APPENDIX A.5

Environmental Baseline Supporting Documentation and Maps

Detailed Depth Maps

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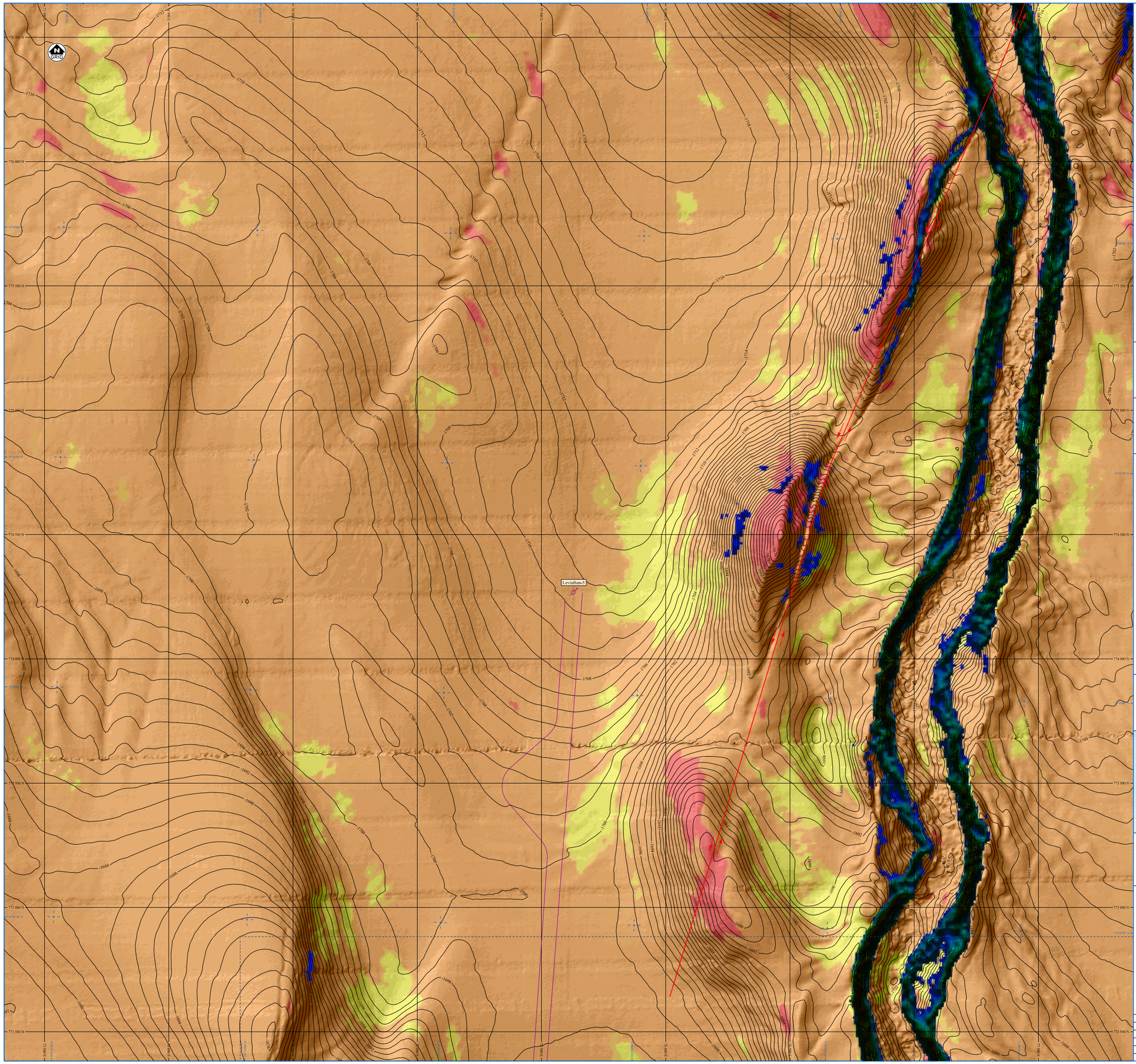


LEGEND

- Proposed well
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- Manifolds 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- 1704 — Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illaminated from northwest at 45° above horizontal

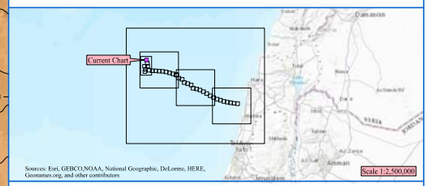
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKIF: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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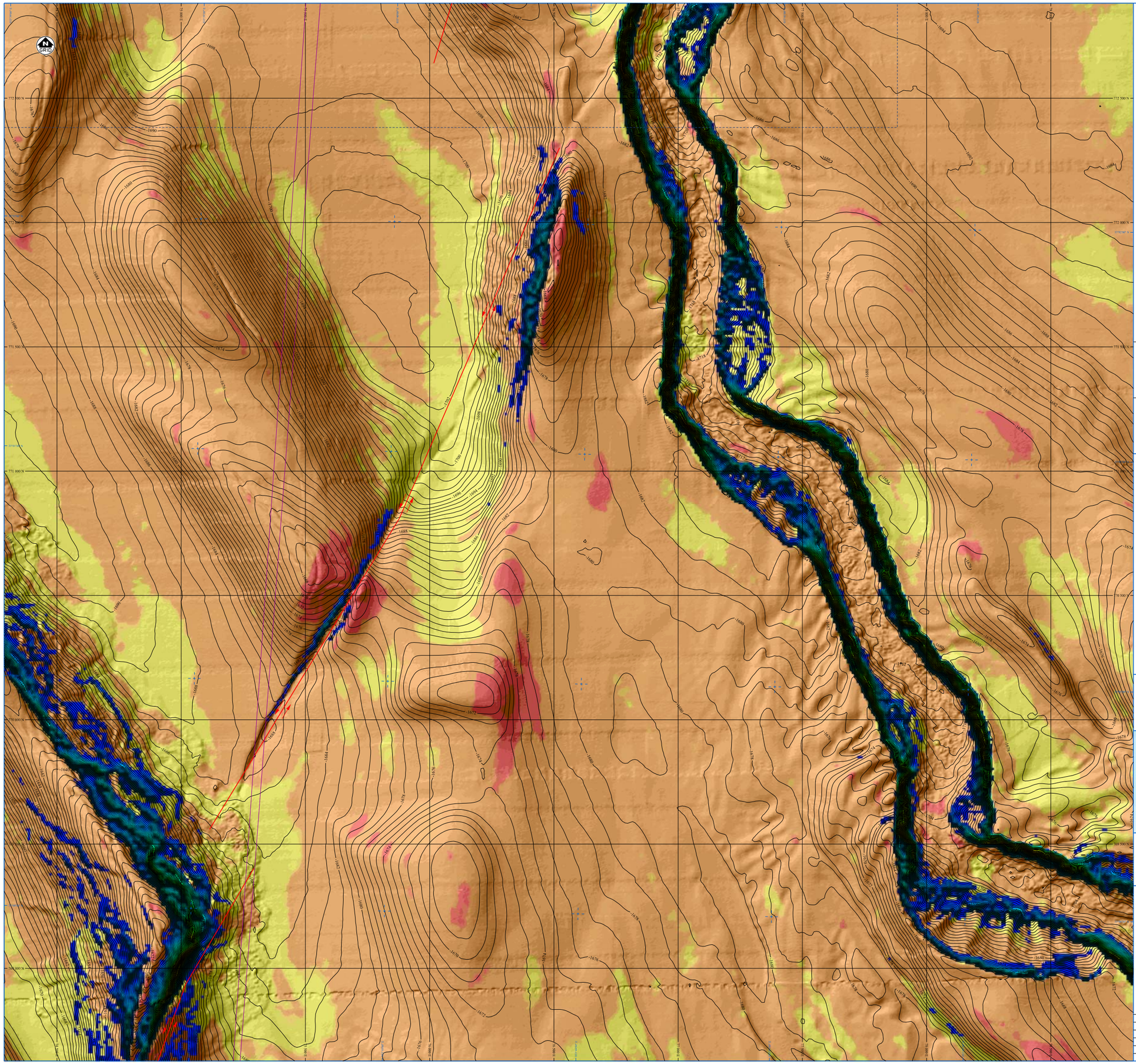
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 1

Prepared by: Gardline Surveys, Inc. 1500 Dingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/PS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.05



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- 1684 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

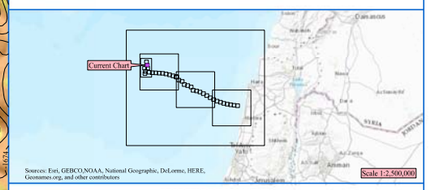
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKIF: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925799433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.3141403356
Inverse Flattening: 298.257222101

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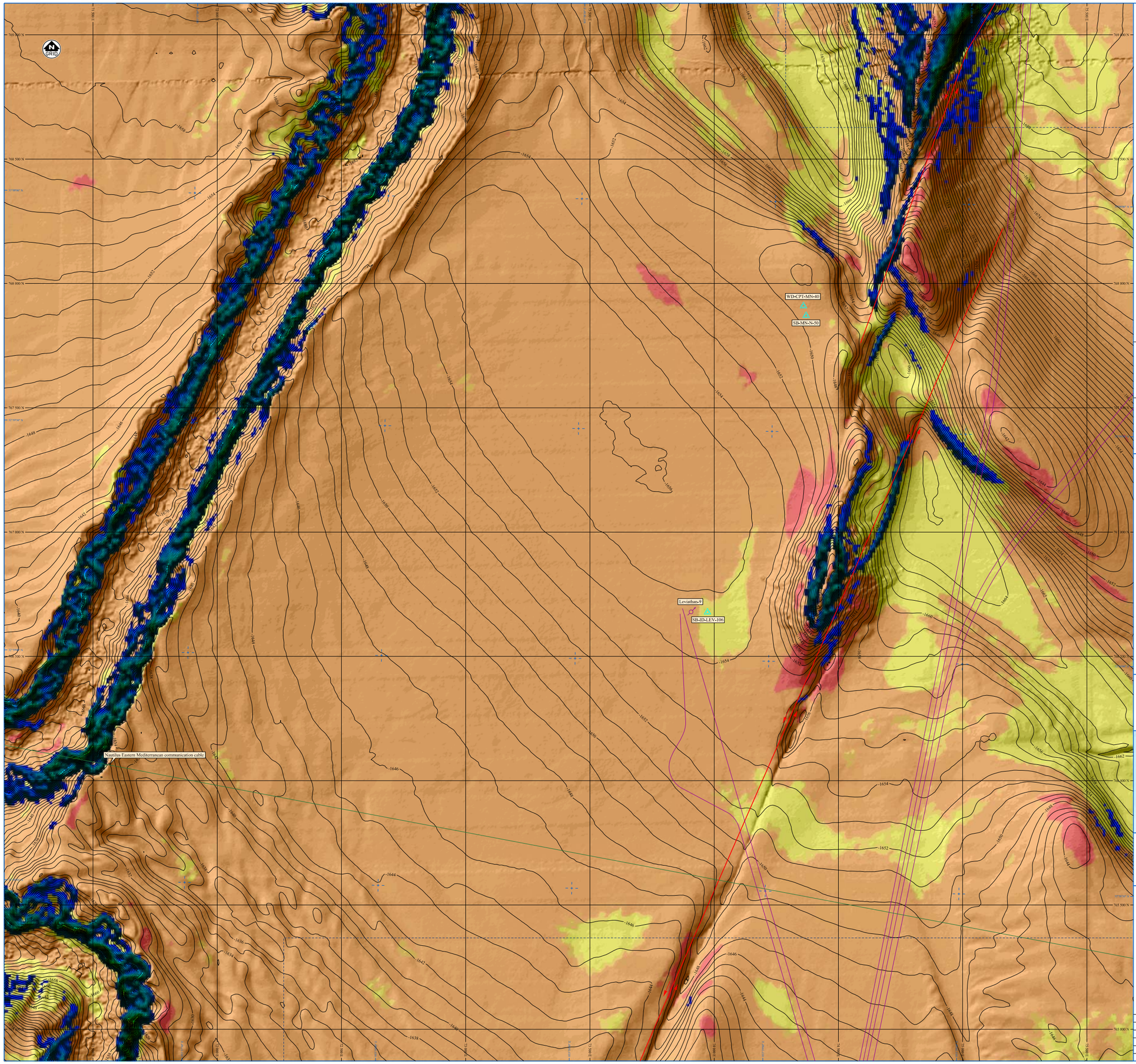
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 2

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10173	REF NO	10173.06



LEGEND

- Proposed well
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- Subsea communications cable
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- 1654 Depth below sea surface to seabed, contoured at 1m intervals .
- Soil boring / CPT location
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

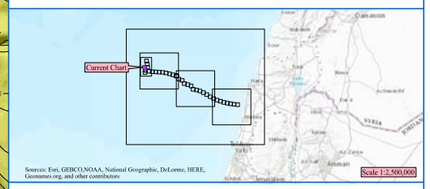
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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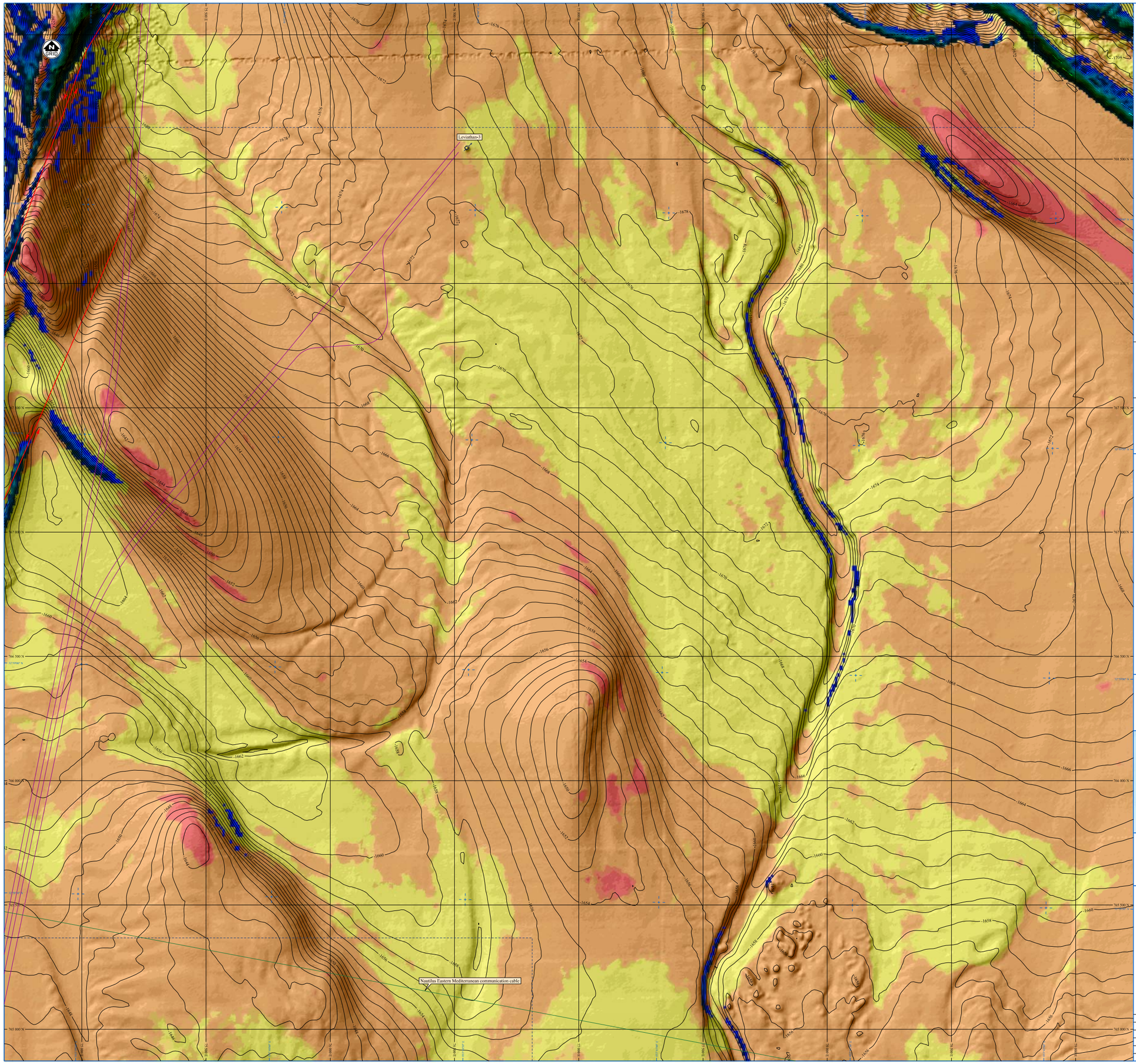
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 3

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.461.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.07



LEGEND

- Existing well
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- Subsea communications cable
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- 1066 Depth below sea surface to seabed, contoured at 1m intervals .
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illaminated from northwest at 45° above horizontal

