *Tell Qarqur Guyot* feature

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 049.png

- 1.09MB]

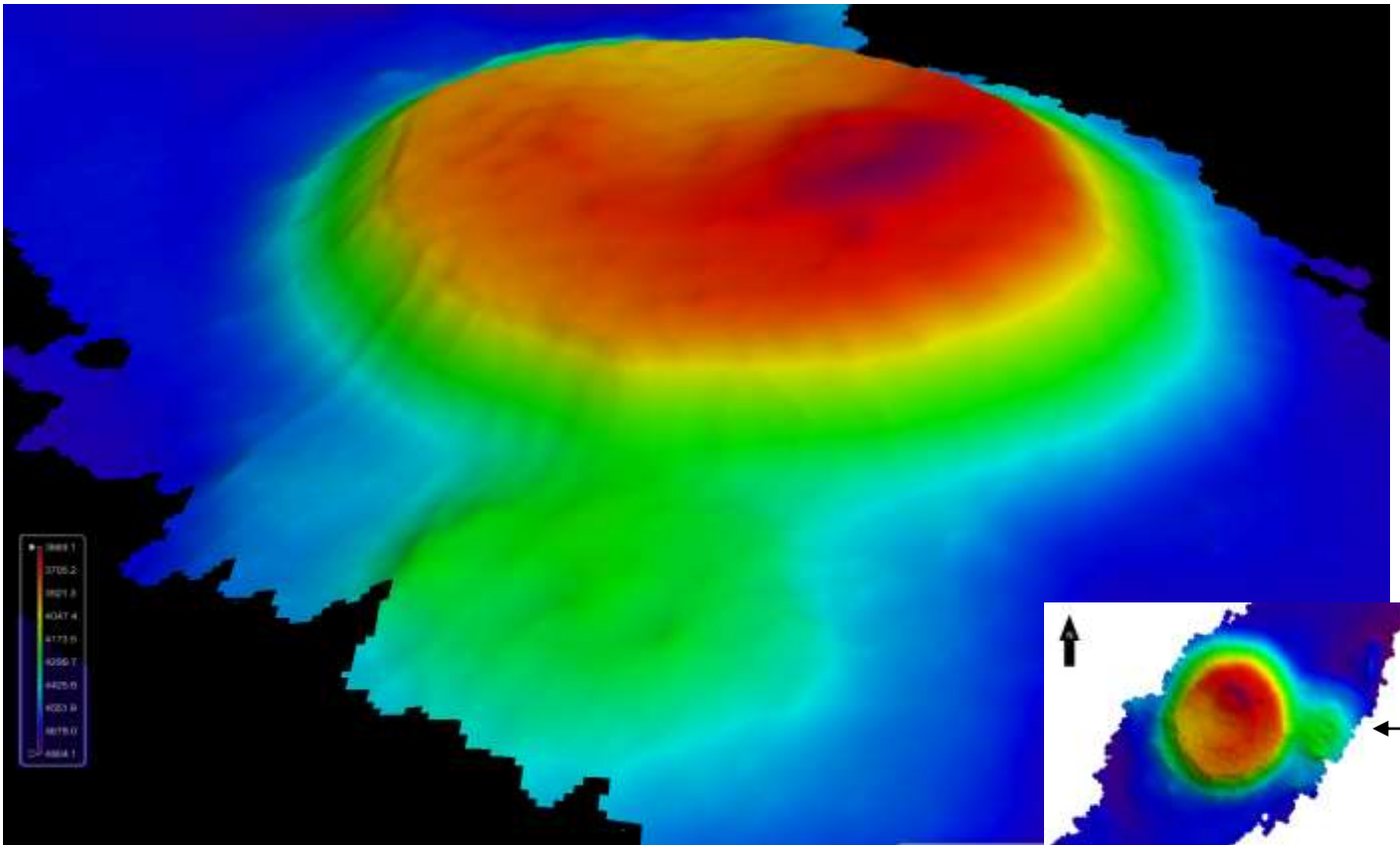


Image 043: Looking West from a position on the East of the proposed *Tell Qarqur Guyot* feature
 [Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 050.png - 1.10MB]

