

Fraternité

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| Th | e reports has been approved with comments. Please note that the | | | | |
| co | mments presented in the next page remain open and require your | | | | |
| att | ention. | | | | |

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| 4.1.3 | Could you please present a SBP profile to illustrate the quality of the data? | 16.09.2024 | Open |
|----------------------|---|------------|------|
| 4.5 | "A total of 12 CPT has been acquired in Zone 2." | 10 00 0004 | |
| 4.0 | make it consistent. | 16.09.2024 | Open |
| Table 11 | The quantities are the one of the greater "Z2" area, not the one of the refined "OWFZ2", | 16 09 2024 | |
| Table II | please do not avoid confusion by mixing the name | 10.03.2024 | Open |
| Table 12 | vyhere the RGT units come from ? Please introduce them or leave this RGT for further sections of the report | 16.09.2024 | Open |
| | "As mentioned in the data source limitations in section 4.1, SBP data is of generally good | | |
| | quality. | | |
| | However, data were supplied with a phase rotation with a greater range of negative amplitudes values than positive" | 16.09.2024 | |
| | I do not see any need to repeat the statement about the data quality in this section | | |
| 6 | dedicated to the Geological Framework | | Open |
| | UHRS data You can juste propose a "soil type" in this colorm. I do not see a reason to | | |
| 6.1 | create a regional geotechnical unit which will create confusion with other units derived from | 16.09.2024 | |
| | Geotechnical data | 40.00.0004 | Open |
| Figure 8-1 | To what refers the Hazard level ? Which consideration ? | 16.09.2024 | Open |
| | on geotechnical data referenced in Section 4.5, aided by the seismo-stratigraphic | | |
| 10 | framework presented in Section 6 and its limitations" | 16.09.2024 | |
| | Please rephrase to clarify the approach, the units are defined from the stratigraphic | | Open |
| | Please replace the RGT (which are confusing with these new Geotechnical units) with the | 40.00.0004 | Open |
| Table 19 | stratigraphic units | 16.09.2024 | Open |
| | Can you add a word regarding the velocity model ? Is the same velocity shall be applied for | 16 00 2024 | |
| - | check the velocity model ? | 10.09.2024 | Open |
| | "Due to a similar seismic response, the distinction within the different units is not possible | | |
| - | using the UHRS dataset." I guess it is the same case for SAND 1 and SAND 2 also for | 16.09.2024 | |
| | differenciated from seismic | | Open |
| | How do you make the distinction between CLAY 1 and CLAY 2 based on geotechnical | | |
| - | parameters ? What is the treshold ? It seems to be 20 Mpa of Su, however in B11 and B12 this treshold is exceeded from 12 to | 16.09.2024 | |
| | 14m but is still considered as CLAY 1 | | Open |
| | The general ground model does not make sense stratigraphically and geologically | | |
| | speaking. W/w some costachnical units are present within another unit (example of SAND 1 within | | |
| | SILT1 in the Z2_OWF_B11 or SAND 2 within SAND 1 and within CLAY 1 in | | |
| | Z2_OWF_B13a) | | |
| Table 22 | -Why some unit (SSU3 for example) are described as silty CLAY and they include two | 10 00 2024 | |
| Table 52 | -How do we understand the repartition of these Geotechnical units ? | 10.09.2024 | |
| | | | |
| | The common way to perform a Ground Model is to define sub-units within stratigraphical | | |
| | does not present range of parameters within a stratigraphical unit so it cannot be be used | | |
| | as a base for further Ground Model refinement with additional data. | | Open |
| | I would include a disclaimer section, explaining the approach considered and mentionning | | |
| - | that the geotechnical parameters indicated for Geotechnical Units shall not be considered | 16.09.2024 | |
| | within a Stratigraphical Unit because some geotechnical tests used for Geotechnical Units characterisation might not be part of the considered Stratigraphical Unit | | |
| | Why is there this nink SIIT unit 2 Lunderstand that there was SIIT 1 and SIIT 2 2 M/bet | | Open |
| MED AO6 OWF Profiles | are the characteristics of this unit ? | 16.09.2024 | Open |
| MED AO6 OWF Profiles | Why the Geotechnical units are not presented in the profiles ? | 16.09.2024 | Open |
| MED AO6 OWF | Can you please present isopachs of all the units instead of Depth of Top Limit. With this | 16.00.2024 | |
| Profiles | do not know where are localised U1, U6, etc) | 10.05.2024 | Open |
| | "Geotechnical units and parameters' estimates (derived from CPT data and lab testing) and | | |
| | presented in section 10 for each of the 7 subunits may only be valid within approximately 100 m radius of the gentechnical locations" | | |
| | This approach is uncorrected: | | |
| | The parameters are invalid even at 5m of the geotechnical locations for design purpose, | | |
| - | however, a indicative range of parameters should be presented for soil units that are | 16.09.2024 | |
| | Same statement as previous comment, this model can not be used as a base for further | | |
| | refinement. | | |
| | Anyway, I would remove this sentence about the validity of the parameters in the 100m | | Open |
| MED AO6 OWE | Tadius, it does not make sense. | | Open |
| Profiles | Please present the seismic horizon instead of the RGT units limit. | 16.09.2024 | Open |
| | "Ground conditions and geotechnical unit distribution based on ground-truthed reflectors | | |
| | can be extrapolated to a 500 m radius and beyond in line with APPENDIX II – UHRS | | |
| - | REGIONAL PROFILES. | 16.09.2024 | |
| | mowever, georecrinical parameters derived from CP1 data and offshore/onshore lab testing, may only be valid for approximately a 100 m radius from the geotechnical locations." | | |
| | Could you place provide recommendations for further surrous with records to the specific | | Open |
| | Geotechnical/Stratigraphical units. | 16 00 0004 | |
| - | Which units present large variations in terms of geotechnical parameters? Which unit is | 16.09.2024 | |
| | not imaged or poorly imaged by the geophysical data ? Etc | | Open |

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| ALARP | As Low as Reasonably Practicable |
|-------|--|
| API | American Petroleum Institute |
| ASV | Assumed Sound Velocity |
| BE | Best Estimate |
| BSB | Below Seabed |
| с' | Cohesion |
| CIUc | Isotopically Consolidated Undrained Triaxial Compression |
| CID | Isotopically Consolidated Drained Triaxial Compression |
| cm | Centimetre |
| СРТ | Cone Penetration Test |
| CRS | Constant Rate of Strain Test |
| DEM | Digital Elévation Model |
| DGEC | Direction Générale de l'Énergie et du Climat |
| DR | Relative Density |
| DS | Direct Shear |
| DSS | Direct Simple Shear |
| EC | Export Cable |
| FC | Fall Cone |
| GIS | Geographic Information System |
| HE | High Estimate |
| LE | Low Estimate |
| LS | Lower Surface |
| LV | Lab Vane |
| m | Meters |
| MBES | Multibeam Echosounder |
| ORG | Organic Matter |
| OSS | Offshore Substation |
| OWF | Offshore windfarm |
| PC | Piston Core |
| Phi' | Friction Angle |