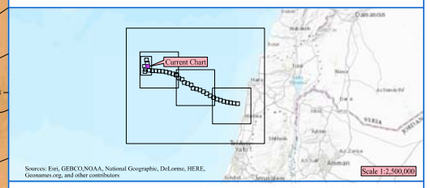
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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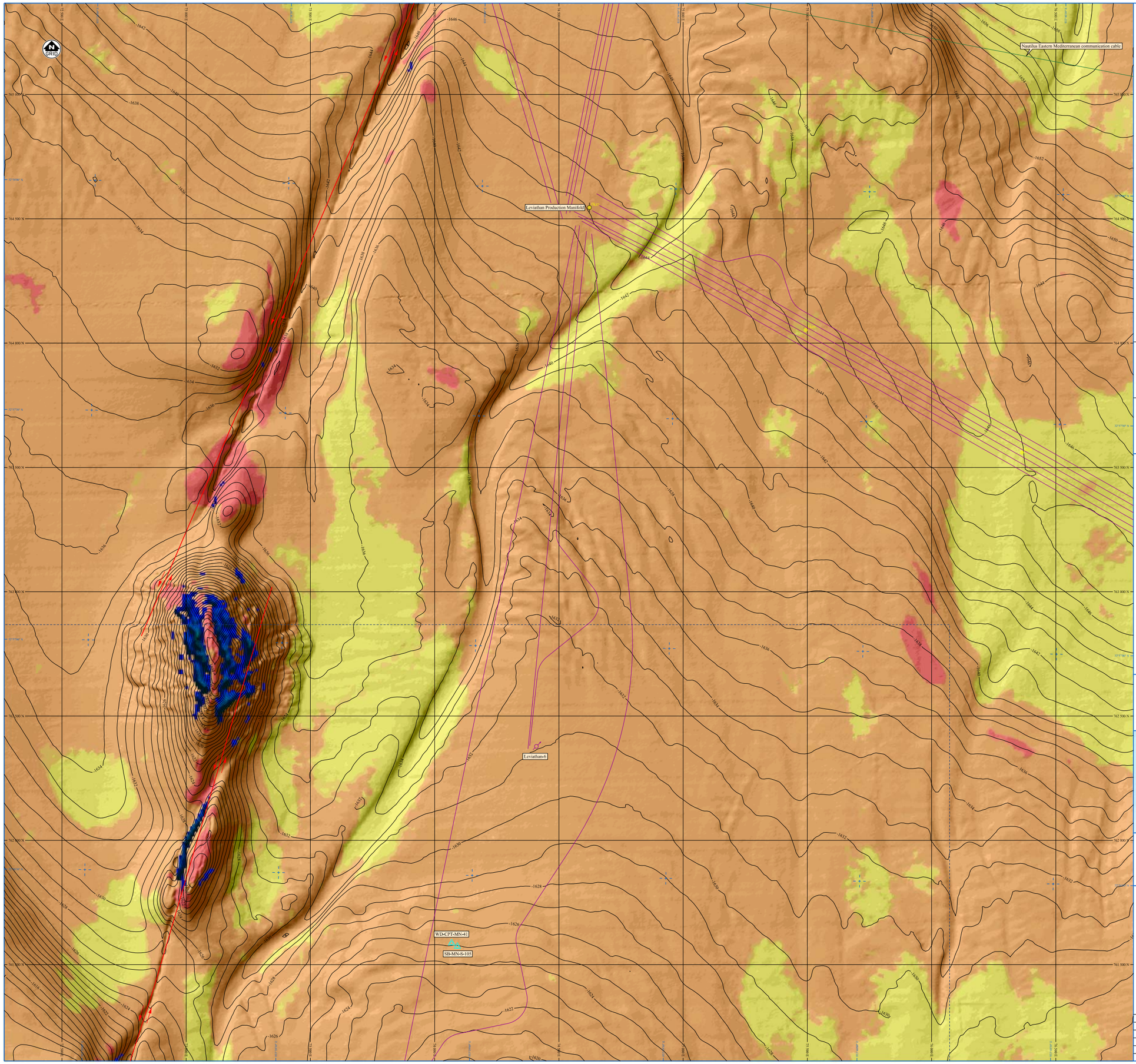
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 4

Prepared by: Gardline Surveys, Inc. 1500 Jungle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10775	REF NO	10773.08



LEGEND

- Leviathan Production Manifold (74,023mE / 764,545m N)
- Proposed well
- KP points
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- Subsea communications cable
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- -1644 Depth below sea surface to seabed, contoured at 1m intervals.
- Soil boring / CPT location
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

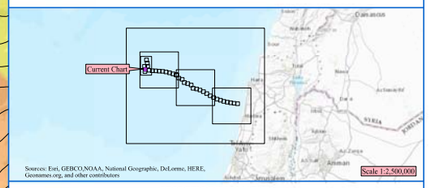
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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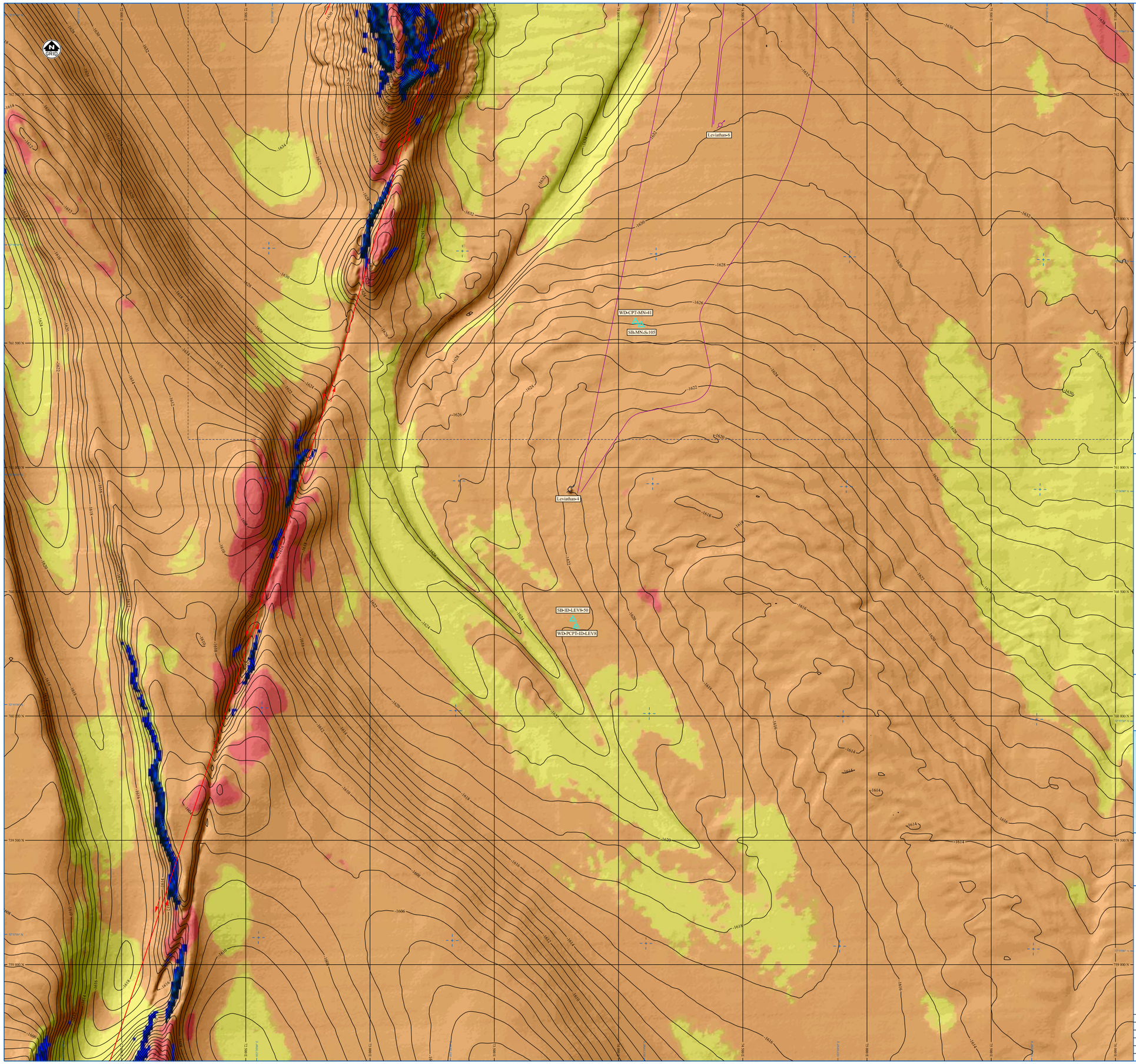
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 5

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.09



LEGEND

- Existing well
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- Mainlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- -1624 Depth below sea surface to seabed, contoured at 1m intervals
- Soil boring / CPT location
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

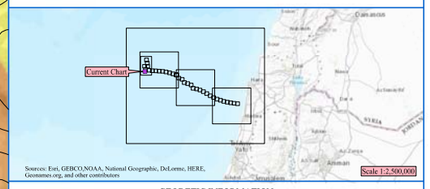
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code: 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.3141403356
Inverse Flattening: 298.257222101

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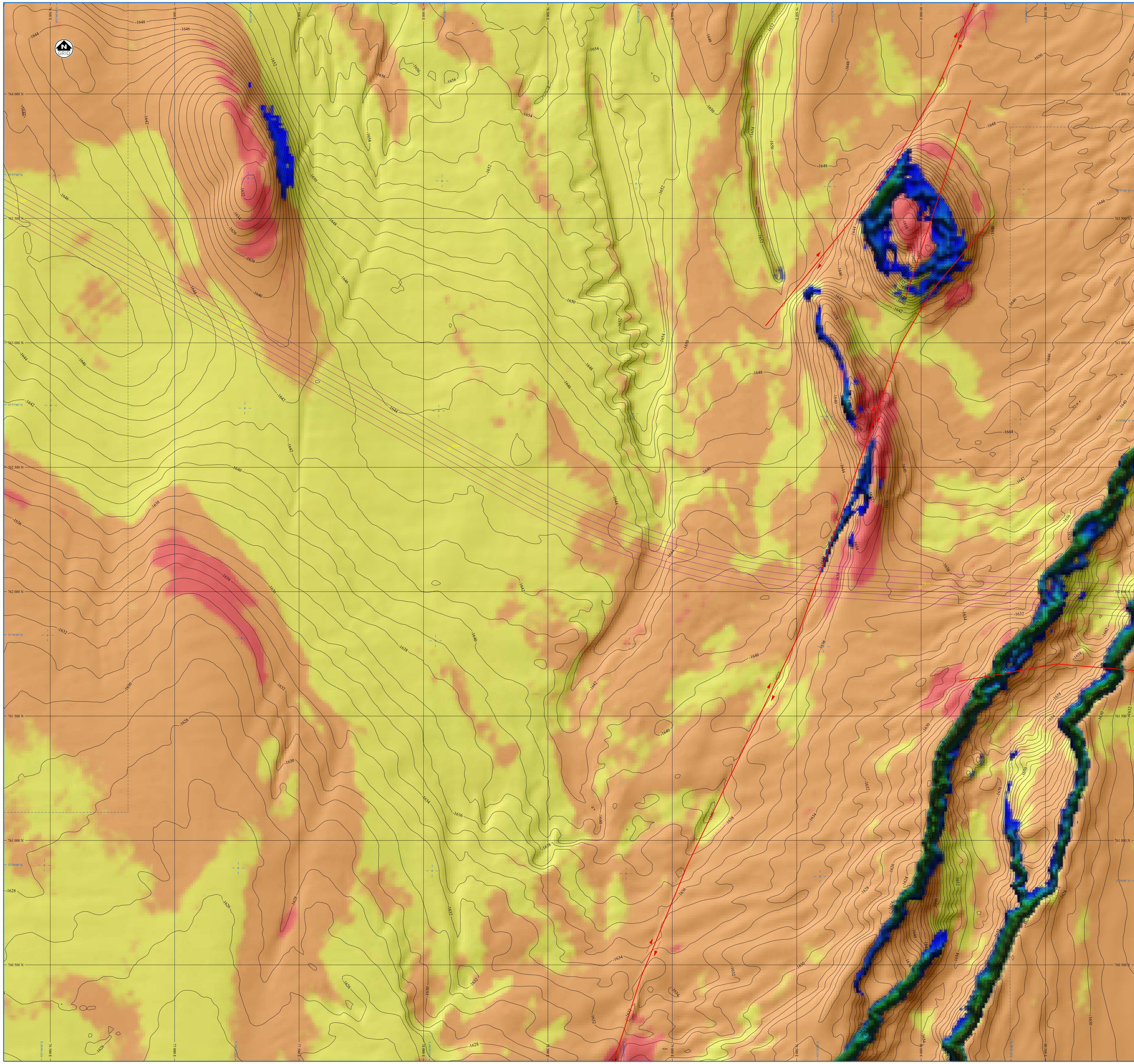
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 6

Prepared by: Gardline Surveys, Inc. 1500 Jungle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2ND DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.10

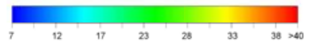


LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- -1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

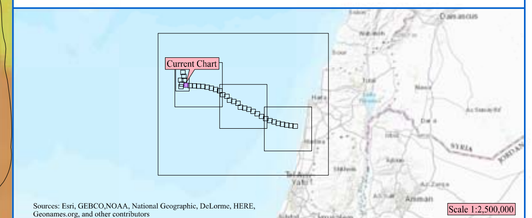
Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal



Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

Feet	0	375	750	1,500	2,250
Meters	0	125	250	500	750



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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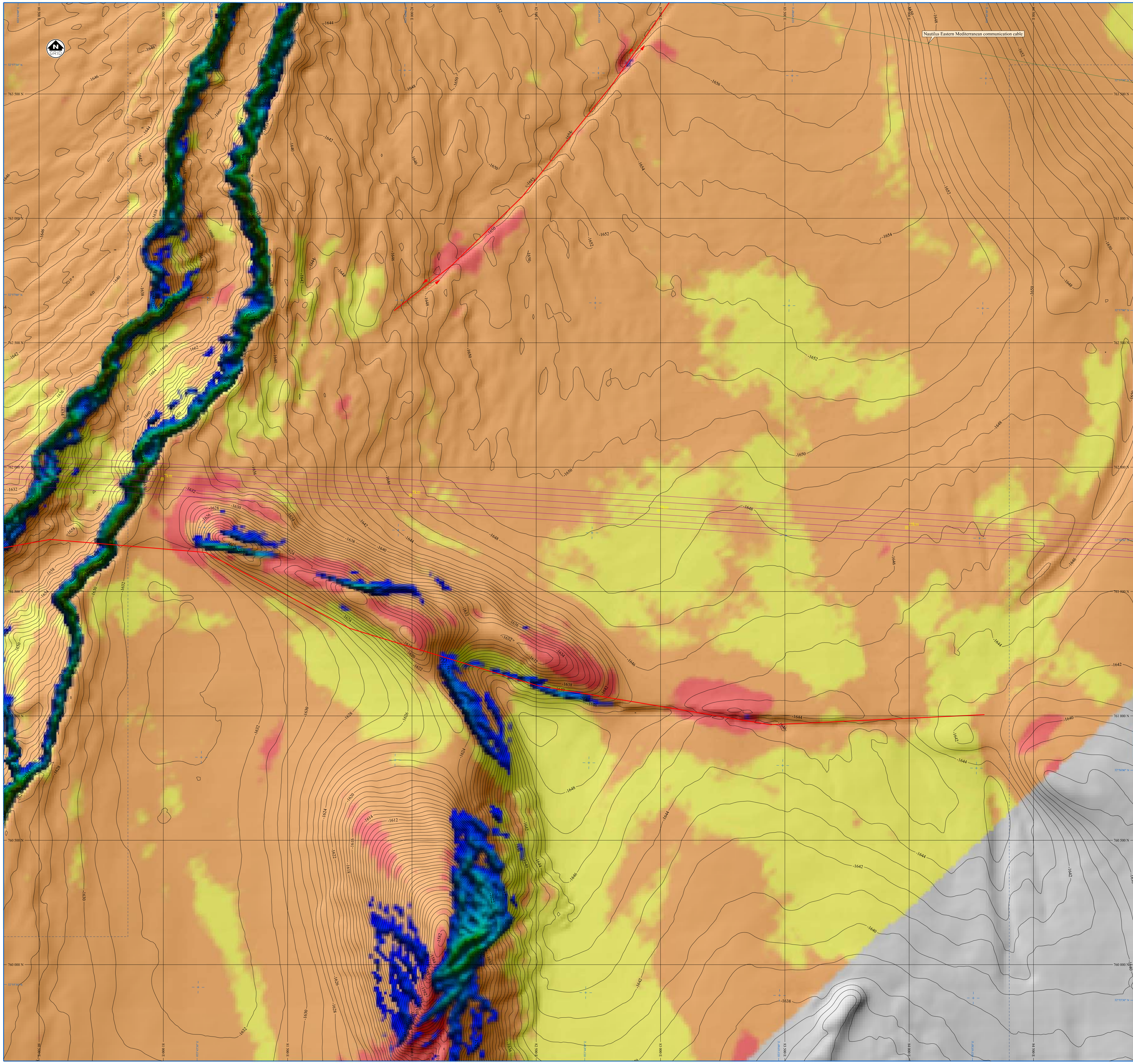
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 7

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.11



LEGEND

Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines

KP points

Subsea communications cable

Matchlines 1:5,000

Strike Slip Faults, with direction of movement where apparent

-1624 Depth below sea surface to seabed, contoured at 1m intervals

Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)

Normally consolidated clays and silts

Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

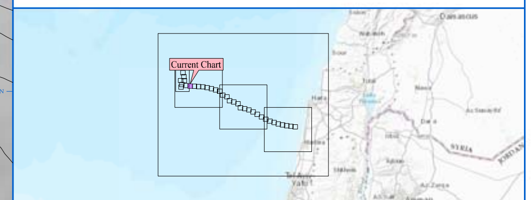
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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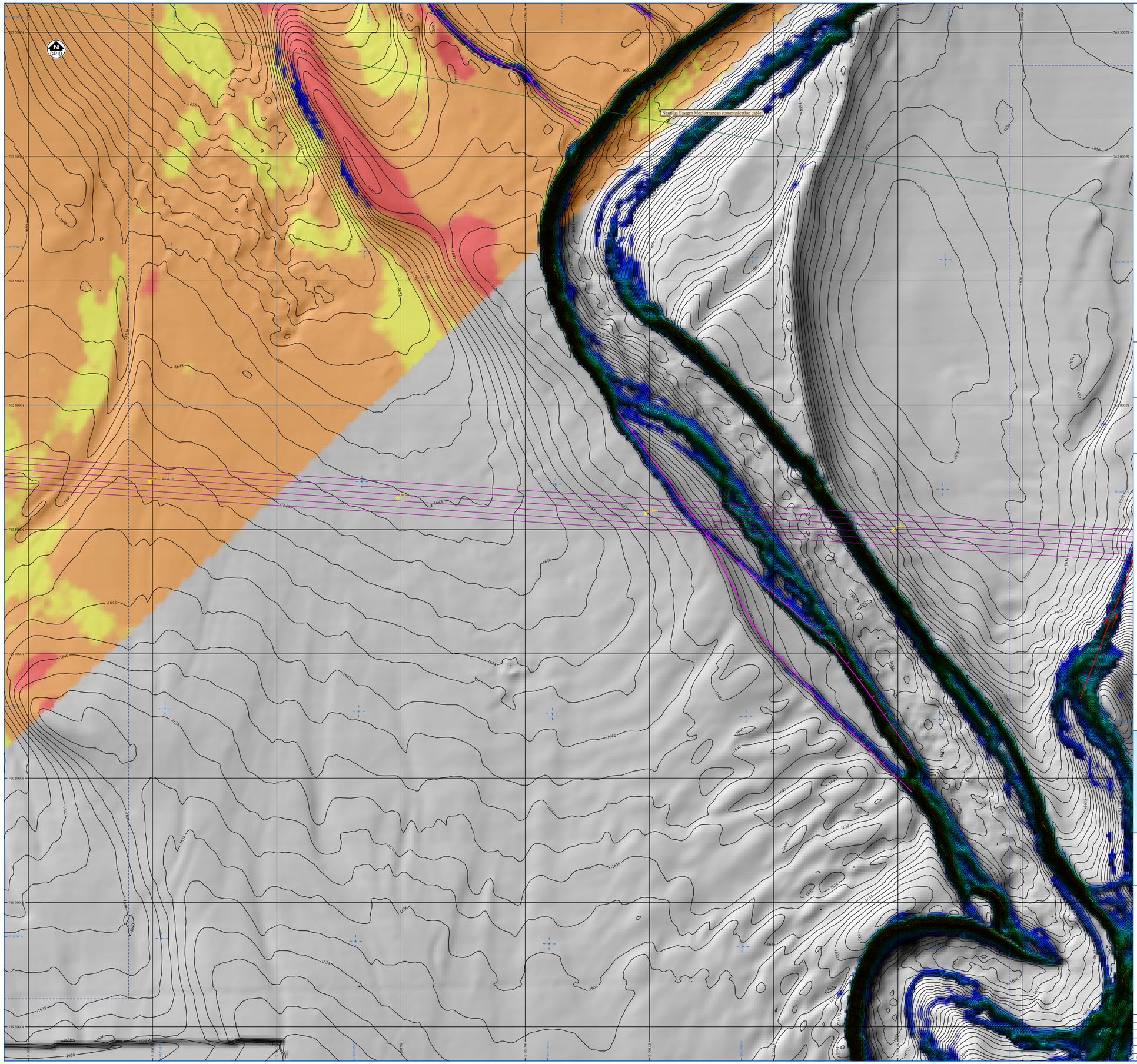
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 8