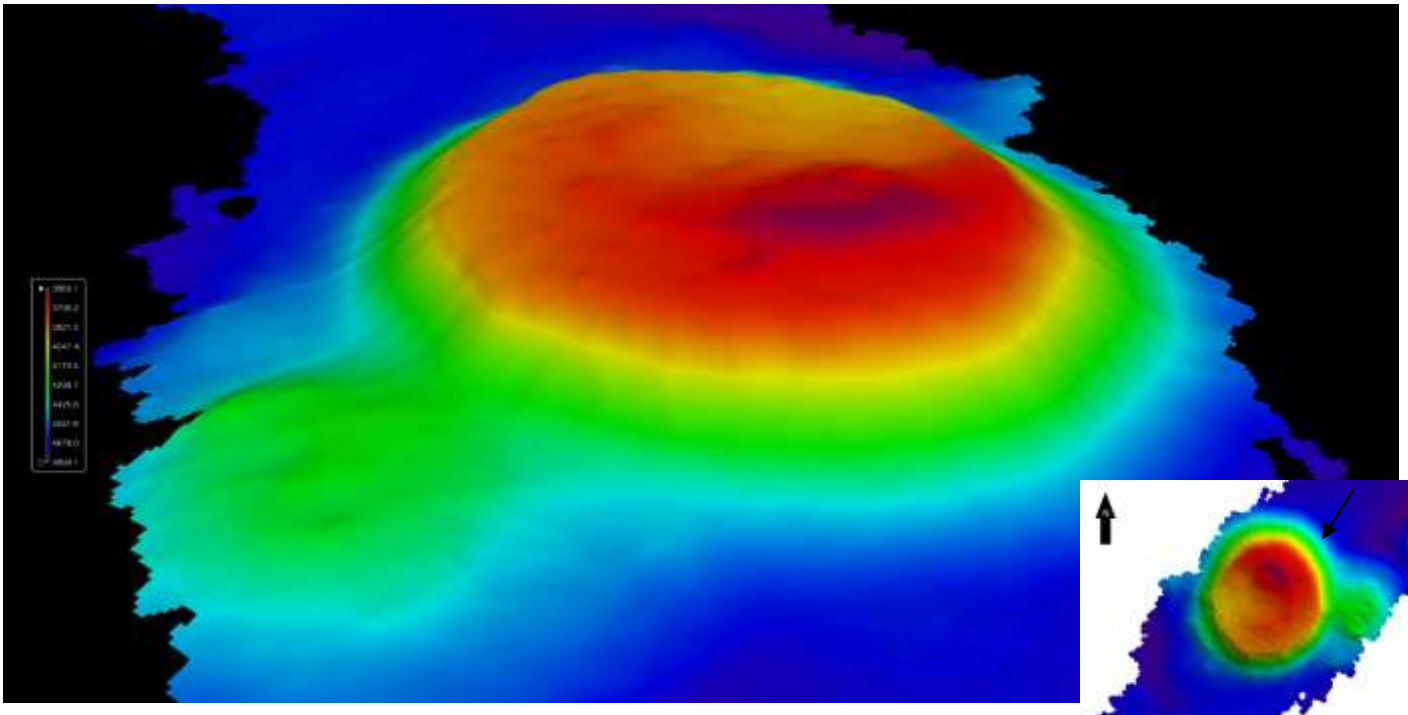


Image 044: Looking SSW from a position on the NNE of the proposed *Tell Qarqur Guyot* feature
 [Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 051.png - 1.08MB]