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| | | | | | | | |
| PP | | | | | | Pocket Penetrometer | |
| PSD | | | | | I | Particle Size Distribution | |
| pUXO | | | | | Possible | e Unexploded Ordnance | |
| q _c | | | | | | Cone tip resistance | |
| Qnet | | | | | | Net cone resistance | |
| RGTU | | | | | Re | gional Geotechnical Unit | |
| SBP | | | | | | Sub Bottom Profiler | |
| SHOM | | Se | ervice Hy | drographie | que et Océano | ographique de la Marine | |
| SSS | | Side Scan Sonar | | | | | |
| SSU | | Seismo-stratigraphic Unit | | | | | |
| Su | | Undrained Shear Strength | | | | | |
| SRB | | | | | Sulp | hate Reducing Bacteria | |
| ТА | | Tecnoambiente | | | | | |
| ΤΗΙΧΟ | | | | | | Thixotropy | |
| TRT | | | | | | Thermal Resistivity Test | |
| Т٧ | | Torvane | | | | | |
| U ₂ | | | | | | Pore Pressure | |
| US | | | | | | Upper Surface | |
| UHRS | | | | | Ultra-I | High Resolution Seismic | |
| UTM | | | | | Univers | sal Transverse Mercator | |
| UU | | | | | | Undrained Triaxial Test | |
| UUr | | | | | Undrained ⁻ | Triaxial Remoulded Test | |
| UXO | | | | | | Unexploded Ordnance | |
| VC | | | | | | Vibrocore | |
| WGS84 | | | | | World | Geodetic System 1984 | |
| ZH | | Zero Hydrographic | | | | | |

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1. EXECUTIVE SUMMARY

DGEC contracted TECNOAMBIENTE to integrate geophysical and geotechnical data and provide an initial ground model for the AO6 Offshore Wind Farm (OWF).

The geophysical dataset used for integration consisted of Ultra-High-Resolution Seismic profiles (UHRS) acquired by Tecnoambiente across the AO6 OWF Zone 2 area. Multibeam Echosounder (MBES), Sub-bottom Profiler (SBP), and Side Scan Sonar (SSS) datasets were acquired by SHOM in previous campaigns. Prior to the geotechnical investigation, Tecnoambiente obtained 20 UXO area clearances and the corresponding ALARP certificates. Additional MBES and SSS data acquired during the export cable (EC) and UXO survey by Tecnoambiente were factored into the integration work.

The geotechnical survey was performed by Tecnoambiente. It covered a total of 8 CPT, 4 PC and 6 VC with associated offshore and onshore laboratory testing. Geotechnical data were evaluated for the following five (5) main soil types were derived and used for integration and ground-truthing purposes.

- Silt
- Sand
- Silty Sand
- Interbedded sand and clay
- Clay

As part of this integration work, geophysical data provided by SHOM (SBP lines) and Tecnoambiente (UHRS lines) were re-processed and integrated with geotechnical data to provide geotechnical units and parameters within the limitations stated herein. A comprehensive GIS database was developed by Tecnoambiente, together with a set of charts included in this report. The following Five (5) regional geotechnical units were derived from SBP and UHRS dataset:

- RGT unit 1
- RGT unit 2
- RGT unit 3
- RGT unit 4
- RGT unit 5

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The following three (3) Geotechnical Units and six (6) Subunits with geotechnical parameters estimates have been obtained within the first 30 m BSB:

- SILT (SILT1 and SILT2)
- SAND (SAND1 and SAND2)
- CLAY (CLAY1 and CLAY2)

Due to the complex geological settings and limitation of the geophysical data discussed herein, soil types (based on ground-truthed horizons) can be extrapolated within a 500 m radius of the geotechnical locations in line with APPENDIX III – INTEGRATED CHARTS. However, geotechnical units and parameters estimates (derived from CPT data and lab testing) may only be valid within approximately 100 m radius of the geotechnical locations.

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1.1. SCOPE OF WORK

The objective of this report is to present the integration work performed on the geophysical and geotechnical data sets (listed in Section 4) and provide an initial ground model together with relevant geotechnical parameters to assist the preliminary foundation design of AO6 OWF Zone 2 turbines.

1.2. SURVEY AREA

The AO6 Zone 2 area is located in the Gulf of Lon off the coast of Marseille. The OWF development area is approximately 18.95 km x 24.50 km, with water depths ranging from - 71 to -128 m ZH. The AO6 Zone 2 complete survey area is divided into three sites (Figure 1-1):

- Offshore Substation (OSS) (3.97 km²)
- Export cable (EC) (94.66 km²)
- Windfarm area (OWF) (311.73 km²)



Figure 1-1 AO6 Windfarm area (OWF) and Export cable (EC) in the MED_AO6 Survey area.

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2. DATA REFERENCES

The information in this report should be read in conjunction with the supplementary reports and references presented in Table 1 and Table 2.

 Table 1 Seismic survey documentation and report reference names created by TA.

| Document Type | Name | Ref # |
|---|--|---------|
| Project Execution Plan | MED_TEC_02_PEP_1 | Ref. 1 |
| Project Execution Plan | MED_TEC_76_PEP_rev03 | Ref. 2 |
| Offshore Geotechnical Survey Mobilisation Report | MED_GEN_TEC_23_Mobilisation report_Geotechnical survey - AO6 OWF areas_3_A | Ref. 3 |
| Offshore UXO Survey Mobili- sation Report | MED_GEN_TEC_22_Mobilisation report_UXO survey - AO6 area_1_A | Ref. 4 |
| Offshore Seismic Survey Mo- bilisation Report | MED_GEN_TEC_21_Mobilisation report_Seismic survey - AO6 area_2_A | Ref. 5 |
| Offshore Geotechnical Survey Operational Report – OWF area | MED_TEC_38_Operational report - Geotechnical survey - OWF Zones 1 to 4 areas_0 | Ref. 6 |
| Offshore Seismic Survey Op- erational Report – OWF area | MED_TEC_25_Operational report - Seismic survey - OWF Zone 2 AO6 area_1 | Ref. 7 |
| Offshore Geophysical UXO Survey Operational Report – OWF area | MED_TEC_32_Operational report - UXO survey - OWF Zone 2 AO6 area_0_A | Ref. 8 |
| Offshore Geotechnical Survey Factual Report | MED-TEC-00062_A_rev02_Factual report - Geotechnical survey - OWF Zones 1 to 4 areas | Ref. 9 |
| Offshore Seismic Survey Fac- tual Report – OWF area | MED_TEC_49_Factual report - Seismic survey - OWF Zone 2 AO6 area_3 | Ref. 10 |
| Offshore Geophysical UXO Survey Factual Report – OWF area | MED_TEC_56_Factual report - UXO survey - OWF Zone 2 AO6 area_0 | Ref. 11 |
| GIS project for AO6 | RACC_FOS_area_2023-2024_Gis data | Ref. 12 |

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| Document Type | Name | Ref # |
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| Offshore Seismic Survey Fac- | MED_PeM_TEC_00053_IFE_rev03- Factual report - Seismic sur- | Ref. 13 |
| tual Report – OSS area | vey - OSS Zone 2 AO6 area | |

Table 2 References to DGEC documentation used to complete this report.

| Document Type | Name | Reference name | Ref # |
|---|---|-------------------|---------|
| Reconnaissance survey AO6 Parc – Operational report | 20221220_RAP_221_DGEC_EMR_Med_P arcs_Golfe_Lion_2021_2022 | SHOM, 2022 | Ref. 14 |
| Sedimentologic cartography | 20190807_NP_SHOM-DOPS-HOM- SEDIM_9-METHODE-CARTOGRAPHIE- SEDIMENTAIRE | SHOM, 2019 | Ref. 15 |
| Sediment grab samples | AO6-Med_T4.S3_Gran- ulo_PARC_ZoneD_V2.0 | SHOM, 2023 | Ref. 16 |
| Final sedimentological report | Rapport_DECF_EMR_AO6-Mediterran- née_Zone_D_T4.S4_PARC_EN | SHOM, 2022 | Ref. 17 |
| Notice du livrable T4.S7 – Fi- chiers SBP EMR AO6 Méditerranée – zone parc D | Notice_SBP_AO6_parc_D | SHOM, 2022 | Ref. 18 |
| Rapport : Campagne de me- sures Project de parc eolien en Mediterranee (zone D) | Rapport_WS13_DECF_EMR_AO6-Mediter- ranee_Lot4_T4.C1 | SHOM, 2023 | Ref. 19 |
| Rapport : Analyse, traitement et qualification des données Volet << Houle>> | Rapport_DECI_EMR_AO6- Med_zoneD_Lot4_Houle_v2 | SHOM, 2023 | Ref. 20 |
| Preliminary study of the seismo- tectonic context of the AO6 windfarms in the Gulf of Lion based on available data Final re- port | BRGM_RC-72169-FR _Final_review_final | BRGM, 2022 | Ref. 21 |
| 6-Alpha Unexploded Ordnance Threat and Risk Assessment | 9797_UXOTARA_with_RMS_AO6 Mediter- ranean_DNV_V4.0 | 6-Alpha, 2022 | Ref. 22 |