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.12



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Subsea communications cable
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- Sharp scars
- 1624 Depth below sea surface to seabed, contoured at 1m intervals.
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

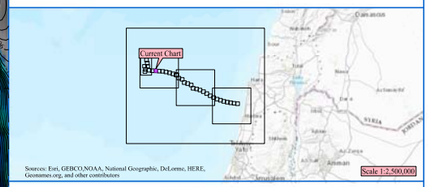
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code: 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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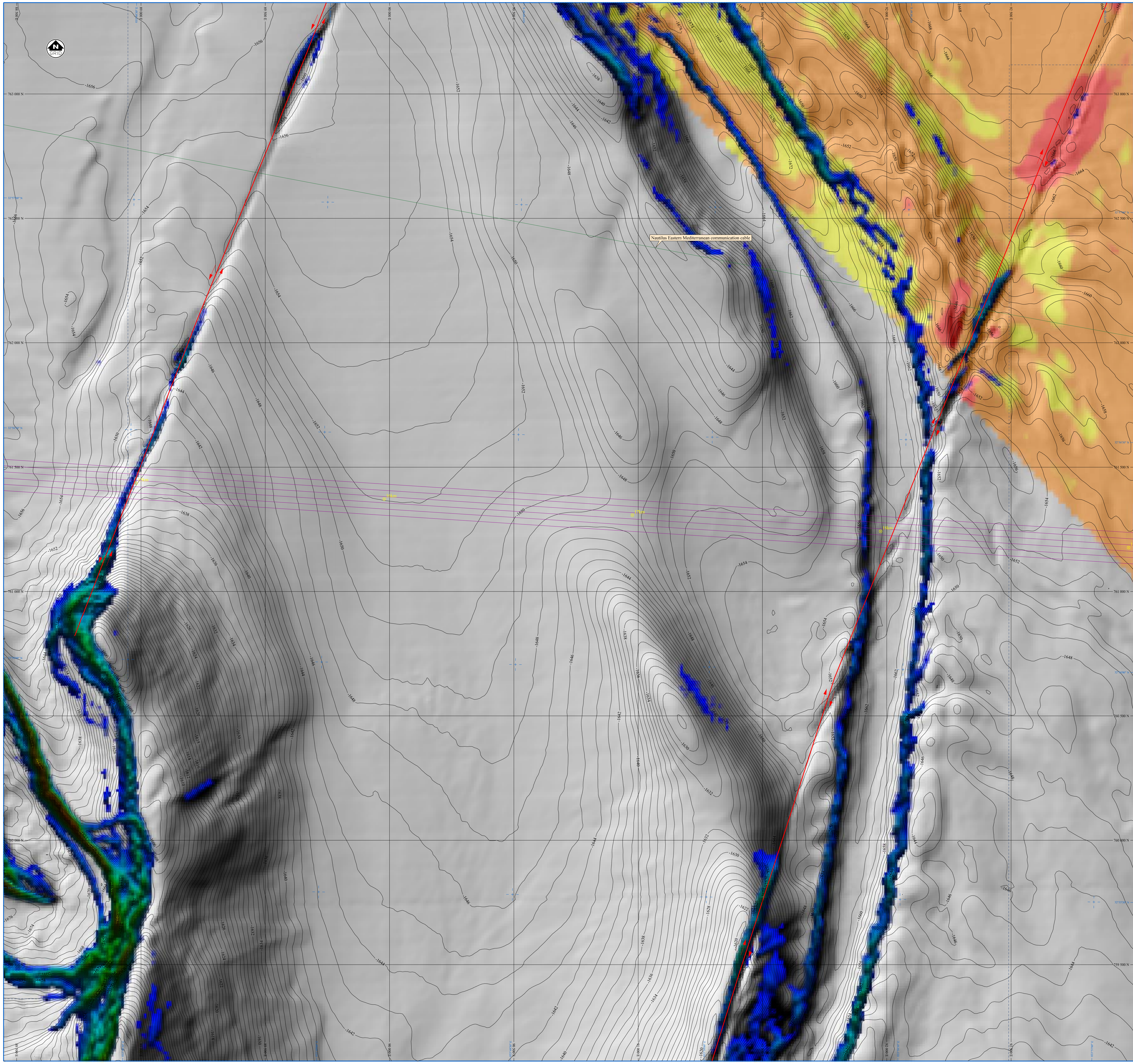
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 9

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE:	N/A	REPORT REF	10773	REF NO	10773.13



LEGEND

	Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines		Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
	KP points		Normally consolidated clays and silts
	Subsea communications cable		Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)
	Matchlines 1:5,000		
	Strike Slip Faults, with direction of movement where apparent		
-1624	Depth below sea surface to seabed, contoured at 1m intervals		

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

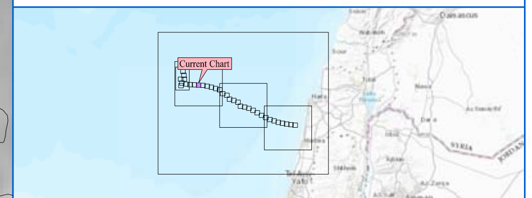
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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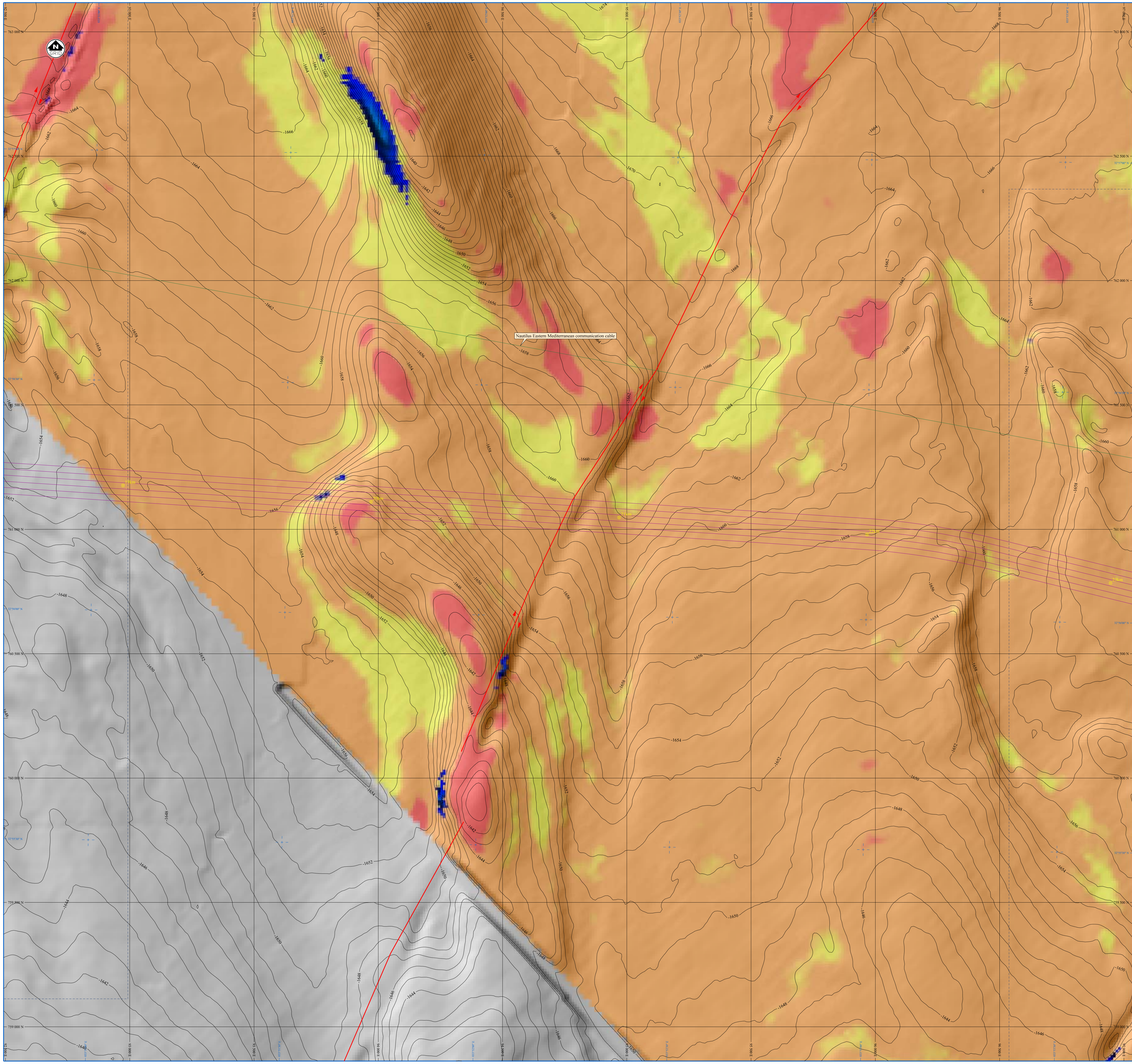
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 10

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.14



LEGEND

	Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines		Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
	KP points		Normally consolidated clays and silts
	Subsea communications cable		Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)
	Matchlines 1:5,000		
	Strike Slip Faults, with direction of movement where apparent		
-1624	Depth below sea surface to seabed, contoured at 1m intervals		

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

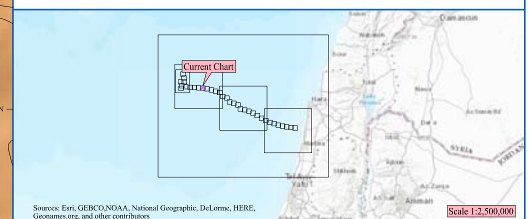
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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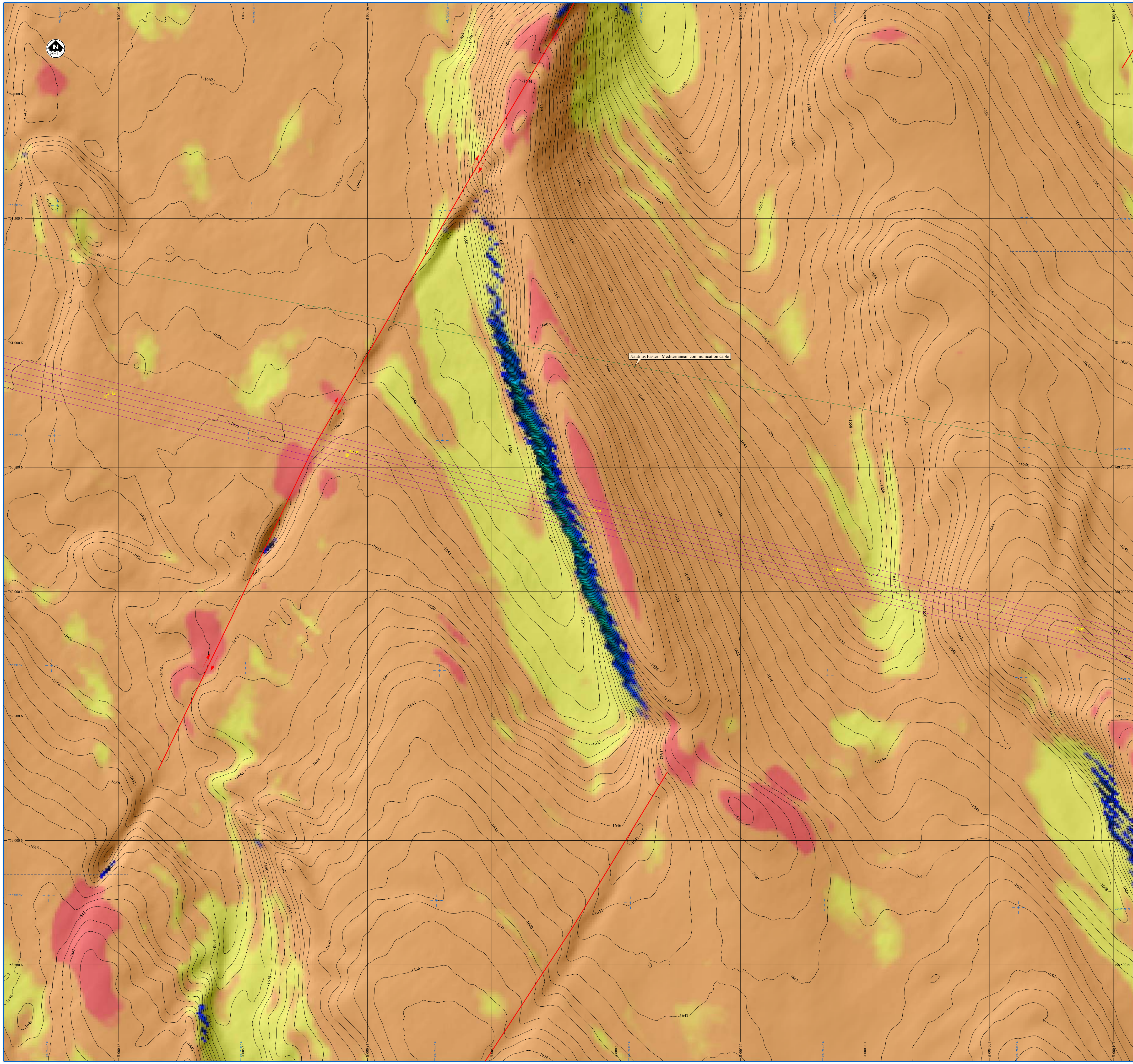
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 11

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.15



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Subsea communications cable
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- -1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

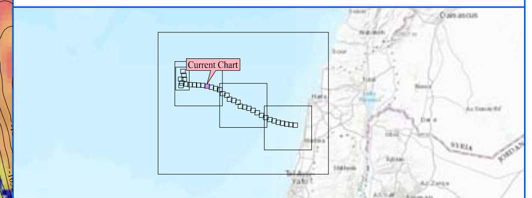
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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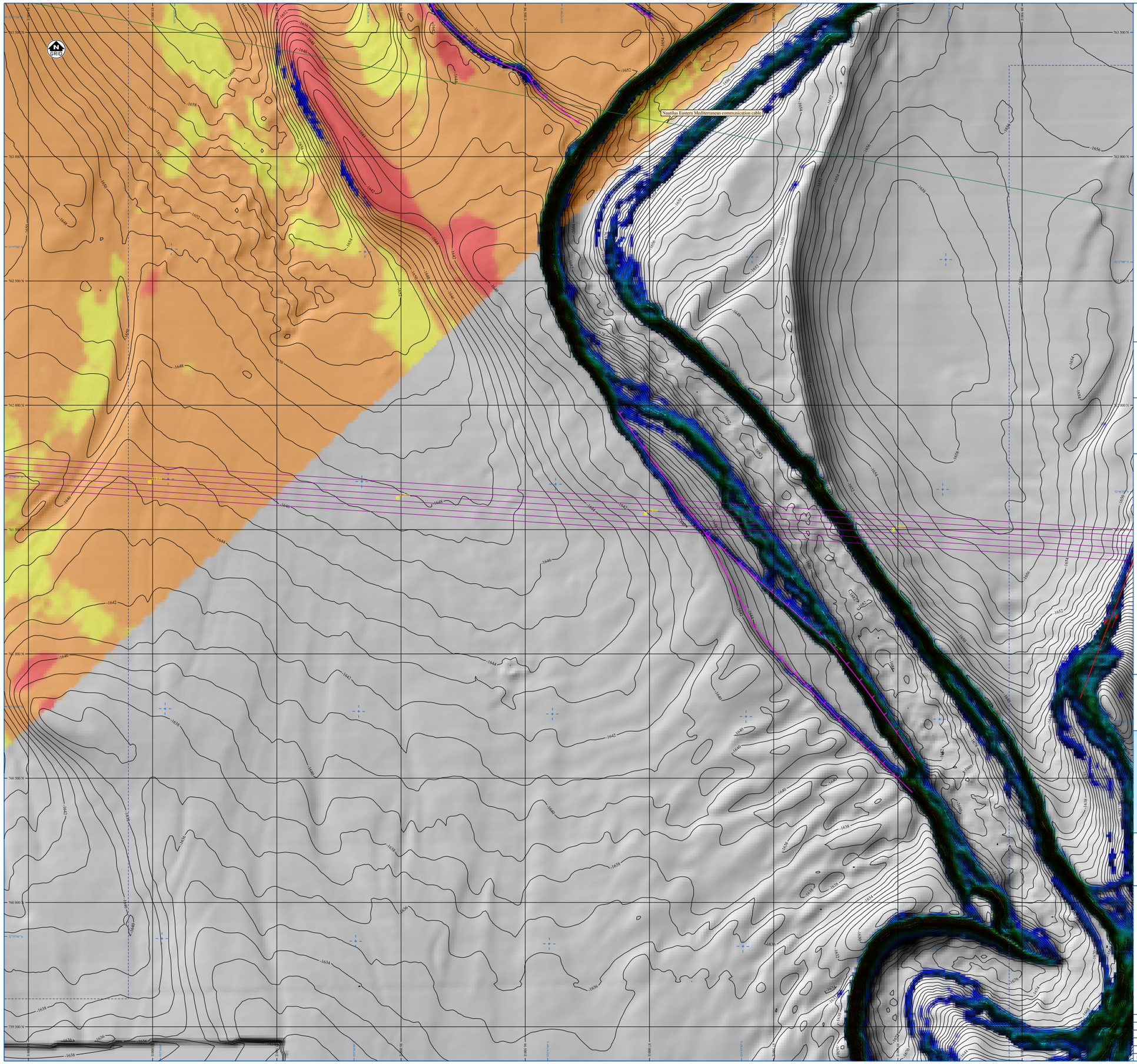
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 12