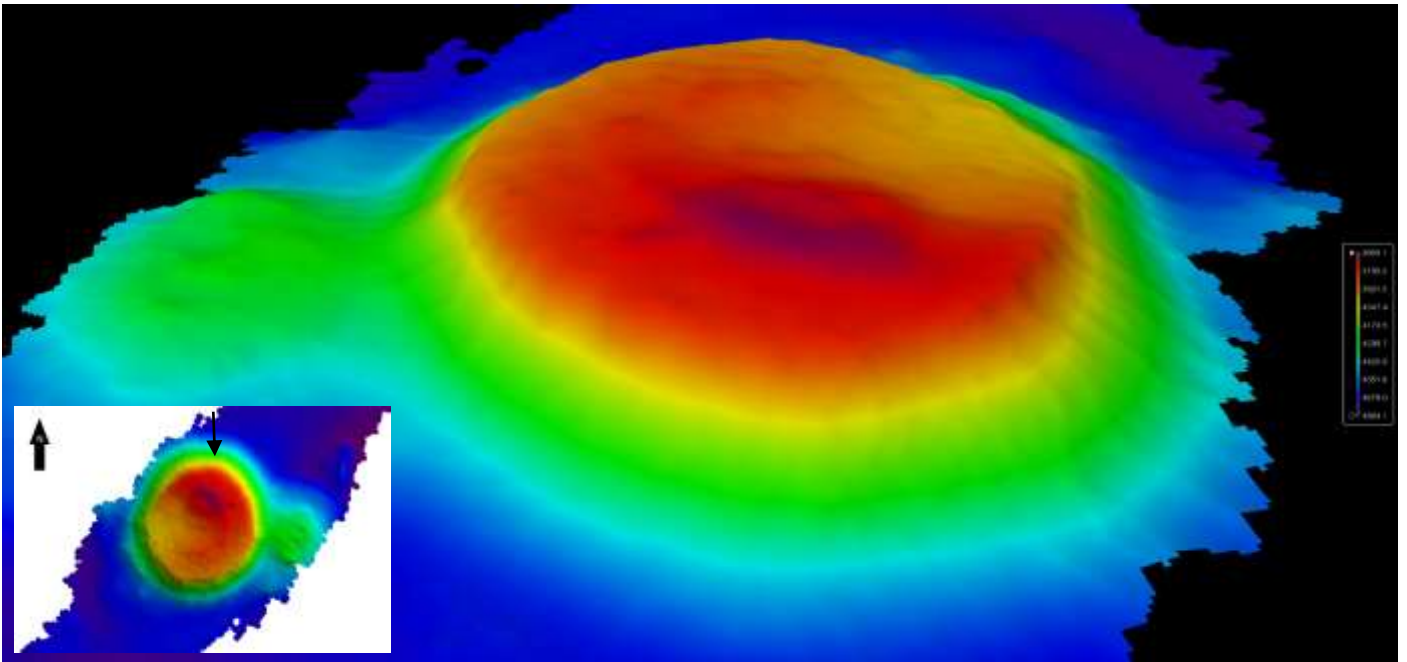


Image 045: Looking South from a position on the North of the proposed *Tell Qarqur Guyot* feature
 [Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 052.png - 1.23MB]