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| Document Type | Name | Reference name | Ref # |
|---|---|-------------------|---------|
| Intermediate Interpretation and Integration Report - AO6 Deep Geotechnical Survey – Fos PEM site | F212871-INT-FOS-001_RTE-A06 - Ge- otechnical SI OSS FOS Intermediate Inte- gration Report | Fugro, 2023 | Ref. 23 |

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2.2. GIS DATABASE

SHOM and Tecnoambiente acquired the geophysical dataset in different survey campaigns. The Geophysical datasets have been developed in a project-specific GIS package for the AO6 project (Ref. 12). Geophysical data (raster and shapefiles) used to produce this report are listed in Table 3:

| Dataset | Туре | File name | File type | Created |
|--------------------|------------------------------------|---|-----------|-----------|
| MBES | Bathymetry | RACC_FOS_GPY_2024_1_DEM_1 m_EC_OWF_Z2 | Geotiff | SHOM |
| MDEO | Bathymetry | RACC_FOS_GPY_2023_1_DEM_05 m_01_OWF_Z2 | Geotiff | ТА |
| | Survey ID | SURVEY_ID_PLY | Shapefile | TA |
| | | UXO_SEARCH_AREA_PLY | Shapefile | TA |
| | | UXO_VALIDATED_AREAS | Shapefile | TA |
| Survey | UXO OWF | UXO_TARGET_PNT | Shapefile | TA |
| boxes | UXO_ANOMALIES_AVOID- ANCE_AREAS | Shapefile | ТА | |
| | | UXO_RISK_ZONE | Shapefile | ТА |
| Nautical chart | Basemap | RACC_FOS_GPY_2023_3_NC_10m _01_OWF_n_OSS | Geotiff | Navionics |
| | | RACC_FOS_GPY_2023_4_SSS_01 5m_OWF_Z2_01 | Geotiff | SHOM |
| Side Scan Sonar | Geophysical SHOM survey | RACC_FOS_GPY_2023_4_SMF_1m _OWF_Z2_01 | Geotiff | SHOM |
| | | RACC_FOS_GPY_2023_4_SMF_2m _OWF_Z2_02 | Geotiff | SHOM |

Table 3 Raster and shapefile datasets.

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| Dataset | Туре | File name | File type | Created |
|---------------|--|--|-----------|---------|
| | RACC_FOS_GPY_2023_1_UHRS_ H05_Depth_BSB_10m_01_OWF_n_ OSS_Z2 | Geotiff | ТА | |
| | RACC_FOS_GPY_2023_1_UHRS_ H20_Depth_BSB_10m_01_OWF_n_ OSS_Z2 | Geotiff | ТА | |
| | | RACC_FOS_GPY_2023_1_UHRS_ H30_Depth_BSB_10m_01_OWF_n_ OSS_Z2 | Geotiff | ТА |
| UHRS | Depth BSB | RACC_FOS_GPY_2023_1_UHRS_ H35_Depth_BSB_10m_01_OWF_n_ OSS_Z2 | Geotiff | ТА |
| | RACC_FOS_GPY_2023_1_UHRS_ H38_Depth_BSB_10m_01_OWF_n_ OSS_Z2 | Geotiff | ТА | |
| | | RACC_FOS_GPY_2023_1_UHRS_ H40_Depth_BSB_10m_01_OWF_n_ OSS_Z2 | Geotiff | ТА |
| | | RACC_FOS_GPY_2023_1_UHRS_ H50_Depth_BSB_10m_01_OWF_n_ OSS_Z2 | Geotiff | ТА |
| SBP | SBP track lines | RACC_FOS_GPY_2023_4 | Shapefile | SHOM |
| | | SEABED_FEATURES_PNT | Shapefile | TA |
| Contacts | Features | SEABED_FEATURES_LIN | Shapefile | TA |
| | | SEABED_FEATURES_PLY | Shapefile | TA |
| Sedimentology | Seabed classi- fication | SEABED_CLASS_PLY | Shapefile | SHOM-TA |

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3. GEODETIC PARAMETERS

3.1. HORIZONTAL DATUM

Geodetic parameters are included in Table 4 below.

Table 4 Geodetic parameters table.

| DATUM | |
|--------------------------|-----------------|
| Survey Datum: | WGS 84 |
| Spheroid | GRS 1980 |
| Semi-Major Axis (a) | 6,378,137.000 |
| Semi-Minor Axis (b) | 6,356,752.31424 |
| Inverse Flattening (1/f) | 1/298.257223563 |

Projection parameters are included in Table 5 below.

Table 5 Projection parameters table.

| PROJECTION | | | | |
|--------------------|------------------|--|--|--|
| Projection | UTM | | | |
| False Easting | 500000 | | | |
| False Northing | 0 | | | |
| Latitude of Origin | 0°00'00.00000'' | | | |
| Central Meridian | 3°00'00.000000'' | | | |
| UTM Zone | 31 N | | | |
| Scale Factor on CM | 0.9996 | | | |
| Units: | Meters | | | |

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3.2. VERTICAL DATUM

The vertical datum used is Bathyelli v2.0 ZH geoid published by the SHOM in May 2018 (Table 6). The Bathyelli v2.0 ZH is a surface based on the GRS 1980 spheroid. It is a set of surfaces, each of which defines the separation of one vertical datum from the WGS84 ellipsoid to the vertical maritime reference Hydrographic Datum or Hydrographic Zero.

Table 6 Vertical datum.

| VERTICAL DATUM | | | | |
|----------------------|---|--|--|--|
| Chart Datum | Bathyelli v2 | | | |
| Surface of reference | ZH (Zero Hydrographic to the ellipsoid) | | | |

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4. DATA SOURCE

Data used to develop the current integration report comes from several sources, summarized in Table 7. The coverage and quality limitations encountered are described in the sections below.