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.16



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Subsea communications cable
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- Sharp scars
- 1624 Depth below sea surface to seabed, contoured at 1m intervals.
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

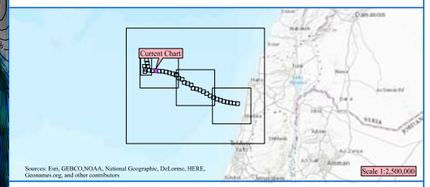
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code: 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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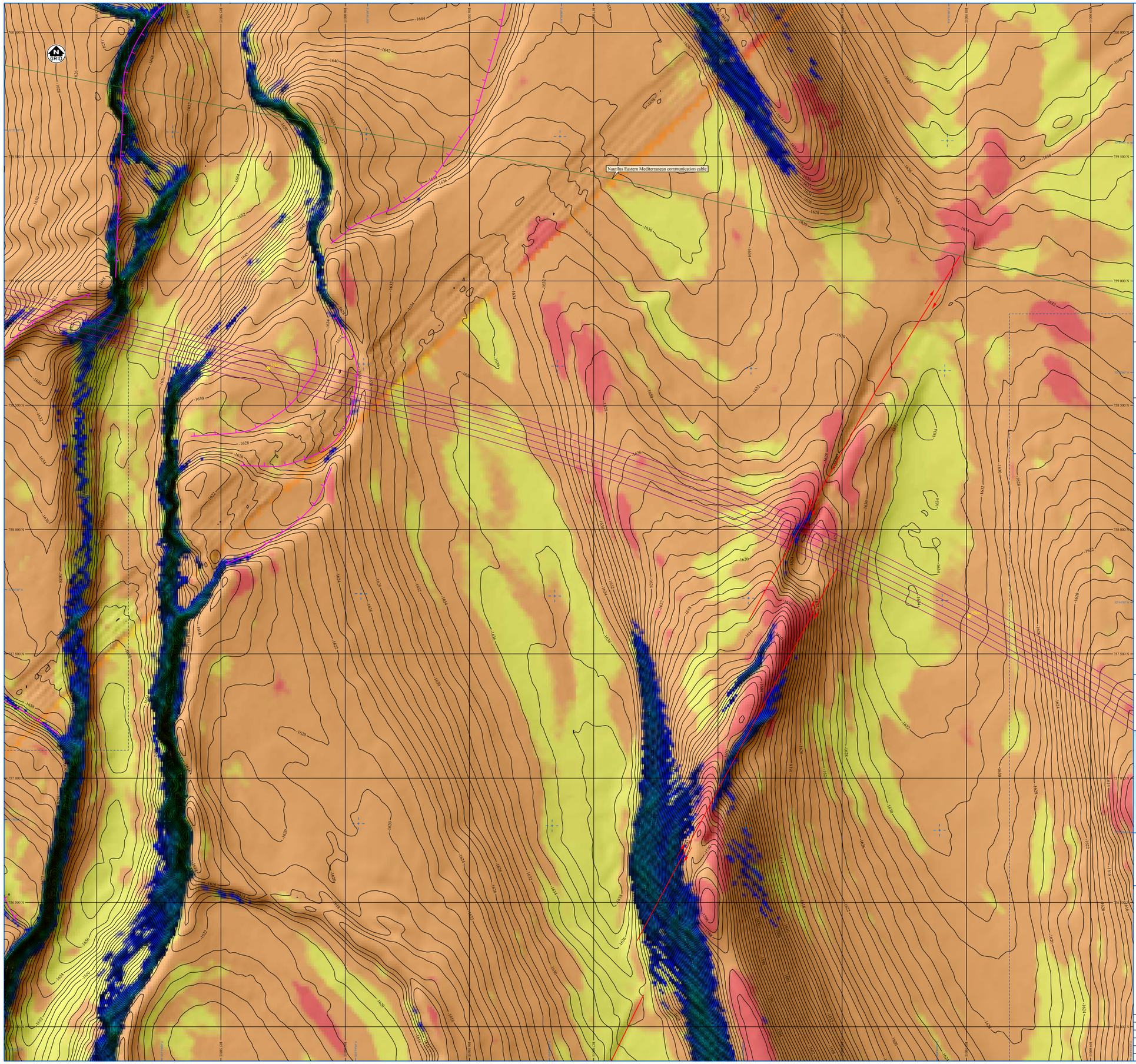
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 9

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE:	N/A	REPORT REF	10773	REF NO	10773.13



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Subsea communications cable
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- Sharp scars
- 1624 Depth below sea surface to seabed, contoured at 1m intervals.
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

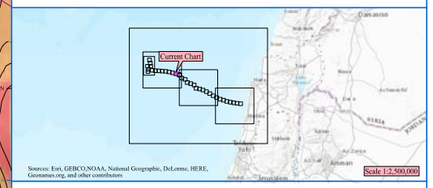
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.2045169444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.7343936111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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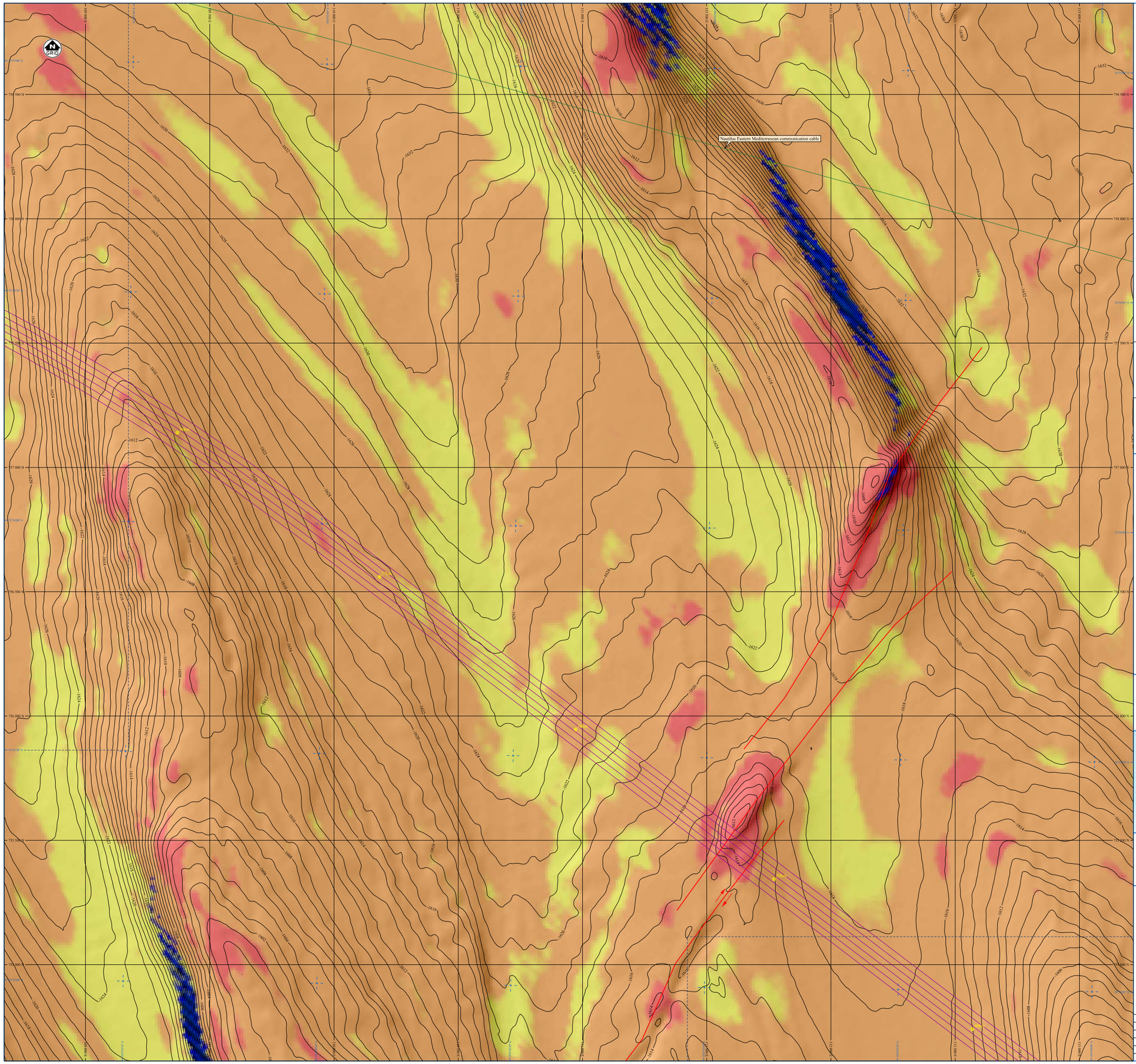
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 14

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.18



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Subsea communications cable
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- 1624 Depth below sea surface to seabed, contoured at 1m intervals .
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

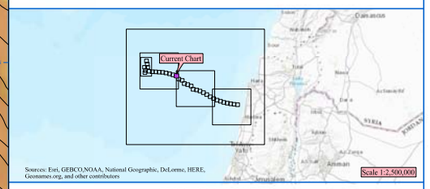
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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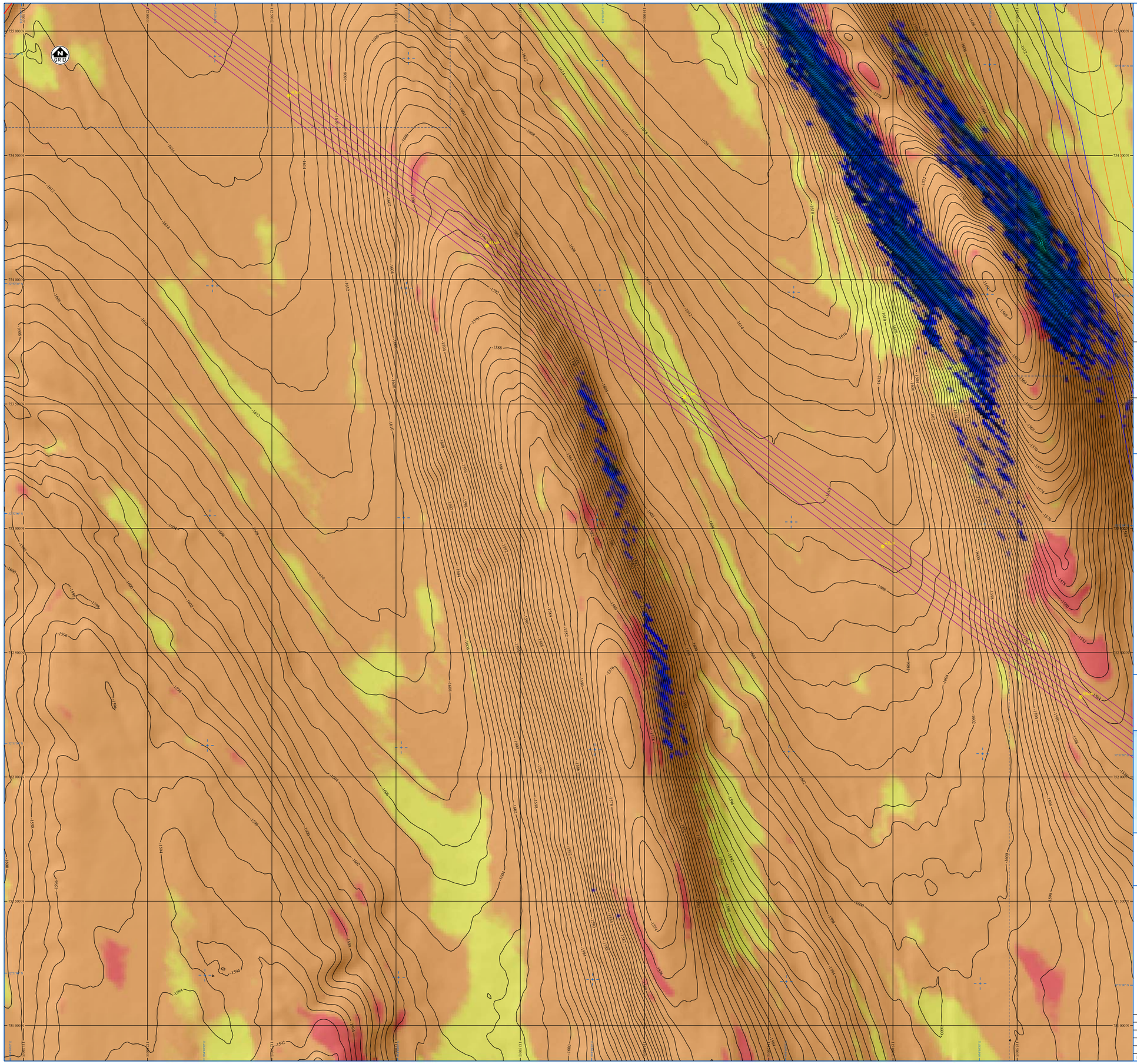
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 15

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.19



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Tamar existing flowlines
- Tamar existing umbilicals
- Matchlines 1:5,000
- 1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

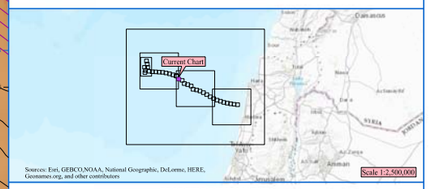
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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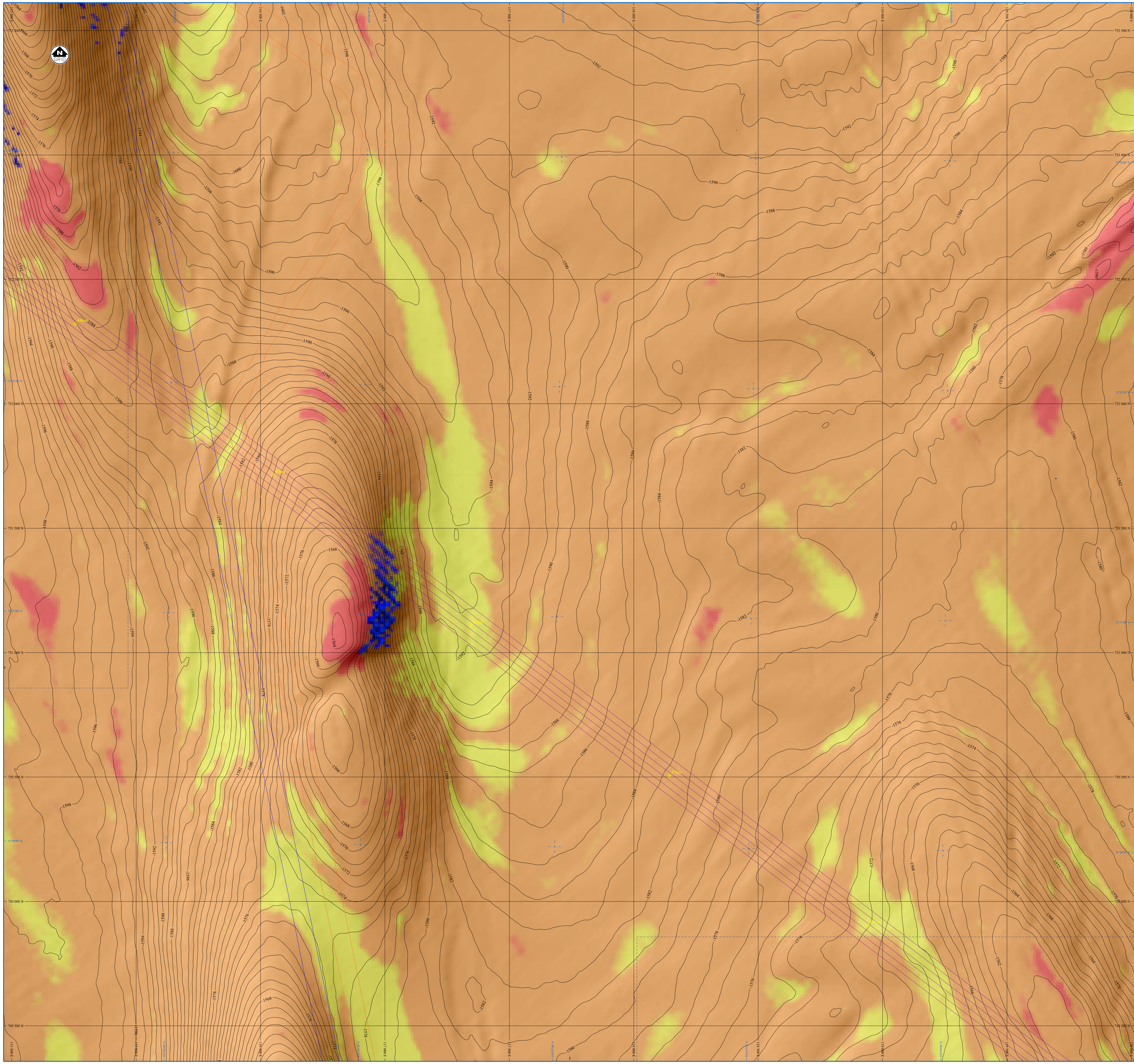
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 16

Prepared by: Gardline Surveys, Inc. 1500 Jungle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.20



LEGEND

Symbol	Description
	Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
	KP points
	Tamar existing flowlines
	Tamar existing umbilicals
	Matchlines 1:5,000
-1624	Depth below sea surface to seabed, contoured at 1m intervals
	Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
	Normally consolidated clays and silts
	Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

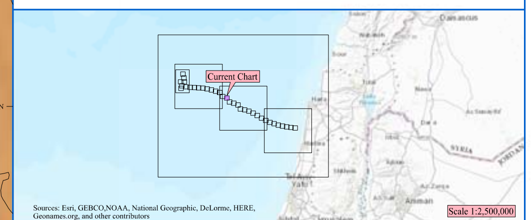
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