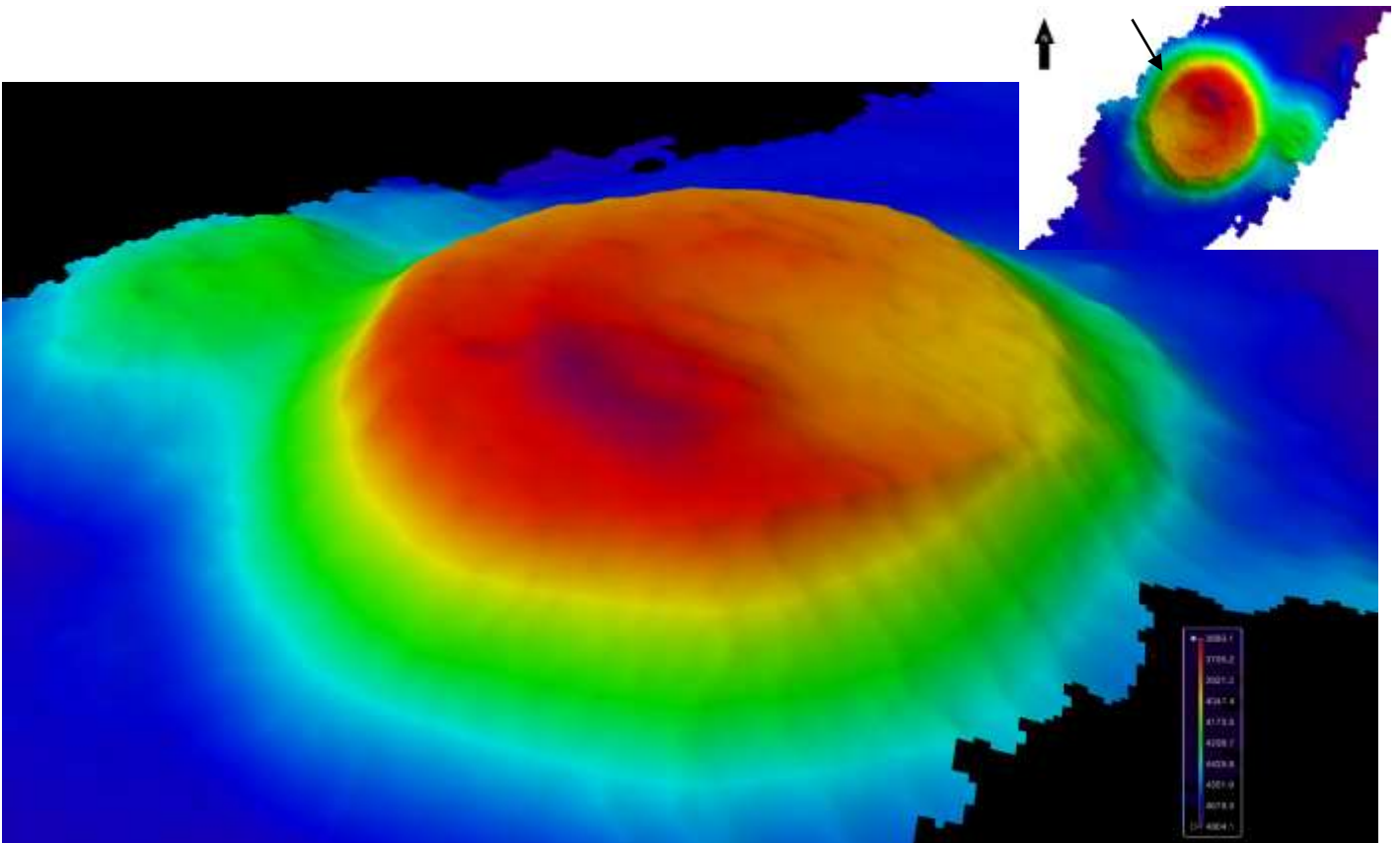


Image 046: Looking SSE from a position on the NNW of the proposed *Tell Qarqur Guyot* feature
 [Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 53.png - 1.22MB]

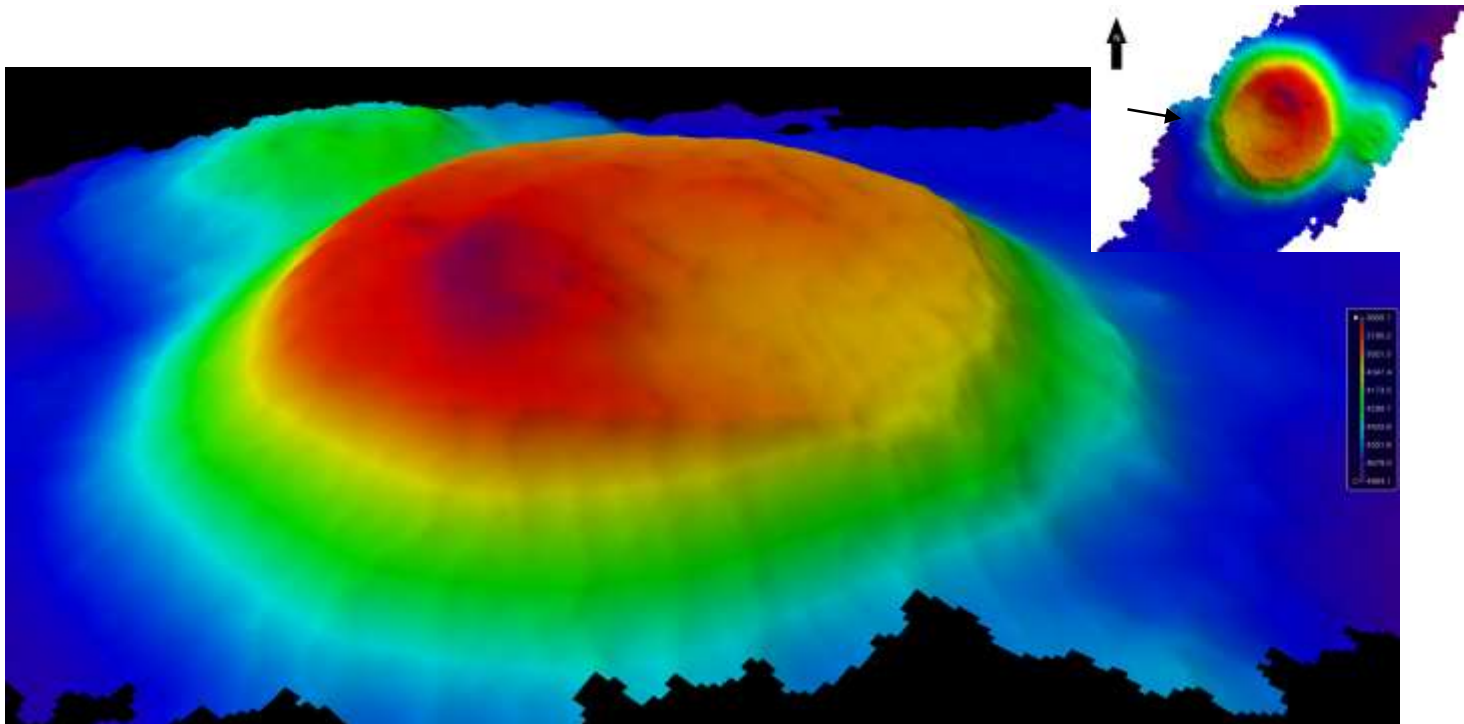


Image 047 Looking East from a position on the West of the proposed *Tell Qarqur Guyot* feature
 [Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 054.png - 1.41MB]