 Table 7 Data source of the different data types used for this integration report.

| DATA TYPE | SOURCE | COVERAGE | QUALITY | GIS File |
|----------------------|--------|-----------------------|---|--|
| OWF POLYGONS | DGEC | - | - | SURVEY_ID_PLY RACC_FOS_GPY_2024_1 - OWF |
| | SHOM | Total cover- age | Medium (1 x1 m) | RACC_FOS_GPY_2024_1_DEM_1m_EC_OWF _Z2 |
| BATHYMETRY | ТА | Partial cover- age | High (0.5 m pixel /1500 x 1500 m spacing) | RACC_FOS_GPY_2023_1_DEM_05m_01_OWF _Z2 |
| SIDE SCAN SO- NAR | SHOM | Partial cover- age | Medium (1.57x1.57 m) | RACC_FOS_GPY_2023_4_SSS_015m_OWF_Z 2_01 |
| MRES backscattor | SHOM | Partial cover- age | Low (1 x 1 m) | RACC_FOS_GPY_2023_4_SMF_1m_OWF_Z2_ 01 |
| | SHOM | Total cover- age | Low (2 x 2 m) | RACC_FOS_GPY_2023_4_SMF_2m_OWF_Z2_ 02 |
| Magnetic data | SHOM | Partial cover- age | - | - |
| SBP - SGY | SHOM | Total cover- age | Good (250 m spac- ing) | Tracklines: RACC_FOS_GPY_2023_4 |
| SBP - Results | SHOM | Total cover- age | Low (Sediment range) | GEOLOGIC_FEATURE_PLY Sediment thickness |
| SBP - Results | SHOM | Total cover- age | Low | - |
| UHRS | TA | Total cover- age | Good (1500 x 1500 m spacing) | RACC_FOS_GPY_2023_1_UHRS_H05_Depth_ BSB_10m_01_OWF_n_OSS_Z2 RACC_FOS_GPY_2023_1_UHRS_H20_Depth_ BSB_10m_01_OWF_n_OSS_Z2 RACC_FOS_GPY_2023_1_UHRS_H30_Depth_ BSB_10m_01_OWF_n_OSS_Z2 RACC_FOS_GPY_2023_1_UHRS_H35_Depth_ BSB_10m_01_OWF_n_OSS_Z2 RACC_FOS_GPY_2023_1_UHRS_H38_Depth_ BSB_10m_01_OWF_n_OSS_Z2 RACC_FOS_GPY_2023_1_UHRS_H40_Depth_ BSB_10m_01_OWF_n_OSS_Z2 RACC_FOS_GPY_2023_1_UHRS_H40_Depth_ BSB_10m_01_OWF_n_OSS_Z2 |
| GRAB SAMPLES | SHOM | Partial cover- age | - | GRAB_SAMPLE_PNT- |

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| GEOTECHNICAL DATA | ТА | - | Good | GT_SAMPLE_PNT |
|----------------------|----|---|------|---------------|
|----------------------|----|---|------|---------------|

4.1. SBP, MBES AND SSS (SHOM)

SHOM conducted a geophysical survey during 2021 and 2022 as part of the environmental reconnaissance surveys for the future MED_AO6 OWF Zone 2.

The objective of the surveys was to obtain bathymetry, the nature and thickness of surface sediments, and the potential presence of anthropic objects. Datasets provided by the SHOM are listed in the Report references n^o [Ref. 14, Ref. 15, Ref. 16 and Ref. 17].

The coverage from each geophysical survey can be checked in APPENDIX I – NORTH-UP CHARTS.

The quality and coverage of each of the data is detailed subchapters below:

4.1.1. Bathymetry (MBES)

Two different MBES raster layers provide bathymetric information for the OWF, which have different zonal extensions and resolutions (Figure 4-1): a) SHOM bathymetry that covers the entire OWF with a resolution of 1x1 m pixel; and 2) MBES acquired by TA following the UHRS seismic lines, with a resolution of 0.5 m pixel (see section 4.2). These datasets are also included in the GIS database available for the AO6 Zone 2 project (Ref. 12).

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Figure 4-1 Different MBES data coverage available for the AO6 OWF Zone 2 area: a) TA, following UHRS lines, b) SHOM. The MBES depth scales are kept consistent across the figures for comparison purposes and adjusted to the study area of the OWF.

4.1.2. Side-scan sonar (SSS) and MBES backscatter

The SSS and MBES backscatter data acquired by SHOM consists of:

- Side Scan Sonar (SSS) covers the NE corner of the OWF area only with a high frequency and low frequency resolution (Figure 4-2). The quality of this dataset is considered good and was used for seabed interpretation and contact picking.
- Grid of seabed reflectivity (backscattered) derived from the Multibeam Echosounder (MBES). The resolution of the MBES backscatter data provided is 1 x 1 m (partial area) and 2 x 2 m (all the study area) (Figure 4-2). The use of MBES backscatter data entails some limitations. Its resolution is lower than the SSS, additionally, the signal received is of lower quality, with a lower contrast between high and lower reflectivity. Consequently, it can be difficult to identify the limits between seabed classes. This was also reported by SHOM and, it might be related to the acquisition parameters.

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For the seabed classification and seabed features, SSS data has been used where possible, otherwise MBES backscatter data was used, as well as the bathymetric data. The ground truthing for the seabed classification interpretation was performed using the geotechnical and grab samples results, however these are limited in numbers considering the whole zone 2 area (more details of geotechnical and grab samples in sections 4.3 and 0).



Figure 4-2 SHOM's OWF a) MBES backscatter and b) SSS data.

4.1.3. Sub-bottom profiler (SBP)

Two SHOM sub-bottom profiler datasets were provided, SEGYs, and its interpretation results. SHOM SGY's covers the whole area with approx. 250 m spaced of parallel NW-SE lines and some spaced crosslines (Figure 4-3).

SHOM SEGY dataset is considered of generally good quality (Figure 4-3).

However, it should be noted that the data was supplied with a phase rotation containing a greater range of negative amplitudes values than positive ones, which resulted in phase/amplitude response is not taken at face value (i.e. gas response would not have high amplitude negative phase as generally expected). Furthermore, the NW-SE orientation of SBP SEGY track-lines which is roughly parallel to the main geological trend and the lack of cross lines perpendicular to them, creates difficulties in geological interpretation.

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Notwithstanding the issue was factored in and the SEGY data were considered still usable for integration and geological/geotechnical mapping.

SHOM provided two types of results, the raw interpretation of the SEGY with acoustic basement mapped, and a map of acoustic basement thickness (Figure 4-4). Either the format or the nature of these results do not fit the purpose of the integration report without the possibility of ground truthing, hence were not used.

SHOM SEGY was integrated with UHRS interpretation, which was ground-truthed with geotechnical data, and helped define new reflectors in the OWF area. The interpretation provided covers the entire OWF Z2 area.



Figure 4-3 Distribution map of SBP profiles track-lines acquired by SHOM in the AO6 OWF Zone 2 area (Source: SHOM, 2022 (Ref. 14)).

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Figure 4-4 AO6 – OWF Zone 2 SHOM SBP sediment thickness map with sediment ranges in meters BSB of the Acoustic Basement (AB) (SHOM, 2022 (Ref. 14)).

4.2. UHRS, SBP AND MBES (TA)

Tecnoambiente carried out a geophysical survey over the proposed AO6 OWF Zone 2 site to acquire multibeam echosounder (MBES) data and Ultra-High-Resolution Seismic (UHRS) reflection profiles. MBES and SBP data were acquired along UHRS profiles at high resolution (0.5 x 0.5 m pixels) and was used to integrate SHOM's bathymetric data. Figure 4-5 shows the survey line plan for the OWF.

The quality of the UHRS data acquired by TA is good and fully covers the OWF area. For more details on the MBES, SBP and UHRS survey, refer to the dedicated Report n^o [Ref. 7 & Ref. 10].

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Figure 4-5 UHRS Line plan for MED_AO6 windfarm area (OWF).

For comparison and visualisation purposes, UHRS performed within the OSS area was presented in some figures, regional profiles and charts. We refer to the factual report for further information (Ref. 13).

4.3. GRAB SAMPLES (SHOM)

The ships operated by the SHOM carried out 30 grab samplings in 2021 and 2022 with a Shipeck sampler (Ref. 15, Ref. 16 & Ref. 17).

The obtained grab samples results have been used to support the seabed classification. It should be noted that grab samples are scattered and have low coverage of the area (Figure 4-6), therefore, the ground-truthing phase for the seabed classification of the area was limited.