Gardline

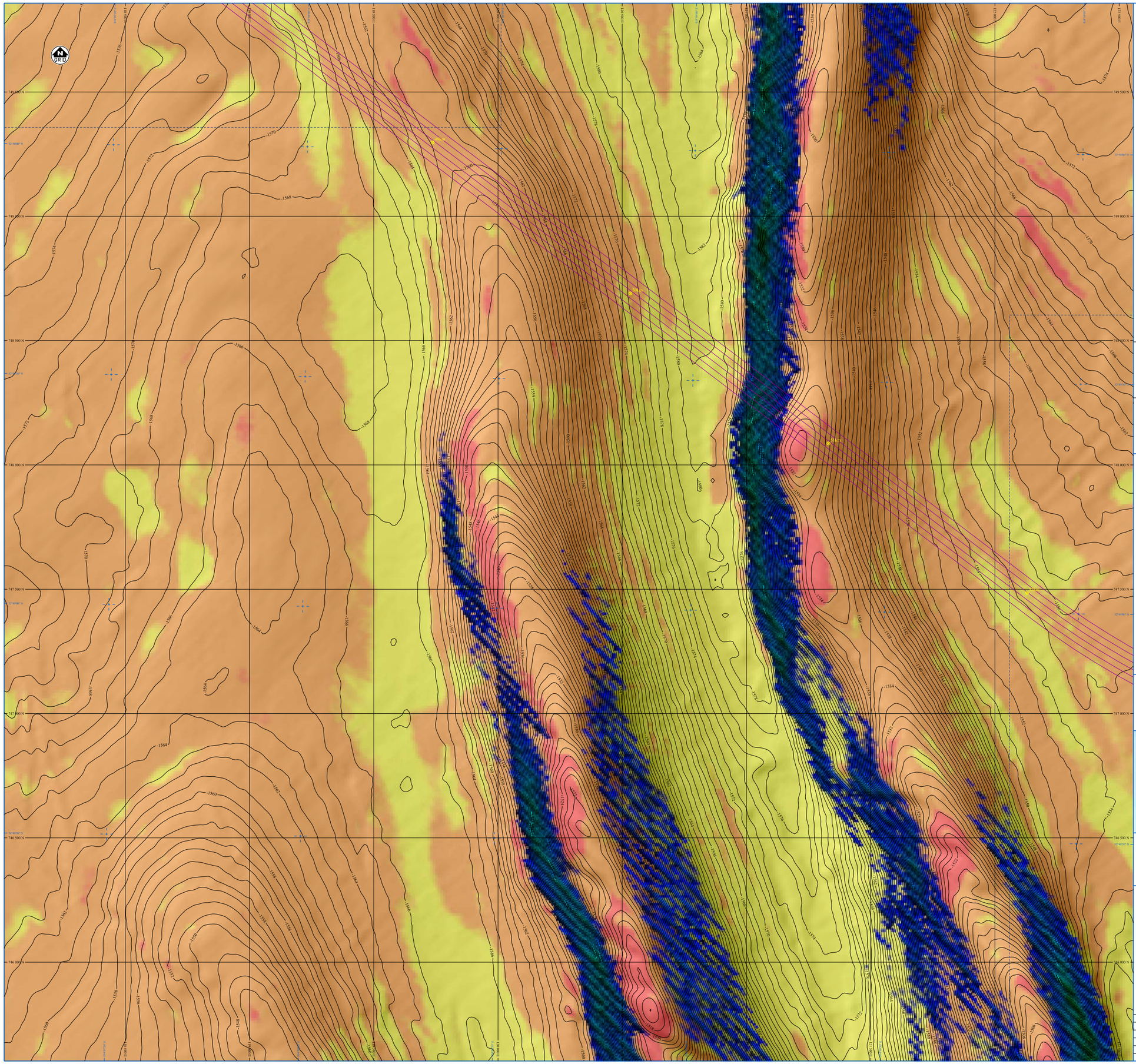
noble energy

GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 17

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.21



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Matchlines 1:5,000
- 1624 — Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

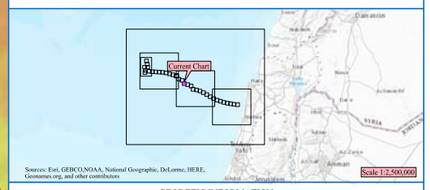
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code: 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.3141403356
Inverse Flattening: 298.257222101

Gardline

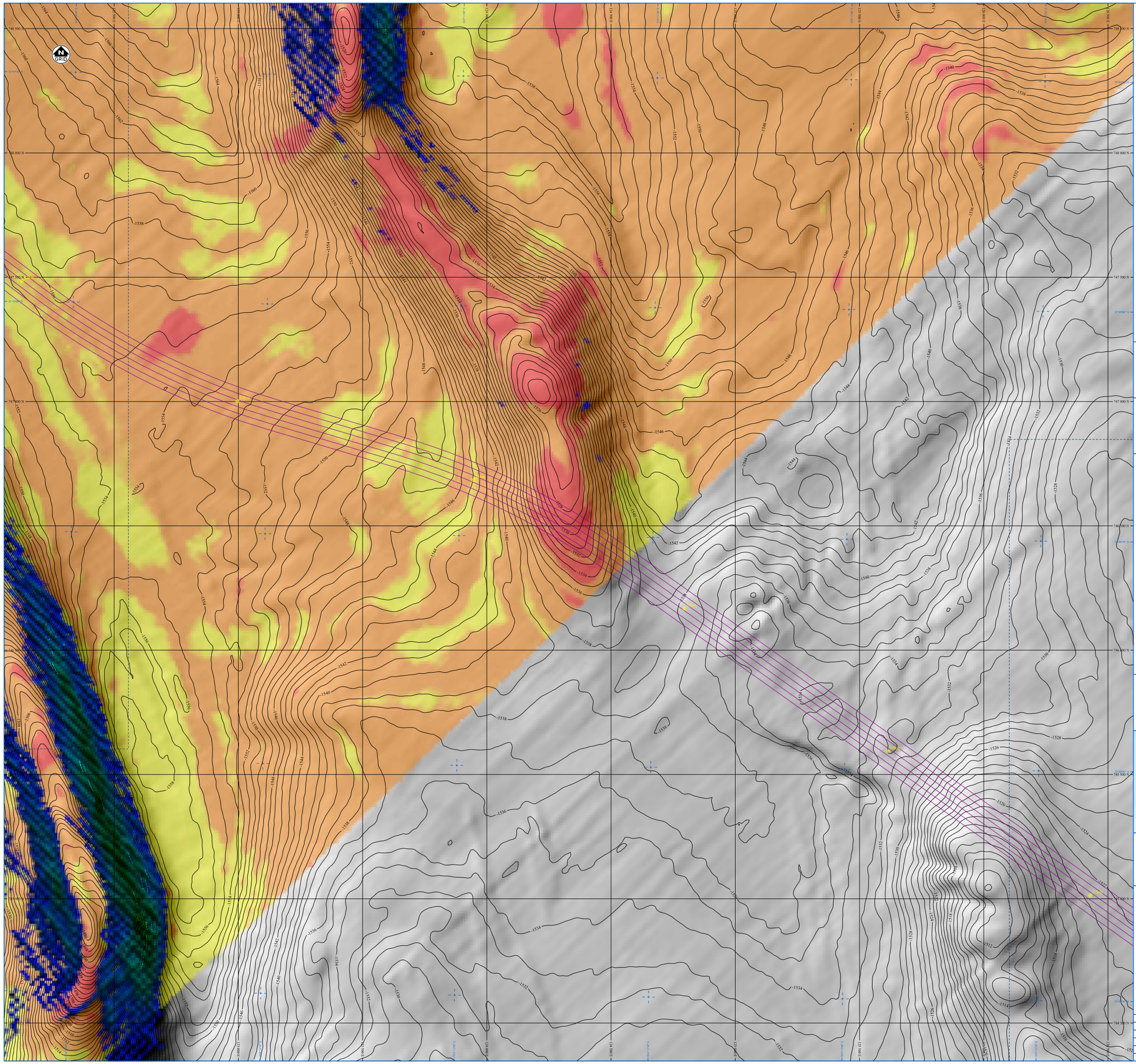
noble energy

GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 18

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.22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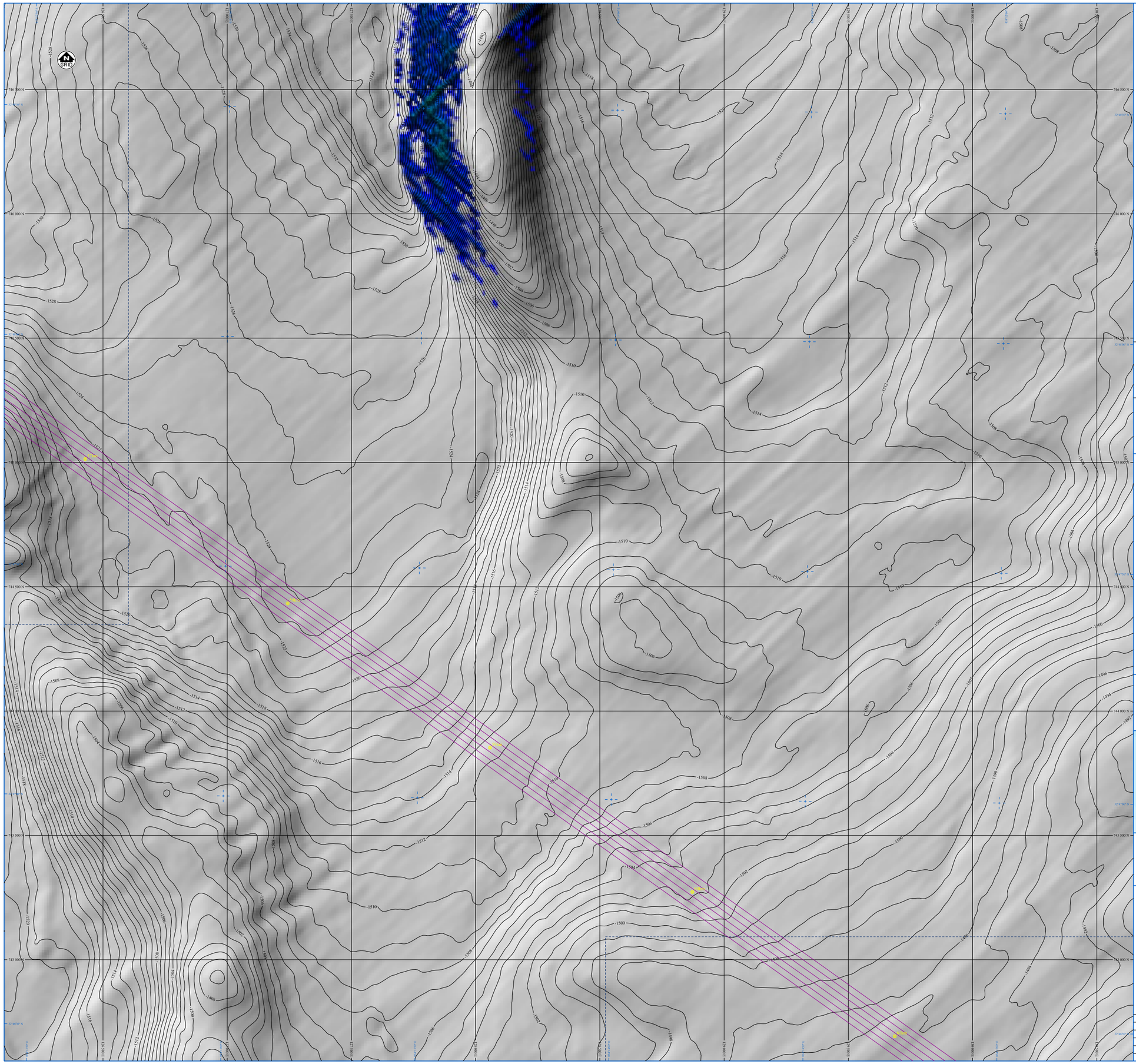
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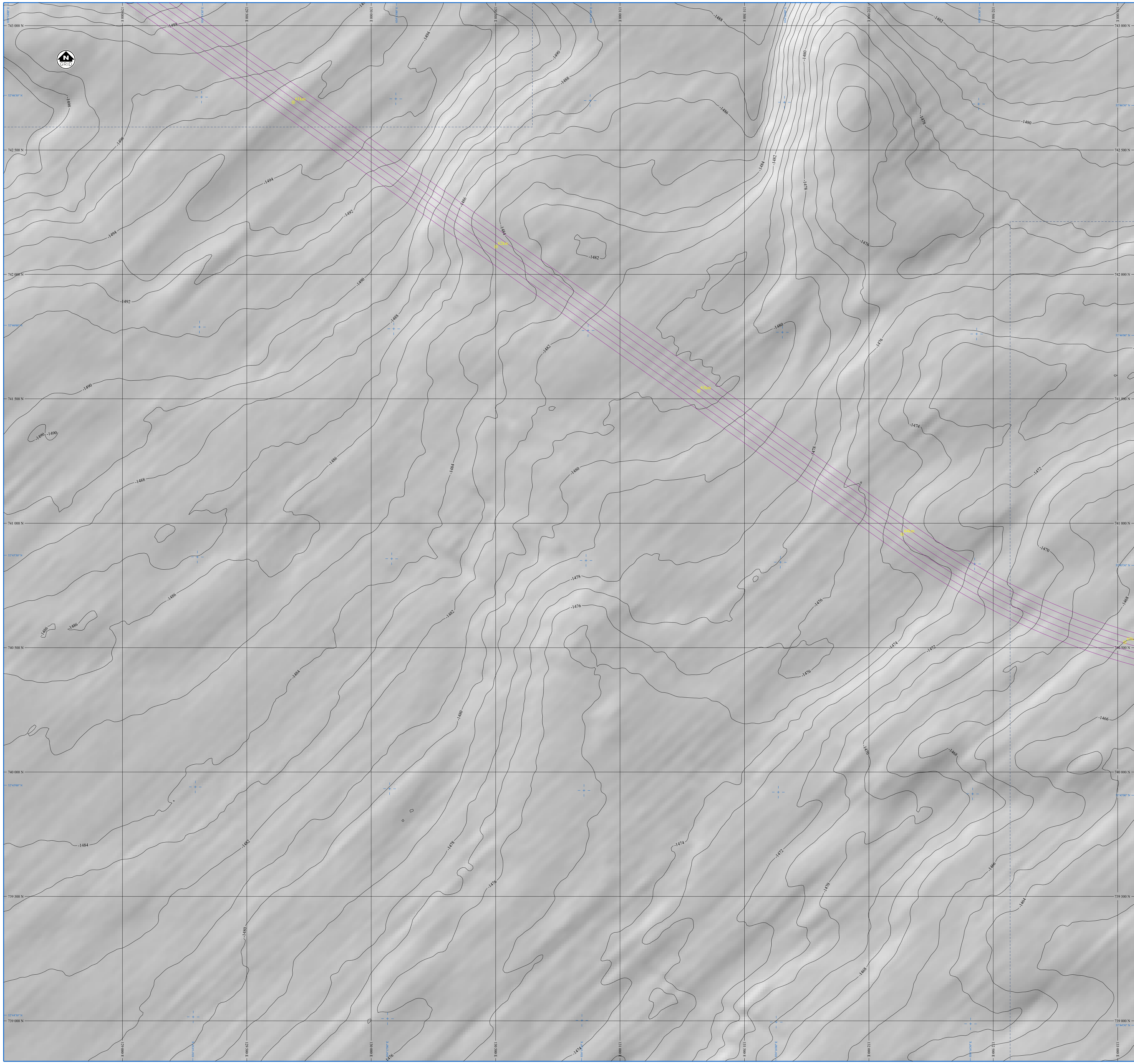


LEGEND

Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines

KP points

Matchlines 1:5,000

-1624 Depth below sea surface to seabed, contoured at 1m intervals

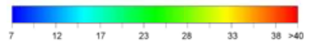
Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)

Normally consolidated clays and silts

Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

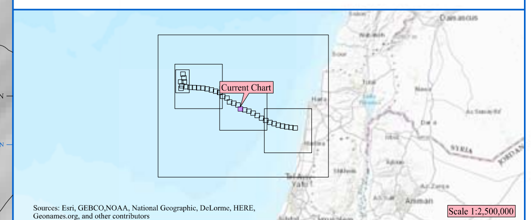


Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

Gardline

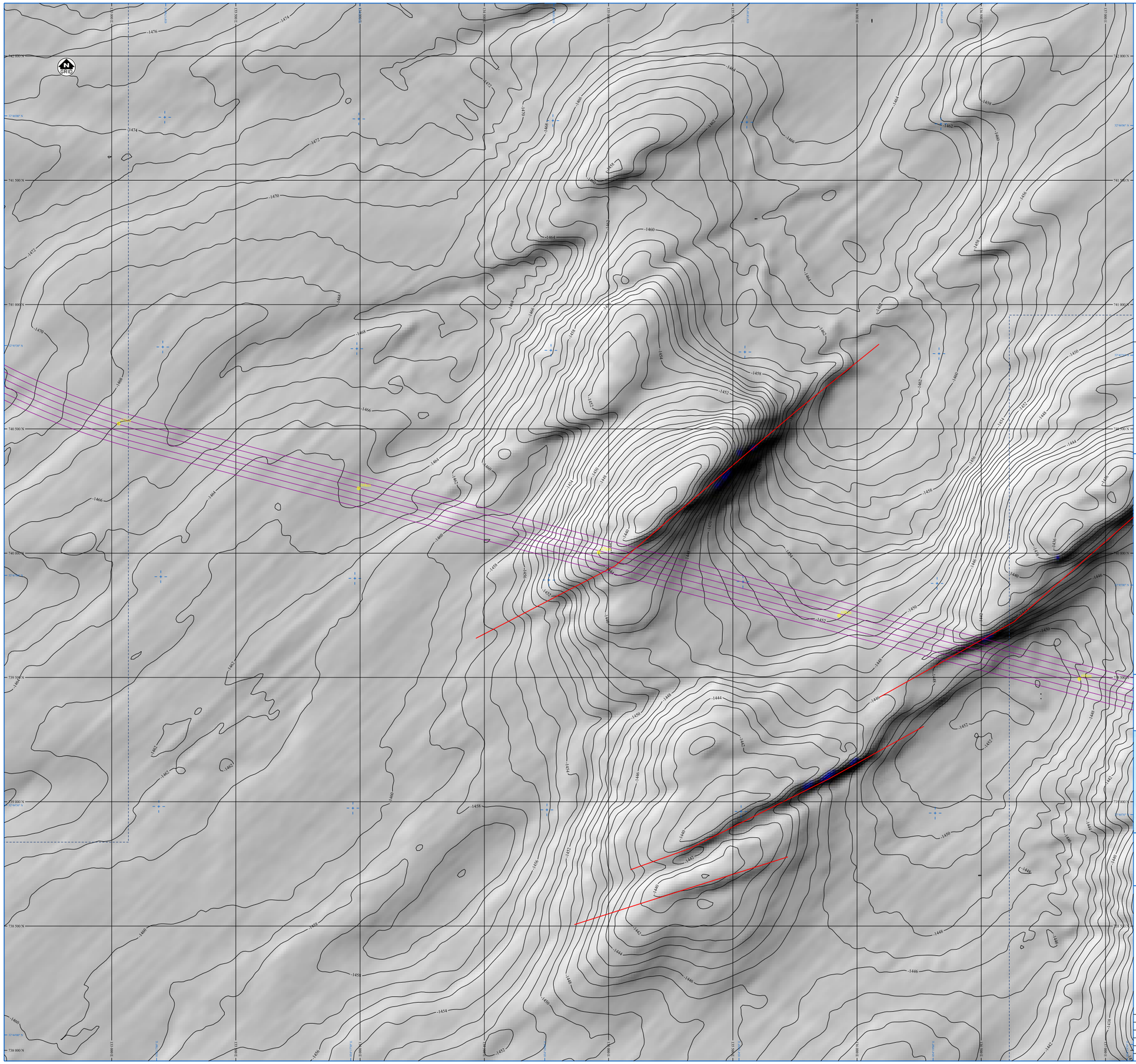
noble energy

GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 21

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.25



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Matchlines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- 1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