Associated Features:

Chart/Map References:	Shown Named on Map/Chart:	No
	Shown Unnamed on Map/Chart:	No
	Within Area of Map/Chart:	

Reason for Choice of Name (if a person, state how associated with the feature to be named):

The discoverer has proposed the name *Tell Qarqur Guyot* for this feature (details given below). However, the proposer offers SCUFN/IHO/IOC the option to apply another name from their list of existing names that have yet to be applied to a subsea feature.

The feature type GUYOT was selected from *Publication B-6 Edition 4.1.0, September 2013* based on the published description:

GUYOT - A SEAMOUNT with a comparatively smooth flat top.

A SEAMOUNT is described in the same publication as

A distinct generally equidimensional elevation greater than 1000m above the surrounding relief as measured from the deepest isobath that surrounds most of the feature.

The proposed feature meets the characteristics of Guyot:

- Total relief from the deepest isobath is 1082m exceeding the 1000m requirement by 82m
- Feature is generally equidimensional 7800 x 6500m. See images and plots above
- The top is comparatively smooth

Choice of name:

Tell Qarqur is a major archaeological site located in the Orontes River Valley of western Syria. Situated in a rich alluvial plain known as the Ghab valley, the double-mounded site lies near the modern Syrian town of Jisr ash-Shugur and one kilometer west of the village of Qarqur (*more detailed information included below*)

While conducting the multibeam survey which identified the feature detailed in this proposal

the team would display the news on one of the control room screens for the crew to read. The BBC (British Broadcasting Corporation) ran a series of articles called the Museum of Lost Objects. These articles covered archeological sites that had been damaged or looted in Syria and Iraq since 2003 and this was one of the news articles that was displayed in our control room.

Link to article: <http://www.bbc.co.uk/news/magazine-35696798>

Through ongoing media coverage of the conflict in Syria and Iraq we are acutely aware of the destruction of major historical objects, such as the temple at Palmyra, Syria but many other features have also been destroyed or damaged during the conflict. Among the features damaged is Tell Qarqur which occupies a strategic location in Syria

While reading the article we noticed that the feature we had found exhibited many similarities in appearance to Tell Qarqur. We discussed the name amongst the team and felt it fitting to apply this name not only based on the similarities but also as a reminder of the damage that this conflict has caused to these historic locations that are now lost or damaged irreparably



Image 048: Photograph of Tell Qarqur in Syria

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 055.jpg

- 102KB]

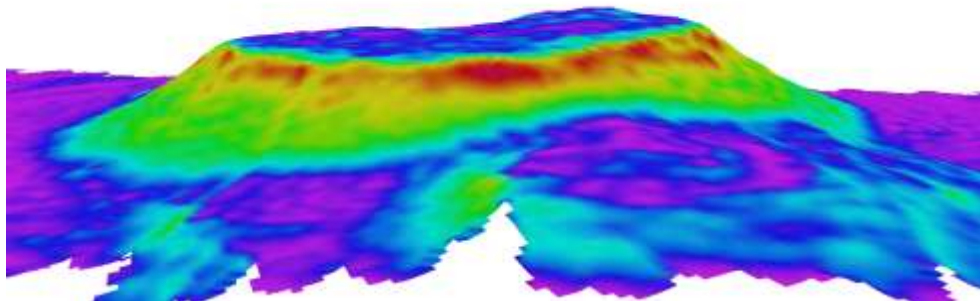


Image 049: 3D Rendering of proposed Tell Qarqur Guyot showing similarities between the two features

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 038.tif

- 1.04MB]



Image 050: Photograph of Tell Qarqur in Syria
[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 056.jpg

- 98KB]



Image 051: Damaged by war. Some of the latest satellite image of Tell Qarqur show tank emplacements dug into the top of this important historical site.

[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 057.jpg

- 62.6KB]

Further information on the site:

Link to Wikipedia page: https://en.wikipedia.org/wiki/Tell_qarqur

Tell Qarqur possesses a 10,000-year history of virtually continuous occupation, from the Pre-Pottery Neolithic A (c. 8500 BC) through the Mamluk period (AD 1350). However, the settlement reached its greatest extent during the Early Bronze Age (3000–2000 BC), and again during the Iron Age II (1000–500 BC). The site is probably best known for its probable association with the ancient town of Qarqar, the location of a major battle that occurred in 853 BC. The Battle of Qarqar, recorded both in Neo-Assyrian royal annals and on the Kurkh Monolith, was fought between the Neo-Assyrian army under the leadership of Shalmaneser

III and a coalition of small Levantine kingdoms. The Levantine alliance included Biblical figures such as King Hadadezer (Ben Hadad) of Damascus and King Ahab of Israel.