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Figure 4-6 Grab samples data in the OWF area where V stands for mud.

4.4. UXO (TA)

Tecnoambiente performed a UXO survey over the planned OWF geotechnical investigation locations, acquiring MBES, SSS, and SBP datasets.

Side-scan sonar anomalies were picked and listed along the side-scan sonar lines in the UXO boxes, and they were integrated into the report and GIS geodatabase.

For the survey lines containing only SSS data, specific seabed contacts and objects were identified without ferromagnetic results. Therefore, it can be difficult to distinguish anthropogenic elements from geological elements (boulders, gravel, coarser sediments, etc.).

The location of the OWF final UXO boxes is shown in Figure 4-7.

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For more details on the UXO survey, please refer to the dedicated Report nº [Ref. 4, Ref. 8 & Ref. 11].



Figure 4-7 UXO box location within the AO6 OWF 2 area are highlighted in orange and blue colour. The blue ones are the ones which finally had a geotechnical location.

The 20 surveyed UXO boxes each had a total area of 900 square meters and a run length of 200 meters. Of these, 11 UXO areas are within AO6 Zone 2, and 8 of them coincide with geotechnical locations. ALARP areas of 18.000 m² has been found for the 20 GI locations.

4.5. GEOTECHNICAL DATA

Tecnoambiente (TA) conducted the geotechnical investigation for the AO6 Zone 2 Geotechnical Site Investigation for the offshore windfarm (OWF). TA geotechnical survey consisted of 12 CPT, 4 PC and 6 VC.

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- A total of 12 CPT (1 retest) has been acquired in Zone 2. Average CPT penetration has been 7.51 m, with maximum penetration of 30.00 m and a minimum penetration 27.32 m BSB. It should be noted that Z2_OWF_B13_CPT was aborted at 2.56 m due to technical issues, subsequently the CPT unit was redeployed and Z2_OWF_B13_CPTa reaching target depth.
- A total of 4 PC locations were acquired in Zone 2 with 2 additional retests. The average PC sample recovery was 3.22 m, with a maximum recovery of 4.10 m and a minimum recovery of 2.73 m.
- A total of 6 VC were also acquired in Zone 2 with one additional 1 retest. The average VC sample recovery was 7.40 m, with a maximum recovery of 8.58 m and a minimum recovery of 3.97 m.
- Water depths for PC and VC were updated from the MBES survey data acquired by TA.

Although the geotechnical locations ware widely spaced, TA geotechnical data provided sufficient information for ground-truthing and definition of the reduced area for AO6 Zone 2 OWF floating concept. CPT data was calibrated with Vibrocore data until a maximum of 9 m BSB. For integration and ground truthing 8 geotechnical locations were considered (Z2_OWF_B01, Z2_OWF_B03A, Z2_OWF_B04, Z2_OWF_B05A, Z2_OWF_B07, Z2_OWF_B09, Z2_OWF_B11 and Z2_OWF_B13) (Figure 4-8):

- CPT: 6 that fall within the OWF polygon and 2 in the vicinity.
- PC: 3 that fall within the OWF polygon and 1 in the vicinity.
- VC: 3 VC from the OWF survey that falls within the OWF and 1 in the vicinity.

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Figure 4-8 Geotechnical sample points of AO6 FOS OWF 2.

Final geotechnical combined logs for TA survey are presented in APPENDIX IV – COMBINED CPT-VC-PC LOGS, digital data are included in APPENDIX V – DIGITAL GEOTECHNICAL DATA.

Geotechnical data were evaluated for the following five (5) main soil types were derived and used for integration and ground-truthing purposes.

- Silt
- Sand
- Silty Sand
- Interbedded sand and clay
- Clay

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The table overleaf shows the list of geotechnical points from AO6 study area (Table 8 and Table 9).

Table 8 CPT locations TA geotechnical survey from AO6 OWF Zone 2.

| Point ID | Туре | Actual E (m) | Actual N (m) | Water Depth (ZH) – MBES (m) | Penetration (m) |
|-----------------|------|--------------|--------------|--------------------------------|-----------------|
| Z2_OWF_B01_CPT | CPT | 637024.84 | 4769227.74 | -95.10 | 29.94 |
| Z2_OWF_B03A_CPT | CPT | 634504.84 | 4765192.27 | -108.99 | 29.62 |
| Z2_OWF_B04_CPT | CPT | 635190.67 | 4761968.41 | -119.80 | 30 |
| Z2_OWF_B05A_CPT | CPT | 630077.47 | 4760196.74 | -125.57 | 29.83 |
| Z2_OWF_B07_CPT | CPT | 628284.57 | 4765251.63 | -114.24 | 29.84 |
| Z2_OWF_B09_CPT | CPT | 626098.61 | 4768886.32 | -94.14 | 29.8 |
| Z2_OWF_B11_CPT | CPT | 632657.34 | 4770337.94 | -94.42 | 29.76 |
| Z2_OWF_B13_CPTa | CPT | 628669.72 | 4772887.26 | -88.04 | 29.79 |

Table 9 VC and PC locations TA geotechnical survey from AO6 OWF Zone 2.

| Point ID | Туре | Actual E (m) | Actual N (m) | Water Depth (ZH) – MBES (m) | Actual Pene- tra- tion (m) | Recovery (m) | Recovery (%) |
|-----------------|------|--------------|--------------|---|--|-----------------|-----------------|
| Z2_OWF_B03A_PC | PC | 634495.33 | 4765188.57 | -109.29 | 4.95 | 3.38 | 68% |
| Z2_OWF_B03A_PCa | PC | 634508.24 | 4765200.42 | -108.89 | 5 | 3.23 | 65% |
| Z2_OWF_B05A_PC | PC | 630072.42 | 4760202.97 | -125.56 | 2.8 | 2.73 | 98% |
| Z2_OWF_B05A_PCa | PC | 630079.15 | 4760201.4 | -125.58 | 3.5 | 2.86 | 82% |
| Z2_OWF_B11_PC | PC | 632650.31 | 4770339.21 | -94.41 | 5 | 4.1 | 82% |
| Z2_OWF_B13_PC | PC | 628652.03 | 4772877.67 | -88.01 | 4.85 | 3 | 62% |
| Z2_OWF_B03A_VC | VC | 634501.96 | 4765196.31 | -109.02 | 9 | 8.58 | 95% |
| Z2_OWF_B05A_VC | VC | 630074.78 | 4760190.00 | -125.57 | 3.97 | 5 | 126% |
| Z2_OWF_B05A_VCa | VC | 630082.98 | 4760192.86 | -125.58 | 6.3 | 8.2 | 130% |
| Z2_OWF_B09_VC | VC | 626091.29 | 4768887.04 | -94.11 | 9 | 7.66 | 85% |
| Z2_OWF_B13A_VC | VC | 628664.11 | 4772888.32 | -88.03 | 9 | 7.4 | 82% |

Further details of the geotechnical methodology can be found in the Factual report - Geotechnical survey - OWF Zones 1 to 4 areas (Ref. 9).

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For comparison purposes, boreholes performed within the OSS area were presented in some figures, regional profiles and charts, however, were not used for geotechnical parameters calculations. We refer to the Intermediate Interpretation and Integration report for further information (Ref. 23).

4.5.1. Geotechnical equipment

All Geotechnical data were acquired using different techniques and equipment, dividing the methodologies in the 3 main types: CPT, PC and VC as detailed in Table 10.

| Technique | Equipment | | | | |
|-----------|--------------------------------------|--|--|--|--|
| | CPT Manta-200 SW | | | | |
| CPT | Geomil CPT Cone | | | | |
| | CPT Ballast Plate | | | | |
| PC | Carma Piston corer | | | | |
| VC | Vibrocorer Geocorer 3000+6000 engine | | | | |
| Winch | DEGRA Winch DWH34 | | | | |
| | Vime Winch JAL2100 | | | | |

Table 10 Geotechnical equipment details.