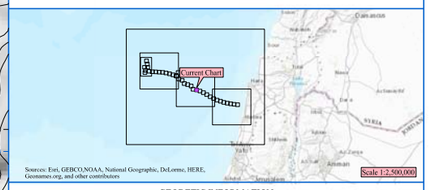
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed, either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

Gardline

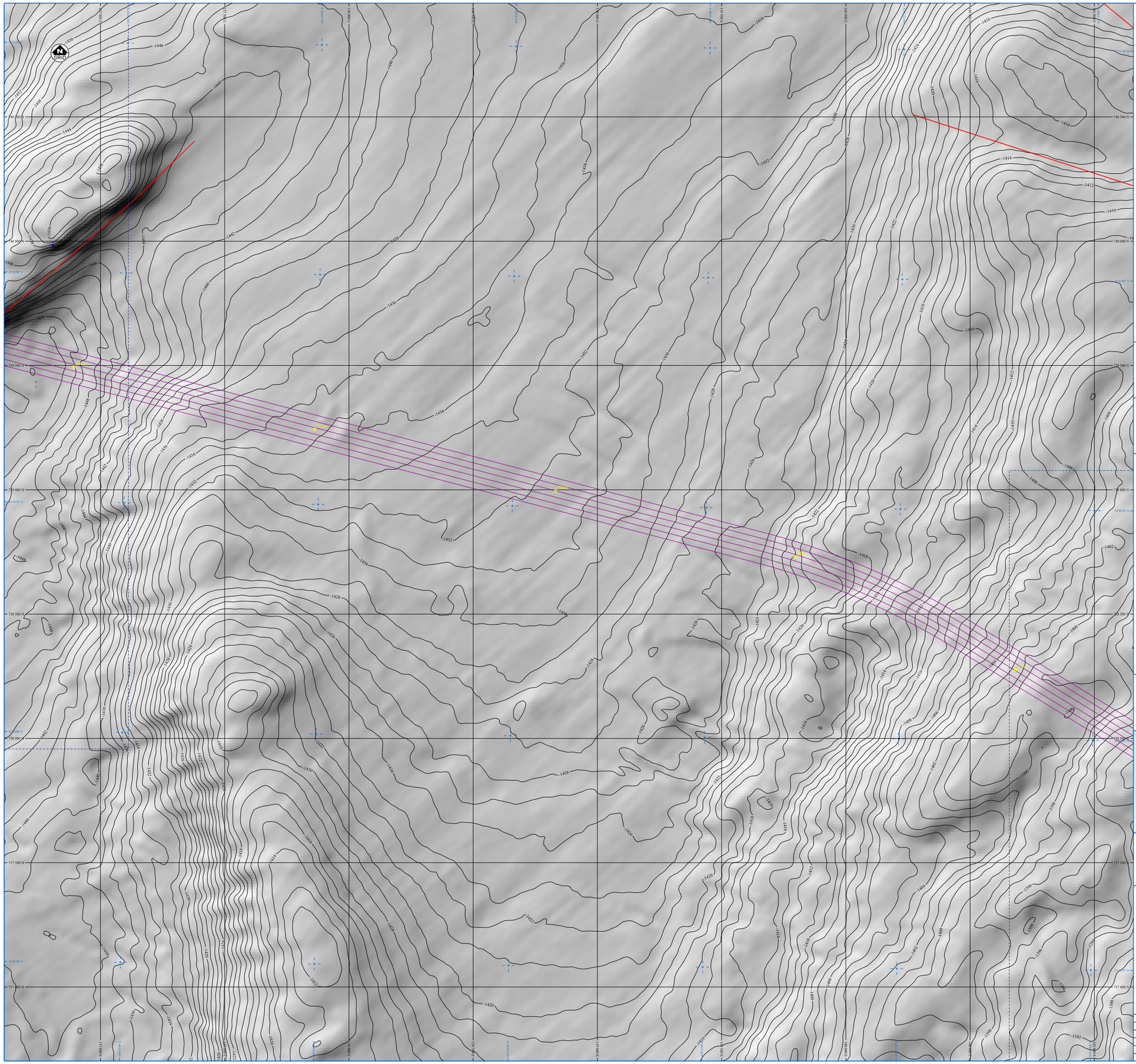
noble energy

GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 22

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.26



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Machines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- 1624 — Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

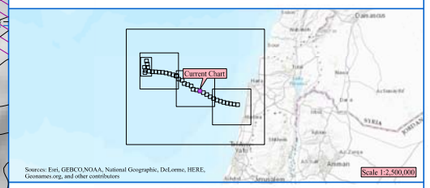
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.017453292519943)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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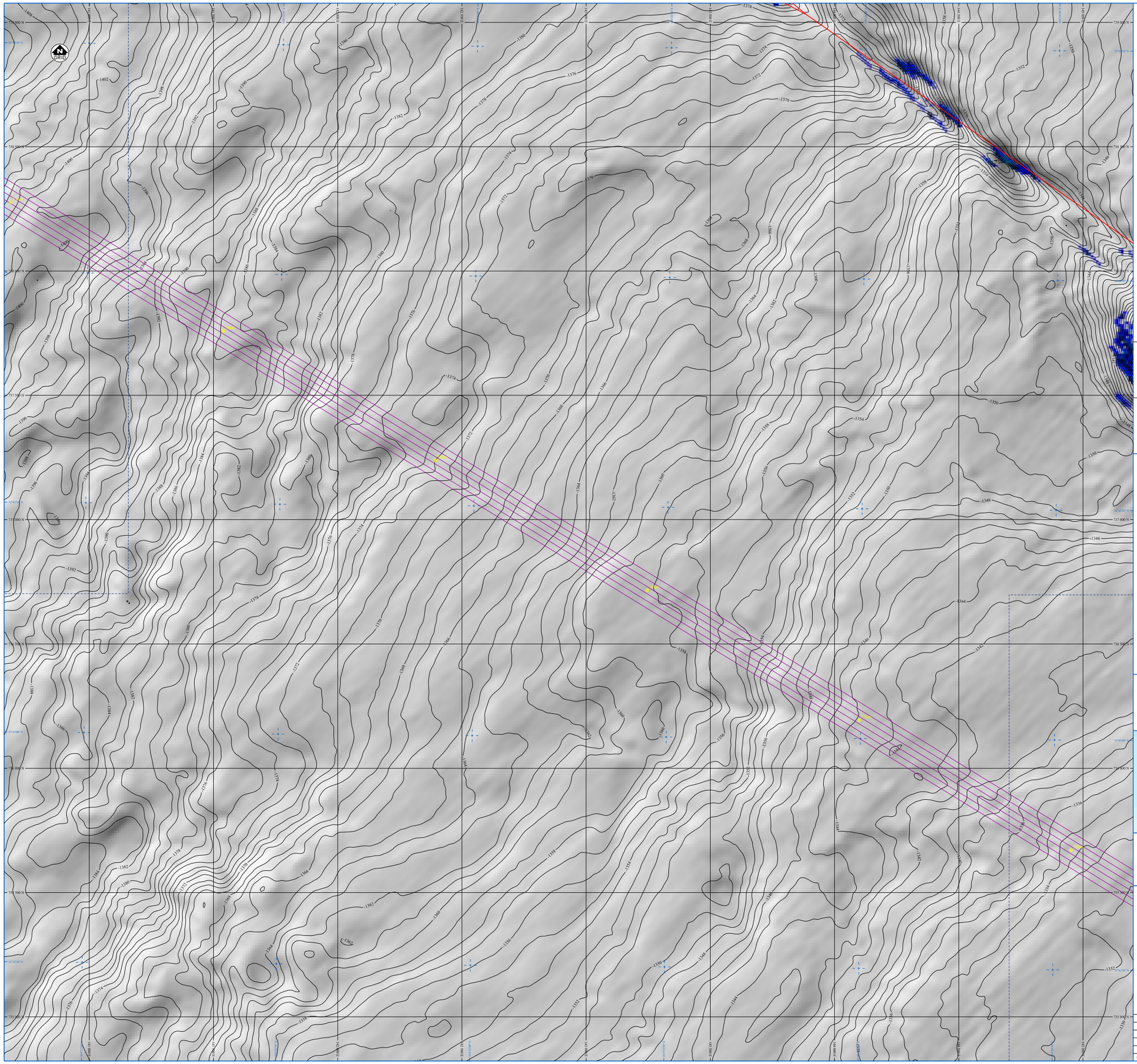
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 23

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.461.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.27



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Machines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- 1624 — Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

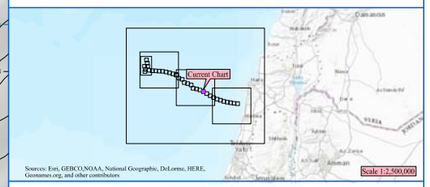
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925799433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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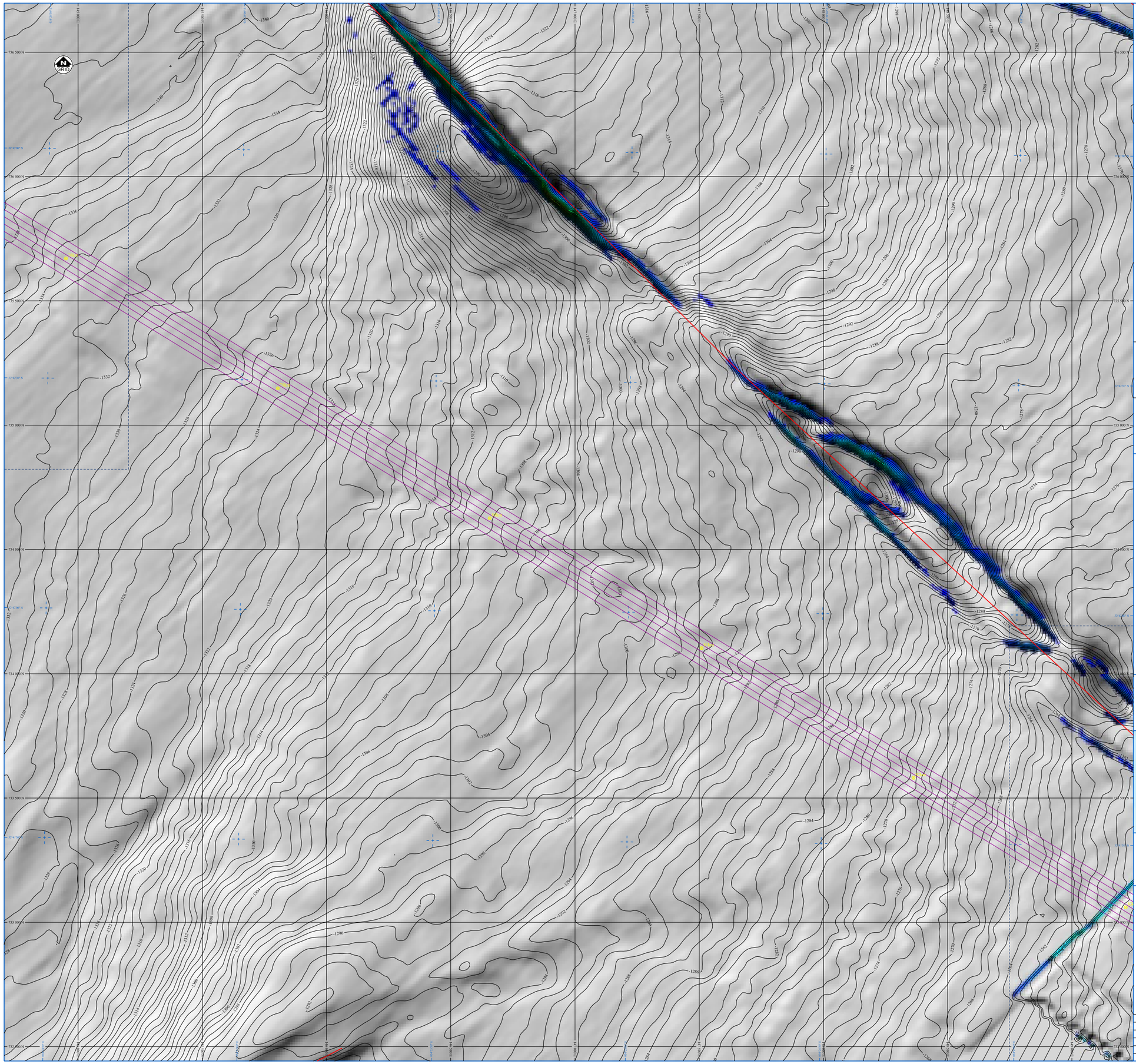
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 24

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.29



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Machines 1:5,000
- Strike Slip Faults, with direction of movement where apparent
- 1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illaminated from northwest at 45° above horizontal

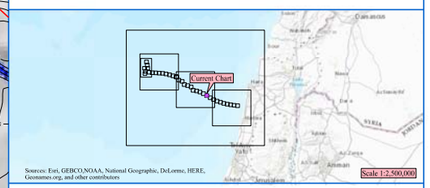
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKIFF: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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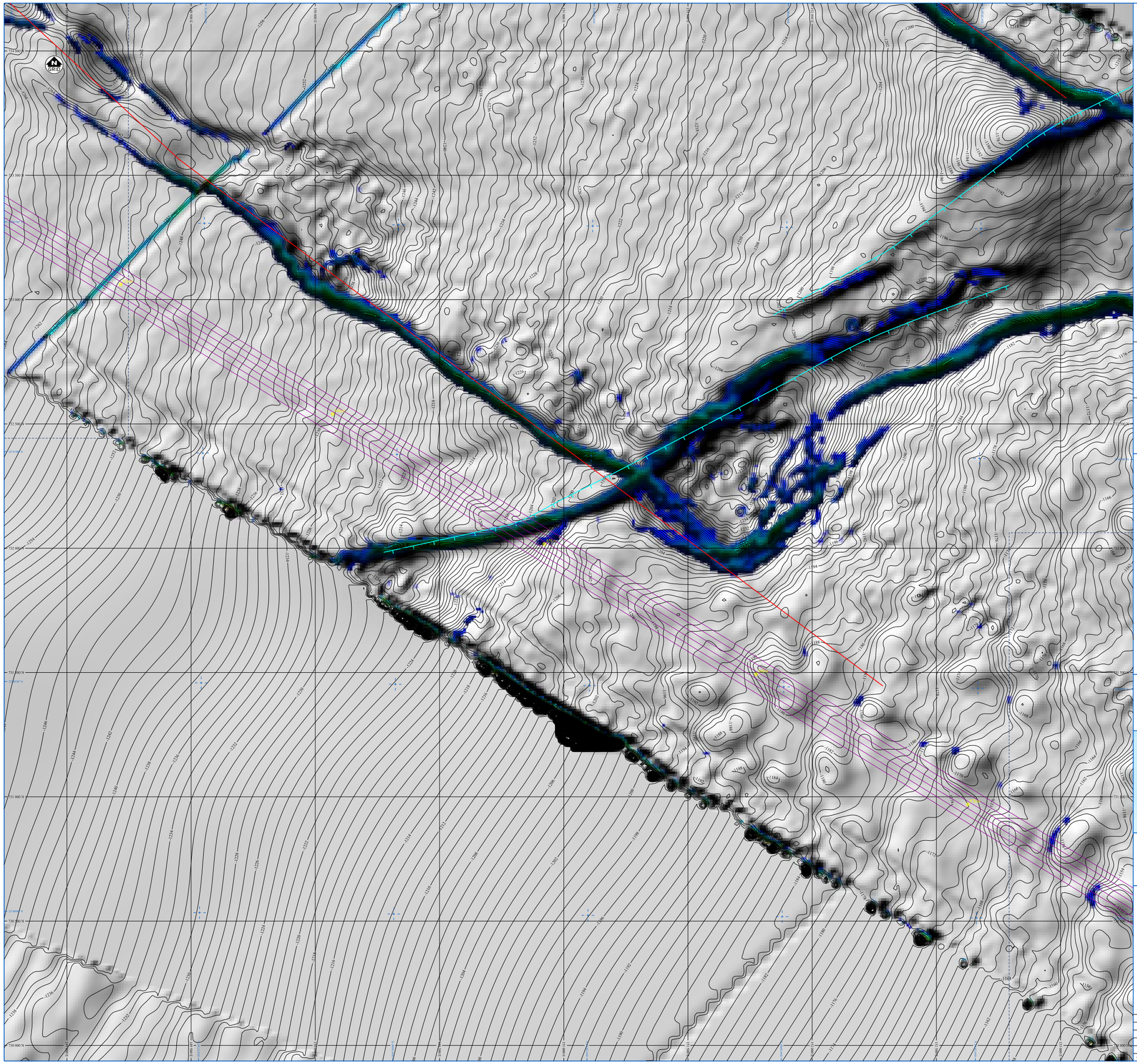
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 25

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2ND DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE:	N/A	REPORT REF	10773	REF NO	10773.29



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Machines 1:5,000
- Strike Slip Faults, with direction of movement where appatent
- Normal faults, ticks denotes downthrown side
- Depth below sea surface to seabed, contoured at 1m intervals.
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illaminated from northwest at 45° above horizontal