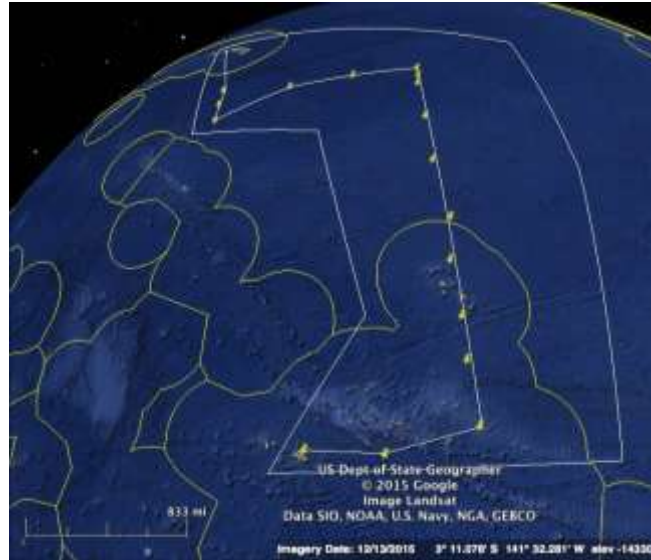
Archaeology

The tell has two mounds, a smaller one to the north and a larger one to the south. The high mound extends to 30 metres (98 ft) above the plain. Tell Qarqur was first subjected to scientific excavation in 1983 and 1984 by an expedition of the American Schools of Oriental Research (ASOR) and Brigham Young University (BYU), led John M. Lundquist of BYU. From 1993 to 1999 the site was excavated by an ASOR-sponsored expedition under the direction of Dr. Rudolph Dornemann. The excavations uncovered remains of many different phases of the site's long occupational history, but the project found especially impressive remains dating to the Early Bronze Age IV (2200–2000 BC) and the Iron Age I–II (1200–500 BC). Finds included several phases of stone-built fortification walls, numerous private houses, and a temple complex dating to the later third millennium BC. After a pause, excavations were resumed in 2005 when the University of Arkansas became a cosponsor of the project and Dr. Jesse Casana joined the expedition. Work was conducted for three seasons, in 2005, 2007 and 2008. Archeological team found out that Tell Qarqur not only survived "4.2 kiloyear event", a severe aridification event that brought collapse to nearby civilisations, but even expanded. Several important artifacts from the site are currently on display at the Hama Museum in Hama, Syria.

Discovery Facts:	Discovery Date:	3 rd February 2016
	Discoverer (Individual, Ship):	Leighton Rolley (Hydrographer) – (Employee of Schmidt Ocean Institute) Onboard Research Vessel Falkor

The discovery of the proposed **Tell Qarqur Guyot** occurred during RV *Falkor* science cruise FK160115 departing Honolulu, Hawaii on the 17th November 2016 and arriving in Tahiti on the 11th February 2016.

This was a physical oceanography cruise studying Oxygen Minimum Zones (a detailed overview from the cruise proposal is given below). The cruise involved the deployment of Seabird CTD Rosette in addition to a Trace Metal Rosette, Pumps, Net Tows and several Argo floats. As part of Schmidt Ocean Institutes drive to collect additional datasets for the community the EM302 multibeam systems was run continuously throughout to cruise from Honolulu to Tahiti.



Science Cruise FK160115 Overview

The oxygen minimum zones (OMZs) of the oceans are critical chemical reactors involved in the cycling of carbon and nitrogen in the oceans and atmosphere. Recent studies have discovered that these regions are undergoing a significant expansion due to climate change. Marine microbial populations have a fundamental role in carbon and nitrogen cycle transformations, yet most of our knowledge of marine microbes comes from the sunlit surface that represents 1% of the total ocean volume, while the microbes in the ocean's interior remains enigmatic. We propose to conduct a field program connecting a suite of biochemical, microbiological, and chemical measurements in the Eastern Tropical North Pacific Ocean to characterize these key biogeochemical processes. Newly developed biomedical quantitative proteomics capabilities would be deployed that directly measure the microbial enzymes conducting key reactions for the first time. This direct detection would allow a diagnostic capability to assess the location and extent of important microbial reactions and would be coupled with chemical rate (nitrogen and mercury species) and nucleic acid analyses of microbial populations. Together this study would provide an important analysis of these natural chemical reactors and lay the foundation for assessing their response to ongoing environmental change. Our expedition track from Hawaii to Tahiti will traverse the oxygen minimum waters that extend from the Eastern Tropical North Pacific. We will sample the mesopelagic for metalloenzymes and biogeochemical parameters (nutrients, nitrogen cycle reaction rates, oxygen, nitrous oxide) and microbial diversity.