4.5.2. Geotechnical laboratory testing

The summary of completed laboratory tests to date for all the PC and VC locations of the wider area the OWF Z2 is presented in the following tables.

 Table 11 Overview of offshore laboratory testing complete for AO6 OWF Zone 2 samples.

| Туре | Test | OWF Zone 2 |
|---------------------|---------------------|------------|
| Chemical | SRB | 18 |
| Undrained Shear | Hand Torvane | 15 |
| Strength | Pocket Penetrometer | 13 |
| Thermal Resistivity | TRT | 48 |

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Index tests, such as PP and TV, are used for an indicative assessment of soil strength, whereas the other onshore strength tests have been used for parameter evaluations.

 Table 11 Overview of onshore laboratory testing and laboratory testing standards for OWF Z2 samples.

| Туре | Test | № of Results OWF Zone 2 | Lab. standard |
|----------------|--|----------------------------|-------------------------------|
| | EN-ISO soil description with PP and TV | 4xPC | EN-ISO |
| Classification | in cohesive material plus photograph | 6xVC | |
| | Water content | 38 | ISO 17892-1:2014 |
| | Particle density | 1 | ISO 17892-2:2014 - Method 5.1 |
| | Min. & Max. Density | 16 | ASTM D4254-16 - Method A |
| | Submerged Unit weight | 38 | ISO 17892-2:2014 - Method 5.1 |
| | Atterberg limits | 16 | ISO 17892-12:2018 |
| | PSD wet sieve (sedimentation if fines | 59 | ISO 17892-4:2016 |
| | are more than 15%) | | |
| | Sedimentation | 59 | ISO 17892-4:2016 |
| | Lab Vane | 13 | ASTM D4648/D4648M-16 |
| | Fall cone | 17 | ISO 17892-6:2017 |
| | Pocket Penetrometer | 28 | ISO19901-8:2014 |
| | Torvane test | 28 | ASTM D8121/D8121M - 19 |
| | UU (Undrained Triaxial) | 8 | ISO 17892-8:2018 |
| | UUr (Undrained Triaxial Remoulded) | 5 | ISO 17892-8:2018 |
| | CIUc (Isotropically Consolidated Un- | 3 | ISO 17892-9:2018 |
| Strength | drained Triaxial Compression (Ciu)) | | |
| Olicingui | DS (Direct Shear at (20, 40 and 80 | 16 | ISO 17892-10:2018 |
| | kPa) | | |
| | CIDc (Isotropically Consolidated | 7 | ISO 17892-9:2018 |
| | Drained Triaxial Compression) | | |
| | DSS (Direct Simple Shear) | 2 | ASTM D6528-17 |
| | THIXO (Thivotropy) | 5 | ISO 19901-8:2014 - ISO 17892- |
| | | | 6:2017 |
| | Oedometer CRS | 4 | ASTM D4186 / D4186M-20 |
| Chemical and | CaCO ₃ | 12 | ISO 10693-14 |
| thermal | ORG | 1 | ASTM D2974-20 - Method C |
| anorma | Thermal Conductivity | 7 | ASTM D 5334-22 |

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5. OWF FOUNDATION LAYOUT AND CONCEPT

At the time of writing, locations and foundation type for the planned AO6 zone 2 wind turbines have not yet been defined. This report presents a generalised assessment of the ground conditions and geotechnical parameters, limited to a 100m radius from the CPT locations and depths.

6. GEOLOGICAL FRAMEWORK

The geological map of the area (Figure 6.1) extracted from the Report Ref. 21 provides a general overview of the geology of the Gulf du Lion.



Figure 6-1 Geological map of the Gulf of Lion shelf (Report Ref. 21). The AO6 Z2 OWF is located within the red rectangle.

The Gulf of Lion is in the northwestern sector of the Mediterranean Sea bounded by the Pyrenees and the Alps. It comprises a wide shelf and continental slope, before descending to the abyssal area of the Algero-Balearic Basin. The basin formed as a result of tectonic rifting during the

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Oligocene – Miocene period (Gorini, et al. 1994, Bib. Ref. [11]), leading to the accumulation of a large amount of clastic sediments forming a thick wedge on the inner shelf, and more than 2 km on the outer shelf (Lofi, 2002, Bib. Ref. [22]). The continental shelf edge leads to the prograding margin observed in the Gulf of Lions during the end of the last glacial cycle. The geology within the Golf of Lion is described as a relatively low energy passive prograding margin, dominated by a rapid period of sedimentation during the Late Pleistocene, with layers of reworked sediments at a time when sea levels were about 100 m lower. At the end of the Last Glacial Maximum, sea levels were cyclically higher and lower as ice masses in the two hemispheres contracted and advanced. The deglacial succession overlies the major erosional discontinuity related sea level rises since the Last Glacial Maximum. It consists of basal transgressive deposits, subsequently reworked into dunes and sand ridges, interbedded with regressive prograding, marine derived sediments. The shelf 'relict' sands, pass rapidly into marine muds. The transition between sand and mud is outlined by a distinct regional step in seafloor morphology.

The geological stratigraphic sequence and the lithological descriptions provided below are derived from the integration and ground truthing with the geotechnical data set obtained within the AO6 OWF 2 area, of the SHOM SBP, TA UHRS (Ref. 17 and Ref. 10, respectively) and the regional geological literature. All depths are indicative and quoted in meters below seabed (m BSB).

For integration and ground truthing 8 geotechnical locations were considered (Z2_OWF_B01, Z2_OWF_B03A, Z2_OWF_B04, Z2_OWF_B05A, Z2_OWF_B07, Z2_OWF_B09, Z2_OWF_B11 and Z2_OWF_B13) (Figure 6-2):

- CPT: 6 that fall within the OWF polygon and 2 in the vicinity.
- PC: 3 that fall within the OWF polygon and 1 in the vicinity.
- VC: 3 VC from the OWF survey that falls within the OWF and 1 in the vicinity

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Figure 6-2 Location of the geotechnical investigated sites within the OWF area. UHRS seismic profiles track-lines are shown in orange and SBP track-lines in blue colored lines.

6.1. SBP AND UHRS GROUND TRUTHING

After TA assessment of interpretation results provided by SHOM of their SBP data (raw interpretation and sediment thickness map with thickness ranges) was concluded this data was not usable, because these results are for the acoustic basement (maximum profiler signal penetration), a surface not relevant for the geology of the study area. Therefore, SHOM SBP SEGYs were integrated with UHRS datasets and results. UHRS had good penetration, reaching a maximum seismic depth of approximately 30 m below seabed (BSB), allowing to ground truth and refining UHRS interpretation results. This process was conducted based on geotechnical information identifying Regional geotechnical units and differs from the previous UHRS Interpretation process, where seismo-stratigraphic units were identified. Nevertheless, the new interpretation of

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SHOM SBP data can be related to the previous results as shown in Table 12, and the following text.

Table 12 Correlation between shallow seismo-stratigraphic units of the AO6 OWF 2 survey area and new Regional Geotechnical Units.