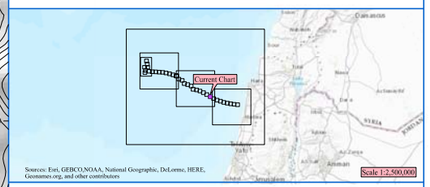
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKIF: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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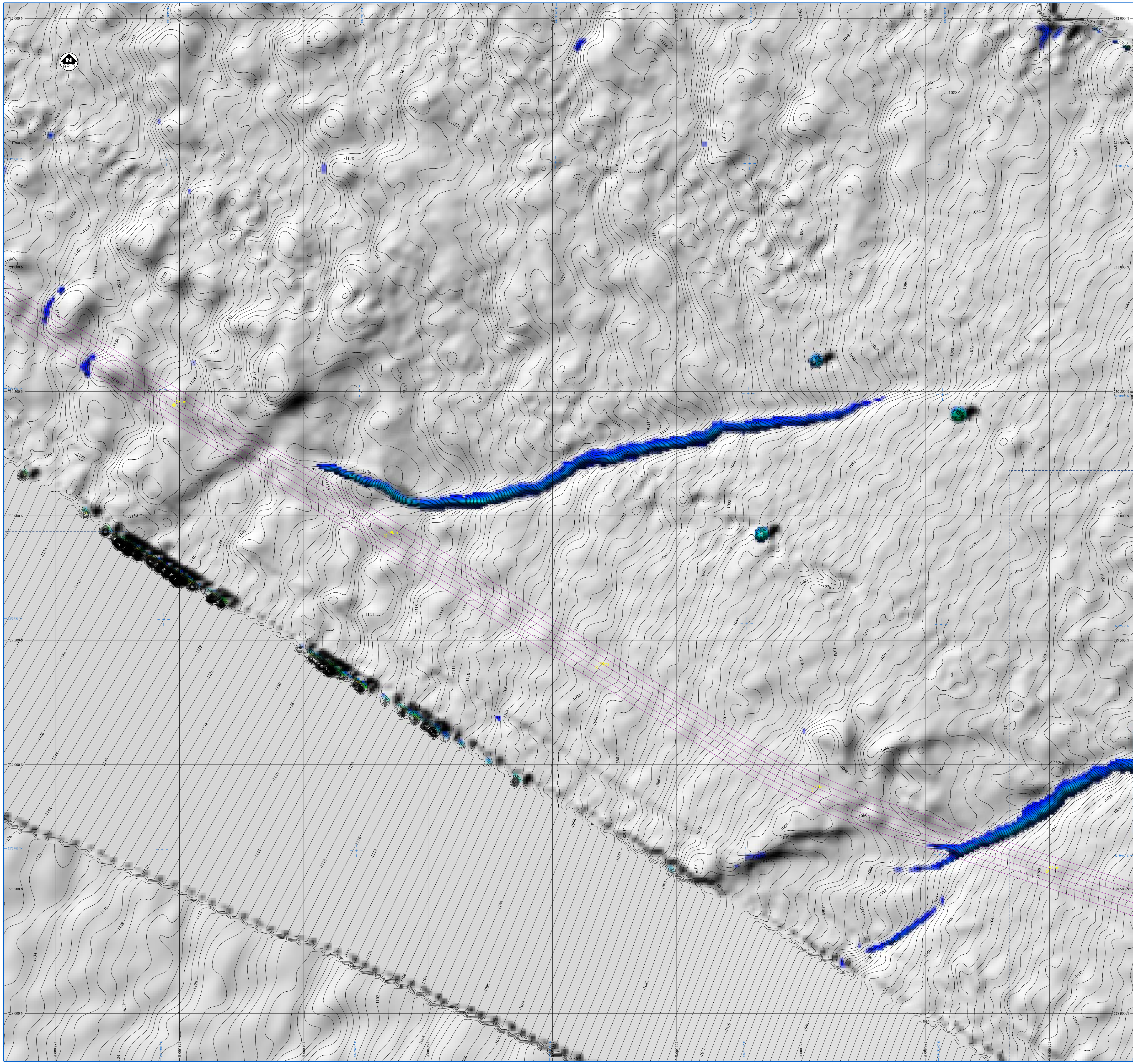
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 26

Prepared by: Gardline Surveys, Inc. 1500 Dingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2ND DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE:	N/A	REPORT REF	10773	REF NO	10773.30



LEGEND

Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines

KP points

Matchlines 1:5,000

-1624 Depth below sea surface to seabed, contoured at 1m intervals

Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)

Normally consolidated clays and silts

Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

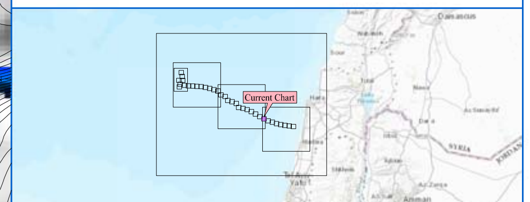
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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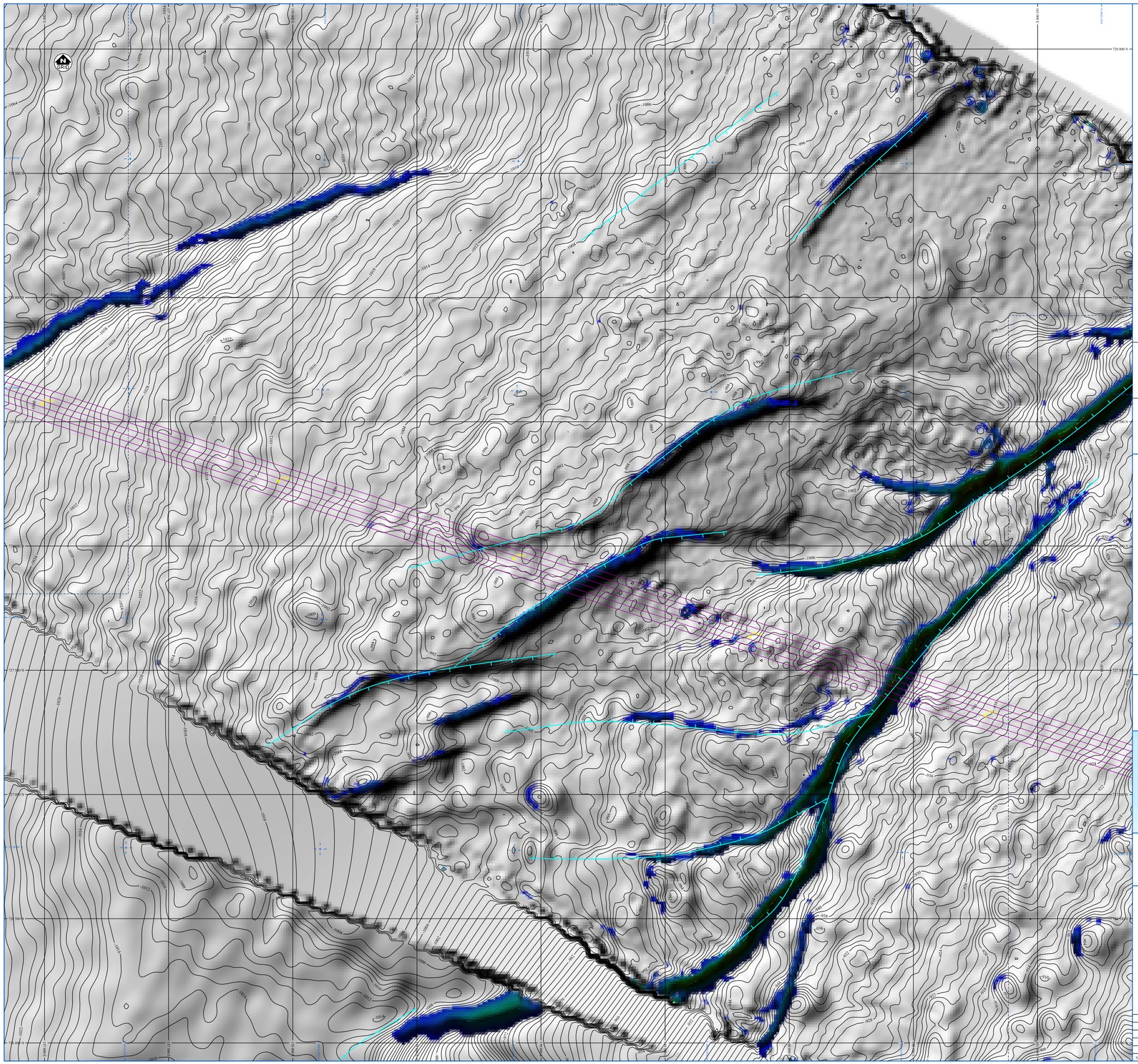
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 27

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.31



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Matchline: 1:5,000
- Normal faults, ticks denotes downthrown side
- 1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

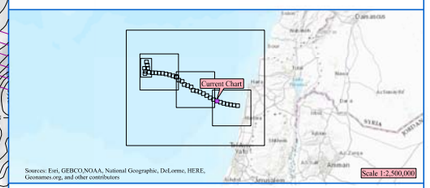
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.2045169444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.7343936111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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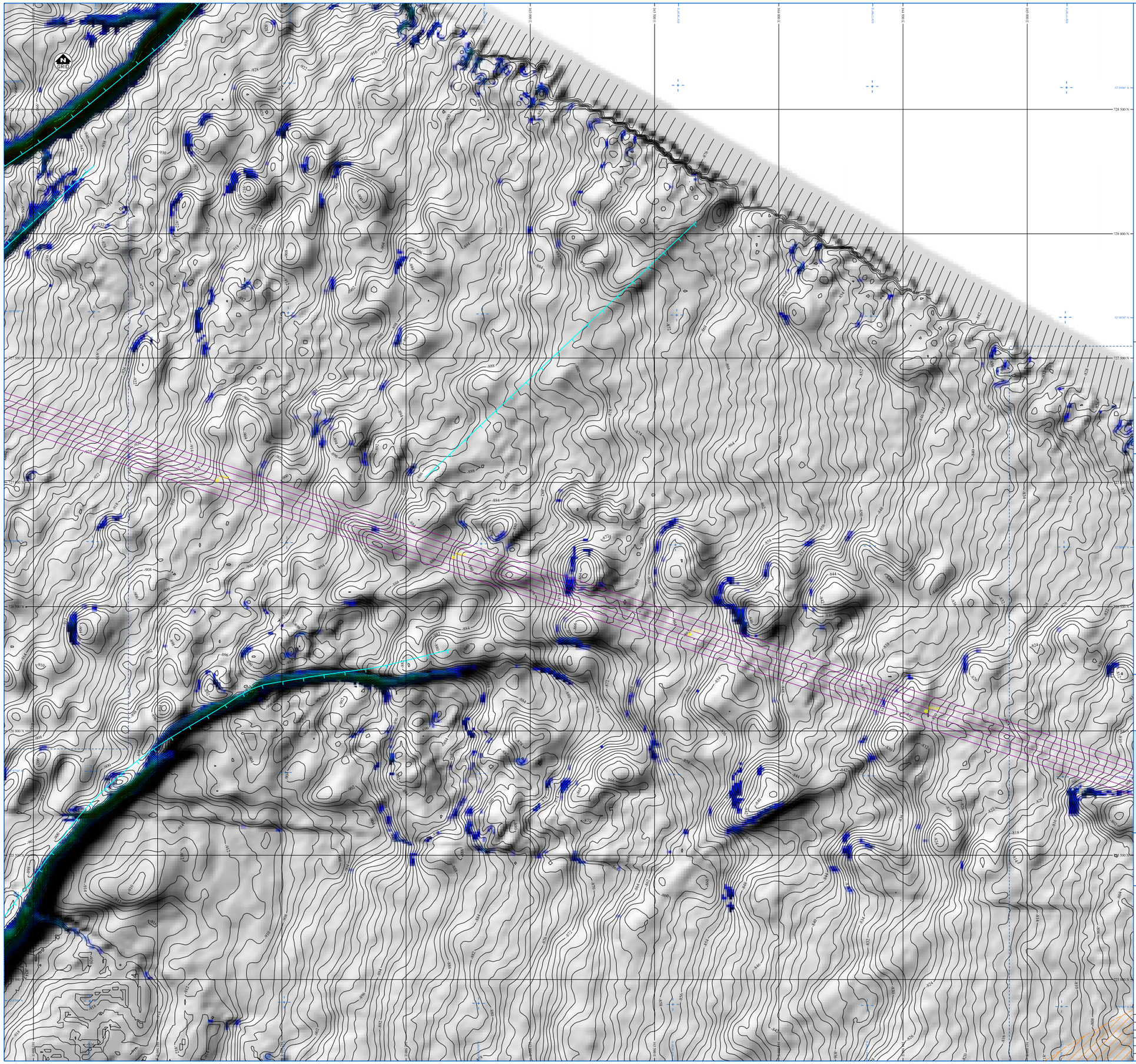
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 28

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2ND DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.32



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Manchinee 1:5,000
- Normal faults, ticks denotes downthrown side
- Regional landslide pathway; debris deposits and several smaller scale normal faults
- 1624 Depth below sea surface to seabed, contoured at 1m intervals.
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

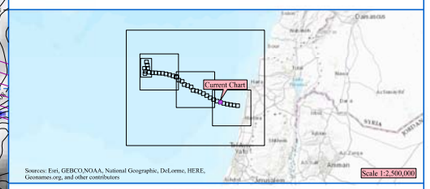
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code: 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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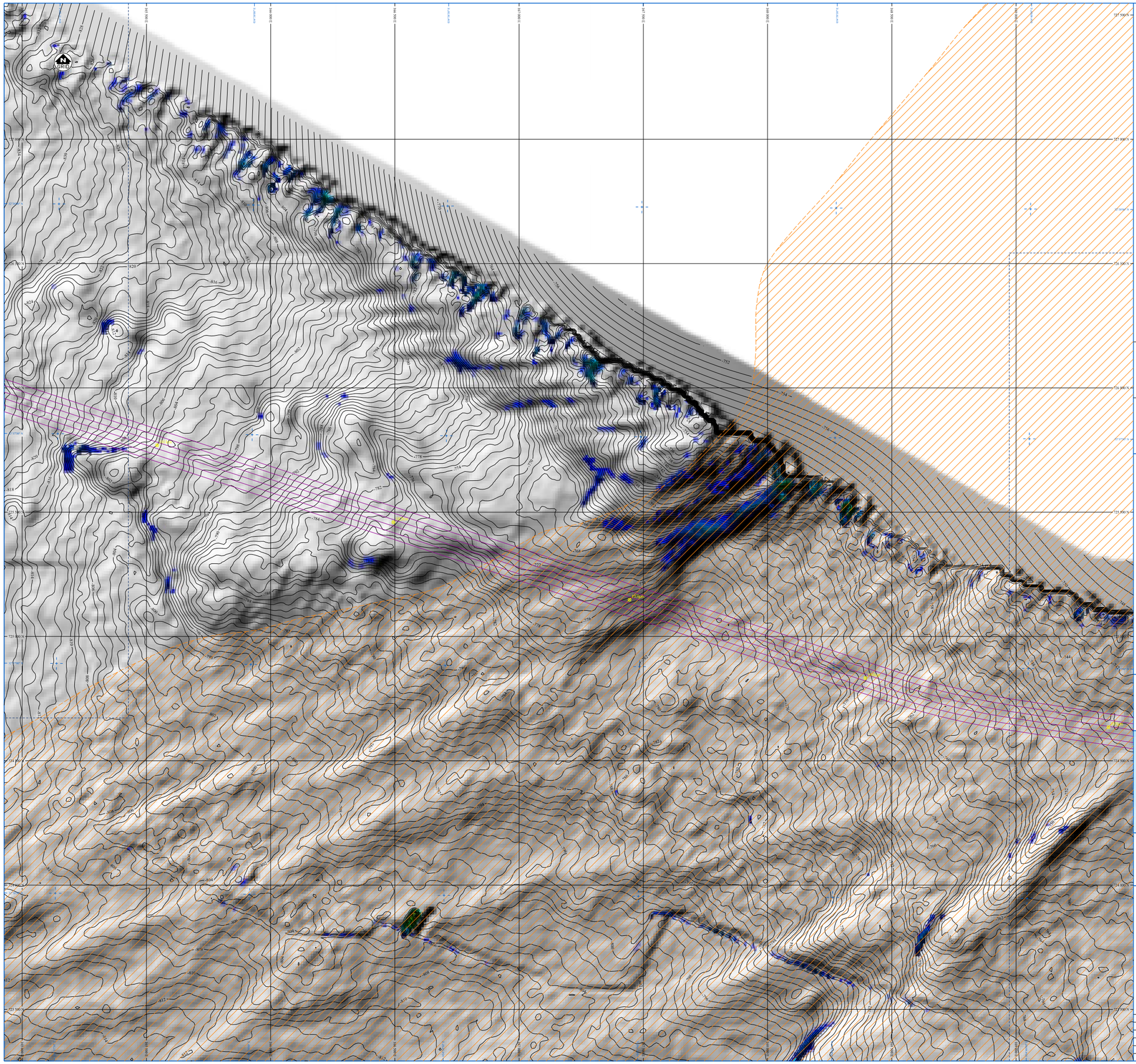
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 29

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE:	N/A	REPORT REF	10773	REF NO	10773.33



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Machinos 1:5,000
- Regional landslide pathway, debris deposits and several smaller scale normal faults
- -1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

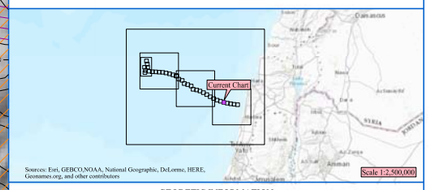
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code: 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.3141403356
Inverse Flattening: 298.257222101