The multibeam line incorporating the the proposed **Tell Qarqur Guyot** feature is Line **0277** and Line **0278** of the survey (FK160115) conducted by RV Falkor

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 059.jpg\]](#)

STATISTICS FOR SURVEY FK160115, line 0278 20160203 101332

First position S5°16'59.18" W143°10'29.87"
Last position S5°25'24.13" W143°19'14.30"

First date 2016.02.03 and time 10:13:32
Last date 2016.02.03 and time 11:13:34

Number of positions 3602
Total distance 22628 m
Average speed 6.28 m/sec., 12.21 kn
Average time between pos. 1.00 sec.

Average heading 224.56 deg.
Direction sailed 226.15 deg.

First ping date 2016.02.03 time 10:13:22 and ping No 31705
Last ping date 2016.02.03 time 11:13:17 and ping No 32099

Duration of logging 00:59:54 (h:m:s)

No. of pings 395

No. soundings 170640
Valid soundings 170640
% valid 100.00

Total coverage 202608014 m2
Average swath width 6652.70 m

Max depth 4929.88 m
Min depth 3808.30 m
Average depth 4586.55 m

Average time between pings 9.1 sec.

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document – 058.jpg\]](#)

STATISTICS FOR SURVEY FK160115, line 0277 20160203 091335

First position S5°07'37.45" W143°03'05.20"
Last position S5°16'59.04" W143°10'29.75"

First date 2016.02.03 and time 09:13:36
Last date 2016.02.03 and time 10:13:31

Number of positions 3596
Total distance 22034 m
Average speed 6.13 m/sec., 11.91 kn
Average time between pos. 1.00 sec.

Average heading 216.58 deg.
Direction sailed 218.44 deg.

First ping date 2016.02.03 time 09:13:27 and pingNo 31294
Last ping date 2016.02.03 time 10:13:13 and pingNo 31704

Duration of logging 00:59:45 (h:m:s)

No. of pings 411

No. soundings 177552
Valid soundings 177552
% valid 100.00

Total coverage 147271789 m2
Average swath width 5816.32 m

Max depth 5211.77 m
Min depth 3611.28 m
Average depth 4634.46 m

Average time between pings 8.7 sec.

Max depth 5671.84 m
Min depth 4322.46 m

Supporting Survey Data, including Track Controls:	Date of Survey:	17 th January 2016 to 11 th February 2016
	Survey Ship:	Vessel: R/V <i>Falkor</i> Call Sign: ZCYL5 IMO: 7928677 MMSI: 319005600 Home Port: George Town, Gran Cayman Class: GL Operator: Schmidt Ocean Institute
	Sounding Equipment:	Kongsberg EM302 Multibeam 1x0.5 Serial No: 105 Survey ID: FK160115 SIS Version: 4.1.3 Build: 14 DB Version: 24.0 Post Processing: Caris Hips & Sips 8.1.6 Build 2014_02_20_22_35_19
	Type of Navigation:	DGPS was utilized for the entire duration of the survey. Seapath 320 Primary Science S/W Version 1.02.01 MRU 5 S/N 7834 POSMV – Secondary Science GPS Fully Surveyed: 08/2014 DGPS Corrections Model: C NAV 3050 S/N: 12380 SW Version: 3.00 Build 165 Alignment Survey: 08/2014 Average DGPS Correction age 1.5 Seconds NTP S350 Timing Sync Server