SS. U.: Seismo-stratigraphic Unit; U.S: Upper Surface; L.S: Lower Surface. RGT.U.: Regional Geotechnical Unit.

| SSU | U. S. | L.S. | Depositional Envi- ronment | Seismic character (UHRS) | RGT. U. | U.S. | L.S. | Geotechnical Descrip- tion |
|-----|---------------|------|---|---|------------|----------------|----------------|---|
| 1 | Seabed | H03 | Shallow marine, a drape of sediment de- | Acoustically quieter unit | RGT Unit 1 | Seabed | Top RGT Unit 2 | Sandy, clayey SILT Extremely low shear strength. |
| | H03 | H05 | posited since sea level rise and the area was exposed | with parallel bedded re- flectors within. Mapped off the TA SBP data | RGT Unit 2 | Top RGT Unit 2 | Top RGT Unit 2 | Where GT Unit 2 is thick (CPT 09) interbedded SAND and CLAY else- where it is sandy SILT Shear strengths are low to moderate |
| 2 | H05 | H20 | Exposed above sea level, interpreted as estuarine depositional environment with evi- dence of small ero- sional surfaces inter- preted as channels | Discontinuous reflec- tors, acoustically chaotic layer. Acoustically of higher amplitude than the surrounding units. Evidence of unconformi- ties, small channeling, contourites within. | RGT Unit 3 | Top RGT Unit 3 | Top RGT Unit 4 | Sandy CLAY Low to moderate shear strength |
| 3 | Н03, Н05, Н20 | H30 | Exposed above sea level, interpreted as estuarine depositional environment with evi- dence of small ero- sional surfaces inter- preted as channels Marine deposited, acoustically quieter, finer sediments and well layered | Acoustically chaotic layer, similar in sedi- mentary characteristics to Unit 2 above, but with a strong change in dip pattern suggesting a se- quence change and un- conformable surface be- tween the two. The ba- sal reflector is undula- tory in some areas, compressed by the viewing scale. | RGT Unit 4 | Top RGT Unit 4 | Top RGT Unit 5 | Silty CLAY Low to moderate shear strength |

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| SSU | U. S. | L.S. | Depositional Envi- ronment | Seismic character (UHRS) | RGT. U. | U.S. | L.S. | Geotechnical Descrip- tion |
|-----|----------|------|---|--|--------------|-------------------|------|--|
| 4 | H30 | H40 | | Acoustically quiet unit with parallel reflectors within. | RGT Unit 5 | Top RGT Unit 5 | H40 | CLAY prone Moderate to high shear strength |
| 5 | H35 | H38 | A wedge of sand with an undulatory upper surface, interpreted as relict sand dune and a flat basal reflector. | Acoustically quiet dis- continuous reflectors, a package of sediment marking multiple events of depositional rework- ing and erosion. Top of the unit characterized by a strong reflector (nor- mal phase); the base is usually marked by a re- verse phase reflector. | RGT Unit 5.1 | H35 | H38 | Very Dens SAND |
| 4 | H38 | H40 | - | - | RGT Unit 5 | Top RGT Unit 5 | H40 | CLAY prone Moderate to high shear strength |
| 6 | H40 | | Marine deposited, acoustically quieter, finer sediments and well layered | Acoustically quiet unit with no, or very few, structures within it. | - | • | | - |

The data from the geotechnical locations were used to ground truth the SBP and UHRS seismic datasets, shown in Figure 6-3, Figure 6-4 and Figure 6-5. Based on the correlation with the geotechnical data, an Assumed Sound Velocity (ASV) of 1600 m/s was proven to be accurate for the time-depth conversion of the SBP and UHRS interpretation. There is good correspondence between the geotechnical data, interpretations and the various sub-seabed geophysical data. The shallow sequence is split into five Regional geotechnical units and horizons have been picked/created at the top and base of each unit.

RGT Unit 1 extends across the entire area and is generally 1 to 3 m thick. It is thicker in the far north of the area and across an east-west trending belt in the south of the area. The interval consistently tests as sandy, clayey SILT with extremely low shear strength. The interval is seismically transparent with a weak reflector at its base. This unconformity is approximately equivalent to H03, a reflector picked on the SBP and UHRS data (Ref. 10).

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RGT Unit 2 has a scattered distribution within the area of interest and is generally around 2 m thick. The interval is better developed through an east-west trending zone in the centre of the area where it is up to 15m thick. This part of the unit is progradational, deposited from the north. Where RGT Unit 2 is thick, CPT 09 records interbedded SAND and CLAY, elsewhere it is sandy SILT. Shear strengths are low to medium. The top of this unit is approximately equivalent to H03, the base of RGT Unit 2 is approximately equivalent to H05.

RGT Unit 3 is thicker in the north (~7 m) and pinches out in the centre of the study area. It comprises sandy CLAY with low to medium shear strength. The top of this unit is approximately equivalent to H05, and H03 where RGT Unit 2 is not present. The base of RGT Unit 3 is approximately equivalent to H20.



Figure 6-3 Geotechnical location CPT B11 on SHOM SBP data.

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RGT Unit 4 extends across the northern and central parts of the area and is up to 20 m thick, though is more typically 4 to 10 m thick. It comprises silty CLAY of medium to high shear strength. The top of this unit is approximately equivalent to H03, H05 and H20, (depending on whether RGT Units 1, 2 or 3 occur above RGT Unit 4). The base of RGT Unit 4 is approximately equivalent to H30.

RGT Unit 5 underlies the units listed above. It consistently tests as CLAY prone and has high shear strength. In the northeast of the OWF area within this RGTU 5 it is identified a local subunit RGTU 5.1, composed of more sandy deposits and cross by the OSS Boreholes (Figure 6-4). Regional geotechnical Unit 5 is closer to the seabed in the south of the area as RGT Units 2, 3 and 4 were sourced from the north and pinch out to the south. This leaves the RGT Unit 5 CLAY under a thin drape of RGT Unit 1 sandy, clayey SILT. The top of RGT Unit 5 is approximately equivalent to H30.



Figure 6-4 Geotechnical location CPT B11 on UHRS on an SSW-NNE section.

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Figure 6-5 Geotechnical location CPT B07 on UHRS on an WSW-ENE section.

6.2. UHRS REGIONAL PROFILES

Six UHRS seismic profiles covered in four charts, integrated with the geotechnical data, have been selected for representing the regional geology and stratigraphic units of the AO6 windfarm area (Figure 6-6). UHRS regional profiles can be found at APPENDIX II – UHRS REGIONAL PROFILES.

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Figure 6-6 UHRS lines selected for depicting the seismic regional profiles.

7. SEABED CONDITIONS

This section summarises the main seabed features and constraints identified within the AO6 OWF Zone 2 area.

APPENDIX I – NORTH-UP CHARTS includes eight (8) north-up charts presenting: MBES bathymetric model, MBES slope model, SSS and MBES backscattered mosaics, SSS seabed classification and features, including UXO surveyed area contacts, and 4 new ground truthed SBP-UHRS surfaces (Top of RGT Unit 2, 3, 4 and 5).

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7.1. BATHYMETRY

The bathymetry of the AO6 OWF Zone 2 area is presented in the north-up chart 1 in APPENDIX I - NORTH-UP CHARTS with 1 x 1 m and 0.5 x 0.5 m pixel resolution and Figure 7-1. Bathymetric details are summarized in Table 13. Figure 7-2 presents three bathymetric profiles and the slope relevant to the AO6 OWF Zone 2 area.

All descriptions are based on SHOM bathymetry, the only data source covering the whole AO6 OWF 2 area. In post-processing, MBES data was adapted to fit the AO6 OWF 2 survey polygon.

Bathymetry within the AO6 OWF 2 area can be divided into three sections based on depth and slope characteristics, with a general trend of increasing depth towards the south. In the AO6 OWF 2 area, moving from north to south, the depth increases slightly and gradually, with a gentle and constant slope (first section), until a sudden steepening and depth increase occurring in two stages, one drop of 11.6 m and the other of 12.6 m. Ripples and sand waves are distinctly observed in areas where the slope remains gentle before these abrupt changes (second section). After the previously mentioned drops, a gentle and constant slope is resumed, with a tendency for the depth to increase towards the south (third section).