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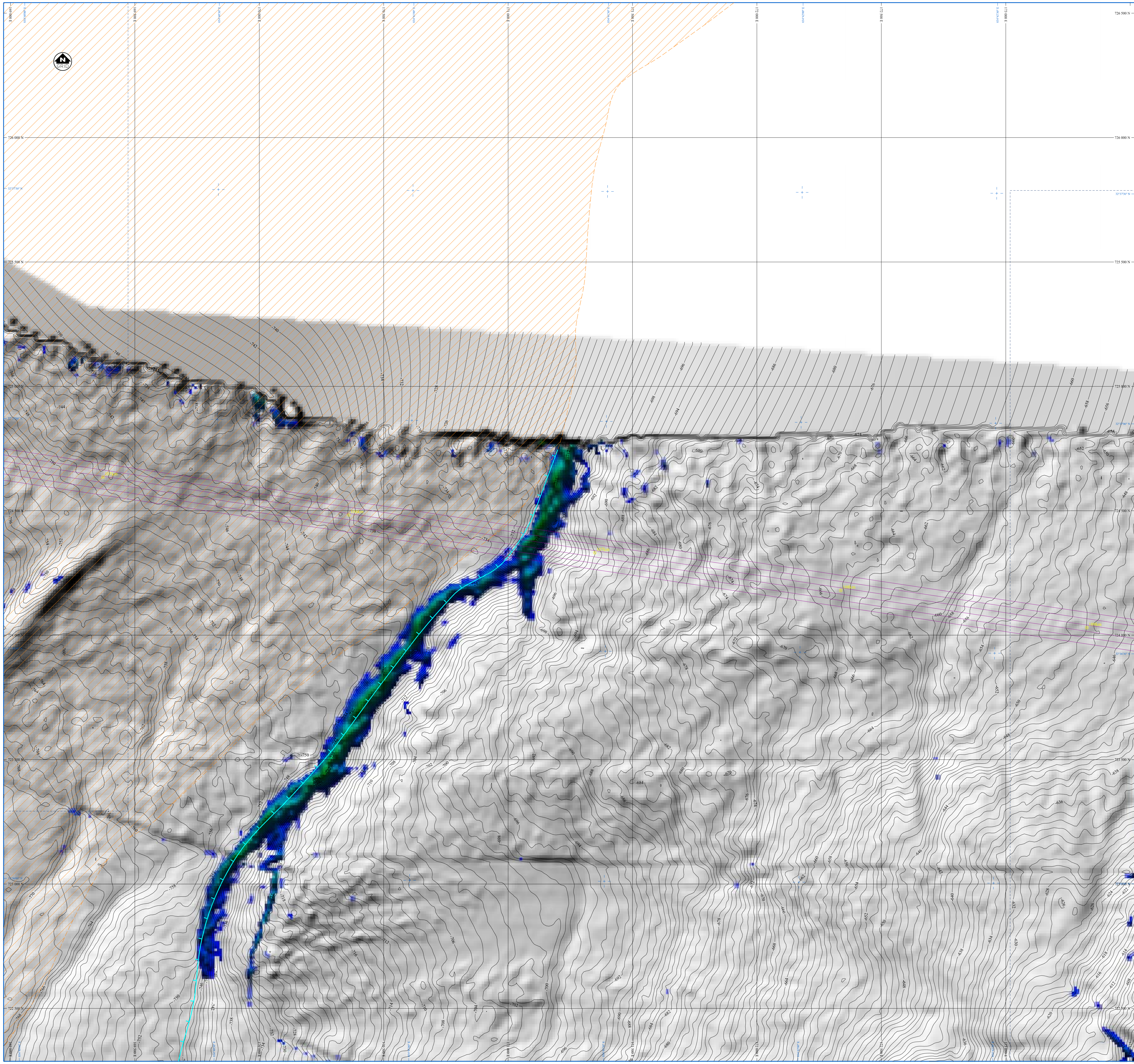
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 30

Prepared by: Gardline Surveys, Inc. 1500 Jungle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2ND DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.34



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Matchlines 1:5,000
- Normal faults, ticks denotes downthrown side
- Regional landslide pathway, debris deposits and several smaller scale normal faults
- -1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

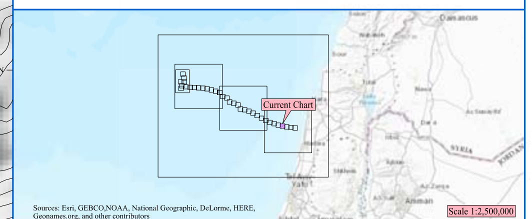
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



Sources: Esri, GEBCO,NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.20451694444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.73439361111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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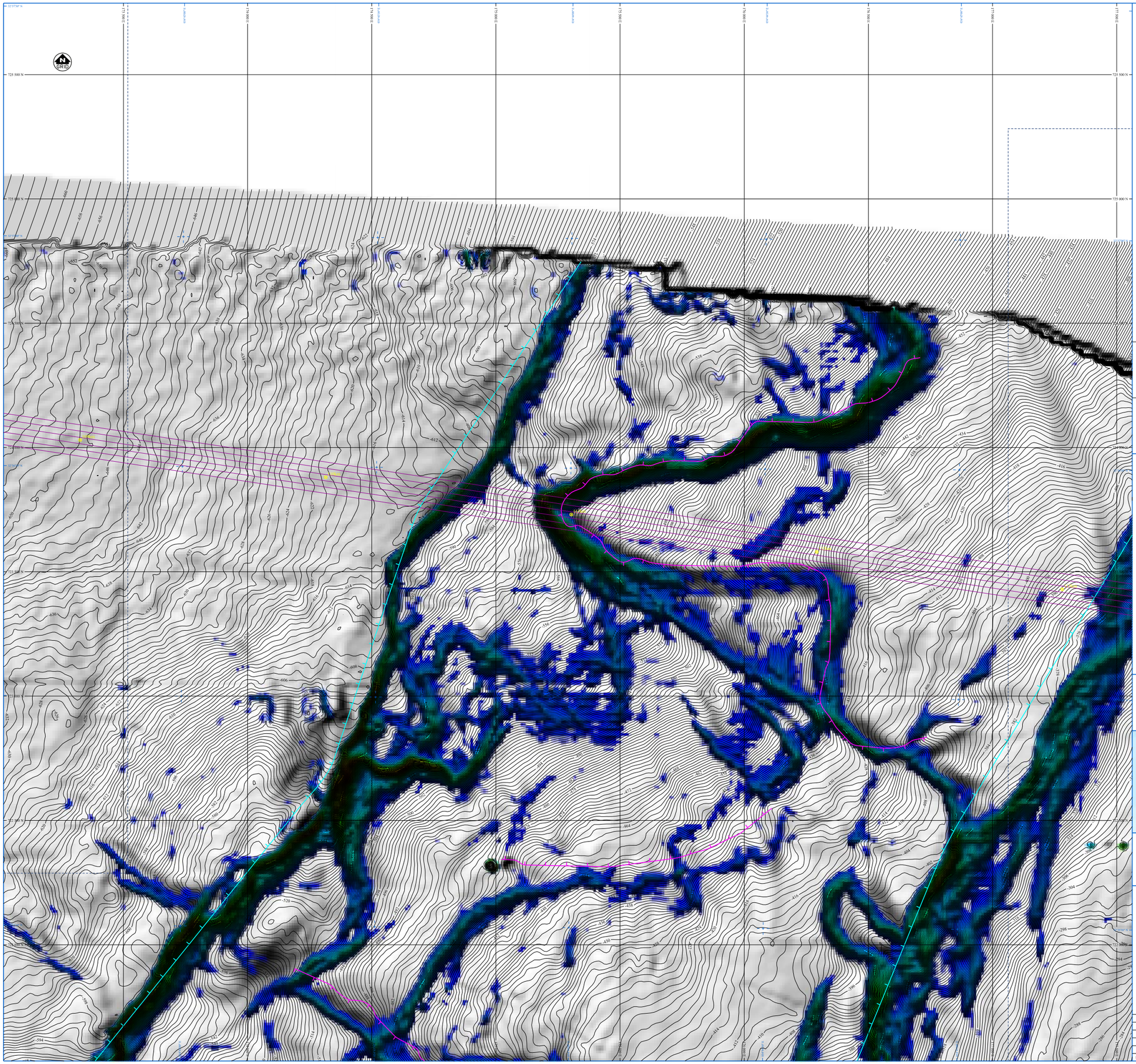
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 31

Prepared by: Gardline Surveys, Inc. 1500 Bingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.35



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Manchinee 1:5,000
- Sharp scars
- Normal faults, ticks denotes downthrown side
- -1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

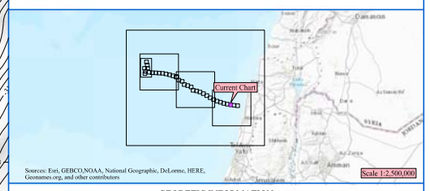
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code: 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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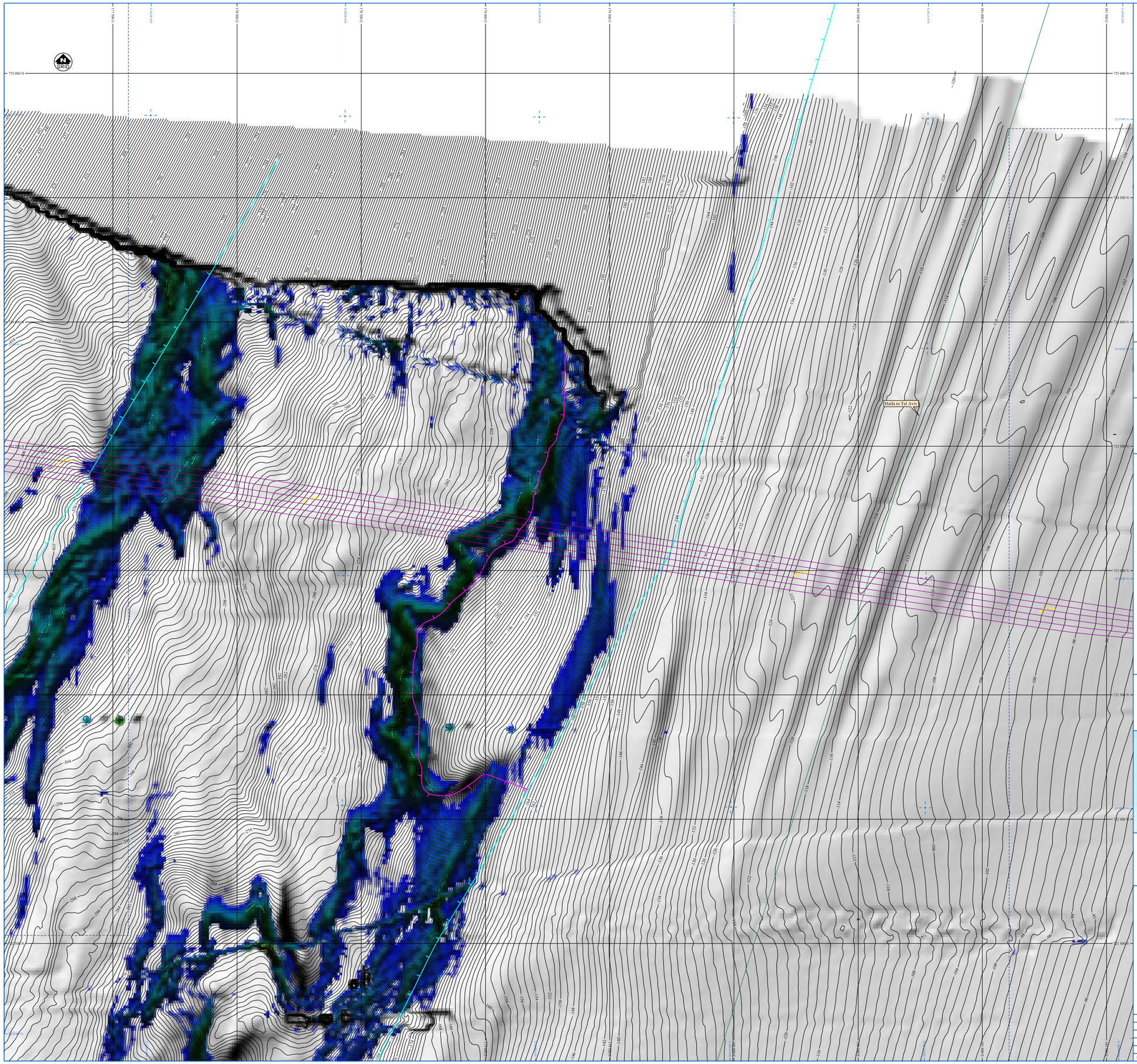
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 32

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.36



LEGEND

- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Subsea communications cable
- Matchlines 1:5,000
- Slump scars
- Normal faults, ticks denotes downthrown side
- -1624 Depth below sea surface to seabed, contoured at 1m intervals
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

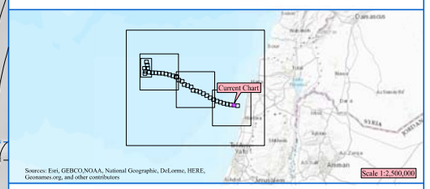
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKIFF: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.204516944444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.734393611111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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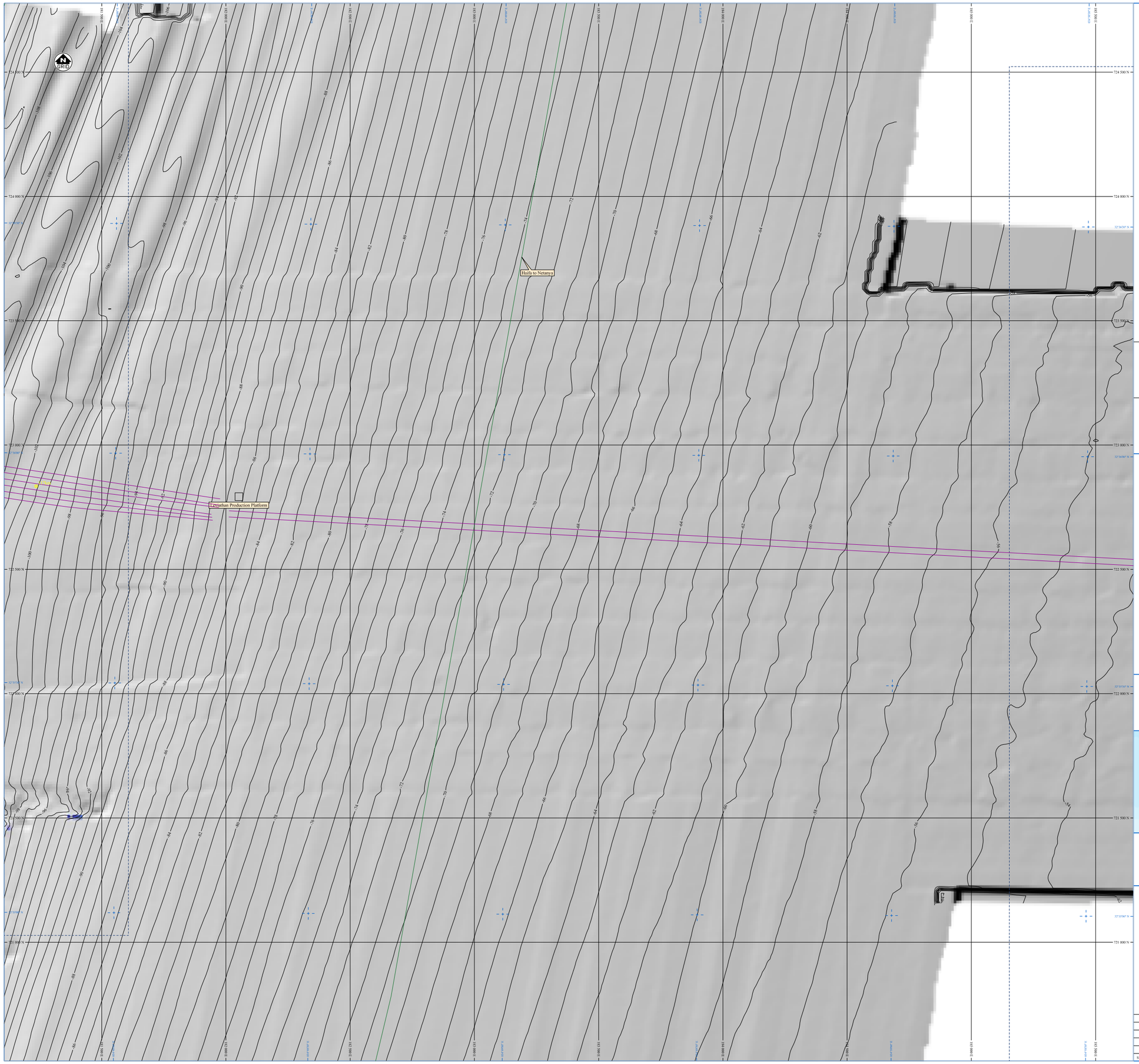
GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 33

Prepared by: Gardline Surveys, Inc. 1500 Hingle Road, Houston, Texas, 77055. Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE:	N/A	REPORT REF	10173	REF NO	10173.37



LEGEND

- Leviathan Production Platform (182,052m E / 722,792m N)
- Proposed Leviathan Field to Leviathan Production Platform flowlines, umbilicals and pipelines
- KP points
- Subsea communications cable
- Matchlines 1:5,000
- 162d — Depth below sea surface to seabed, contoured at 1m intervals .
- Under consolidated (soft) mostly clays with some silts (primarily bathymetric lows)
- Normally consolidated clays and silts
- Over consolidated (firm) mostly silts with some clays (primarily bathymetric highs)

NOTES

Data sourced from a combination of existing 3D seismic, AUV multibeam and surface multibeam echo sounder
Illuminated from northwest at 45° above horizontal

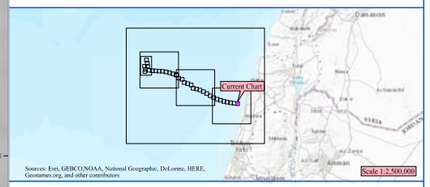
7 12 17 23 28 33 38 >40

Seabed slope in degrees from horizontal, illustrating slopes over 7°.
Also represents regions where firmer sediments maybe exposed at seabed,
either through seabed channel erosion or elimination of fines on bathymetric highs

CHART SCALE 1:5,000

0 375 750 1,500 2,250 Feet

0 125 250 500 750 Meters



GEODETIC INFORMATION

Israel_TM_Grid
WKID: 2039 Authority: EPSG
EPSG Code 6141

Projection: Transverse_Mercator
False_Easting: 219529.584
False_Northing: 626907.39
Central_Meridian: 35.2045169444445
Scale_Factor: 1.0000067
Latitude_Of_Origin: 31.7343936111111
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_Israel
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_Israel
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

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GEOLOGICAL CONDITIONS
OFFSHORE ISRAEL
LEVIATHAN AREA
LEVIATHAN FIELD TO LEVIATHAN PRODUCTION PLATFORM
GEOLOGICAL SETTING

SET 2 - CHART 34

Prepared by: Gardline Surveys, Inc. 1500 Jungle Road, Houston, Texas, 77055. Telephone: 713.461.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	May 11, 2016	DRAFT	JE	KB	ARH
1	May 16, 2016	2nd DRAFT	JE	KB	ARH
2	July 19, 2016	FINAL	JE	KB/JPS	ARH
SURVEY DATE	N/A	REPORT REF	10773	REF NO	10773.38