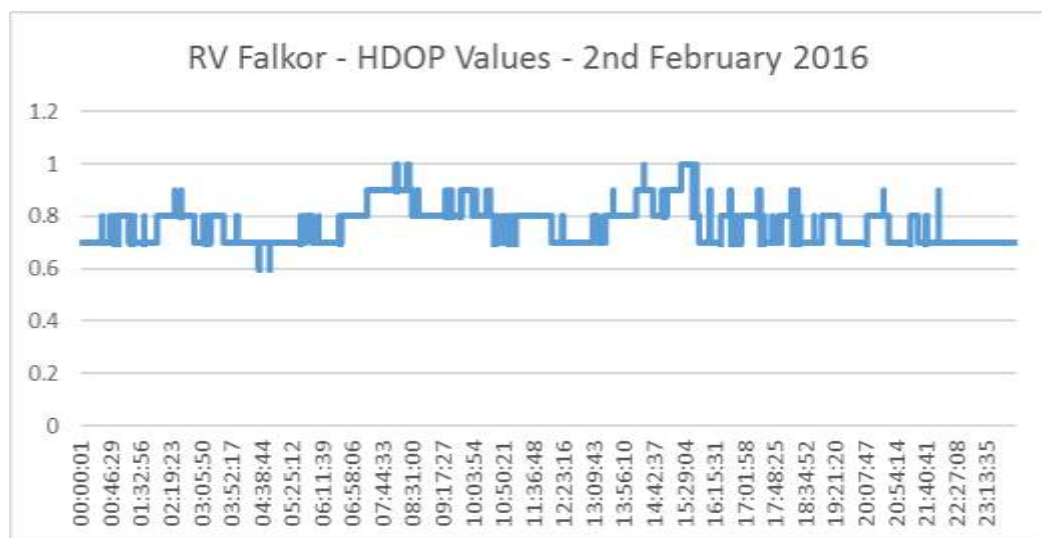
Estimated Horizontal Accuracy (nm):

The vessel average survey speed during the survey line across the proposed feature was **9.02kts** Average time between pings during this survey line was **9.5** seconds giving a horizontal resolution of roughly 40m

HDOP (Horizontal Dilution of Precision) throughout the survey of proposed **Tell Qarqur Guyot** was 0.8-0.9

During the survey XBT's were deployed on 6 hour basis unless a sufficient change was detected in the S/Speed value using a hull mounted Valeport SVP at the transducer face

In addition, CTD's were conducted down to 1000m each day



Above: Primary GPS used throughout survey showing a maximum HDOP of 1.0 throughout day and 0.9 during survey period

[\[Leighton Rolley - Tell Qarqur Guyot - Supporting Document - 060.jpg](#)

- 8.81MB]

Survey Track Spacing:

A single survey line crossed this feature as part of the transit survey

Multibeam Data Processed and Display with:

Caris HIPS and SIPS 9.0.17
Build: 2015 08 10 08 25 46

Flederamus 3D renderings produced using

Flederamus Version 7.4.4b
64 Bit Edition
Build 120, jul 15 2015 05:52:14
EPSG Database Version 7.9

Futher:

A EM302 calibration was conducted prior to this expedition on the 25th September 2015 off Honolulu, Hawaii with third party verification from Paul Johnson, University of New Hampshire

Proposer(s):	Name(s):	Leighton Rolley 156 St. Fagan's Road Fairwater, Cardiff Wales, UK CF5 3EU Tel: UK (+44) 07886784890 Landline: UK (+44) 2920560389
	Date:	27 th April 2016
	E mail:	Leighton.r@soi team.org
	Organization and Address:	Schmidt Ocean Institute 555 Bryant Street, #374 Palo Alto, CA 94301 Phone: (415) 975 4080 Fax: (415) 975 4081
	Concurrer (name, e mail, organization and address):	Veit Huehnerbach Veit.h@soi-team.org C/o Schmidt Ocean Institute 555 Bryant Street, #374 Palo Alto, CA 94301 Phone: (415) 975 4080 Fax: (415) 975 4081 Principle Scientist Mak Saito, Woods Hole Oceanographic Institution, msaito@whoi.edu, 1 Captain R/V Falkor Bernd Buchner C/O Schmidt Ocean Institute 555 Bryant Street, #374 Palo Alto, CA 94301 Phone: (415) 975 4080 Fax: (415) 975 4081

Remarks:	
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NOTE : This form should be forwarded, when completed :

- a) **If the undersea feature is located inside the external limit of the territorial sea :**
to your "National Authority for Approval of Undersea Feature Names" (see page 2 9) or, if this does not exist or is not known, either to the IHB or to the IOC (see addresses below);
- b) **If at least 50 % of the undersea feature is located outside the external limits of the territorial sea :**
to the IHB or to the IOC, at the following addresses :

International Hydrographic Bureau (IHB) 4, Quai Antoine 1er B.P. 445 MC 98011 MONACO CEDEX <u>Principality of MONACO</u> Fax: +377 93 10 81 40 E mail: info@ihb.mc	Intergovernmental Oceanographic Commission (IOC) UNESCO Place de Fontenoy 75700 PARIS <u>France</u> Fax: +33 1 45 68 58 12 E mail: info@unesco.org
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