The first and third sections have a much smoother texture, in contrast to the second section, where ripples, sand waves, and seabed mounds are present.

| Attribute along the OWF area | Value | Location |
|-----------------------------------|--------------|---------------------------|
| Minimum water depth | -87.09 m ZH | N region of the OWF area. |
| Maximum water depth | -127.48 m ZH | S region of the OWF area. |
| Average (natural) seabed gradient | 0.75° | - |
| Maximum gradient | 41.17° | Sand Waves |

 Table 13 Summary of bathymetry along the AO6 OWF Zone 2 area.

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Figure 7-1 AO6 OWF SHOM Bathymetry with the localization of the three different profiles.



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Figure 7-2 Profiles a), b) and c) with the bathymetry as the blue line and the slope as the red one. The locations of these profiles can be found in Figure 7-1.

7.2. AREAS OF STEEP GRADIENT

The slope along the AO6 OWF Zone 2 area is presented in the north-up chart 2 in APPENDIX I – NORTH-UP CHARTS based on 1 x 1 m pixel resolution. Gradient statistics data were cut to fit the AO6 OWF study area polygon.

Seabed slope on the AO6 OWF Zone 2 area has an average value of 0.75°, with a maximum value of 41.17°. High slopes are encountered on the sand wave and ripple morphologies, present in the study area.

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Table 14 provides the colour and gradient classification for the slope and Figure 7-3 shows a general distribution of the slope at AO6 OWF Zone 2 area. Figure 7-2 three slope profiles along and across the OWF area.

Table 14 Seabed gradient classification over the AO6 OWF area.

| Slope classification | Gradient (º) | Colour |
|----------------------|--------------|--------|
| Very gentle | <1º | |
| Gentle | 1º - 5º | |
| Moderate | 5° – 10° | |
| Steep | 10º - 15º | |
| Very steep | >15° | |



Figure 7-3 Slope map from AO6 OWF area. Slope raster calculated from the SHOM bathymetry raster, with 1 x 1 m pixel resolution.

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7.3. BEDFORMS

Sediment classification and sediment features along the AO6 OWF Zone 2 area are presented in chart 4 of APPENDIX I – NORTH-UP CHARTS.

The identification and characterization of seafloor bedforms along the OWF area was conducted using available marine geophysical survey data, specifically bathymetry from multi-beam echo sounder (MBES) (Figure 7-1). Geotechnical data and grab samples results were also used together with the bathymetric data for the seabed classification and seabed features (Figure 7-4).



Figure 7-4 Bedforms interpretation from AO6 OWF Zone 2.

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7.3.1. Areas of scour and escarpments

Two main escarpments have been interpreted within the AO6 OWF Zone 2. These are up to 12.6 m in height and 2 to 4 km in length with northwest-southeast orientations (Figure 7-1, Figure 7-2, Figure 7-3, Figure 7-4 & Figure 7-5). The origin of these escarpments is uncertain; however, it is suggested that they may be linked to current bedforms, given their specific location to sand waves and ripples (Figure 7-4).



Figure 7-5 Interpretation of escarpments within the AO6 OWF Zone 2.

7.3.2. Seabed Mounds

Numerous seabed mounds are interpreted within the AO6 OWF Zone 2 survey area. These mounds are round structures ~ 50 m (occasionally 20 m or > 110 m) in diameter and varying in height from 10 cm to 2 m, examples of these seabed mounds are presented in Figure 7-6. These features may be authigenic carbonate mounds formed by the presence of gas (relic and/or

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present-day) (Bohrmann et al., 1998, Catherine et al. (2017) (Bib. Ref.[7])). The SBP & UHRS lines that cross these mounds did not display significant acoustic blanking that is usually associated with the presence of gas. The lack of observed acoustic blanking suggests that these mounds could be relic gas-related features or gas release may be episodic. Alternatively, their formation could be unrelated to gas.



Figure 7-6 Magnified view of seabed mounds in the center area of the OWF.

7.3.3. Current related bedforms

Currents-related bedform morphologies have been interpreted based on their wavelength and height values, as reported in Table 15. It is important to note that while ripples and mega ripples could fit into different categories, the classification in OWF 2 is primarily based on their height.

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| Table 15 Current | related bedform | characteristics from | Belderson et al. | (1982) (Bib. | Ref. [6]). |
|------------------|-----------------|----------------------|------------------|--------------|------------|
| | | | Boldoloon ot an | (1002) (2101 | |

| Bedform Type | Wavelength (m) | Height (m) |
|--------------|----------------|------------|
| Sand Wave | >60 | >1.5 |
| Mega Ripple | 5-60 | 0.5-1.5 |
| Ripple | <5 | <0.5 |

Ripples morphologies are present in the central-eastern part of the OWF area (Figure 7-7), with heights ranging between 0.1 to 0.5 m and wavelengths ranging between 100 to 270 m. Mega ripples are identified in the top northwestern and bottom southwestern part of the OWF area (Figure 7-7), with heights ranging between 0.3 to 1.2 m and wavelengths ranging between 140 to 430 m.



Figure 7-7 Magnified view of mega ripples and ripples in the center area of the OWF.

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Additionally, Sand waves are mainly found in a central elongated zone, oriented NW-SE. These bedforms are found in the study area with heights ranging between 0.3 to 2.5 m and with wavelengths ranging between 350 to 170 m. Furthermore, Figure 7-7 shows a magnified view of ripples, mega ripples and sand waves in the OWF.

7.4. SEDIMENT INTERPRETATION

Mud is the main seabed sediment classification in the offshore windfarm area (Figure 7-8).



Figure 7-8 Seabed classification of the AO6 OWF area.

7.5. GEOLOGICAL FAULTS

The OWF area is characterized by a succession of horst and grabens, oriented NE-SW to NNE-SSW. The identified tectonic faults are sealed by the Messinian Erosional Surface, and no fault

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with a significant vertical offset has been identified (Oudet, 2008; Oudet et al., 2010, Bib. Ref. [24] and [25]).

Recent studies do not map active faults in the zone of interest for building windfarms. However, Salon-Cavaillon and Moyenne Durance active faults are near the landfall area of zone 2 (Jomard et al., 2017; Thomas et al., 2021 (Bib. Ref.[18] and [26])) (Figure 6-1). Therefore, BRGM (Report Ref. 21) recommends checking geological faults, for example, by using very-high-resolution seismic data, as it remains unclear whether the onshore active faults extend offshore.

7.6. pUXO Contacts

During the UXO survey, two hundred fifty-seven (257) side scan sonar and sixty (60) sub-bottom profiler contacts were detected. This data can be consulted in the UXO Factual report (Ref. 11) and the GIS package for AO6 OWF Zone 2 project (Ref. 12). A total ALARP area of 9.900 m² was obtained for the 11 Geotechnical locations within the area of interest. From these 11 ALARP areas, only 8 were finally surveyed in the geotechnical survey.

Punctual objects have been identified, but it was not possible to specify if there are ferromagnetic elements. Therefore, it can be difficult to distinguish anthropogenic elements from geological elements (boulders, gravel, coarser sediments, etc.). Thus, any anomaly corresponds to a potential UXO.

A 15 m avoidance distance was established from any isolated anomaly. Consequently, 8 out of the 20 GI boxes had to be relocated to an area that would not interfere with the safety buffers (Table 16).

| ID | Name GI | Easting UTM31N | Northing UTM31N | Within AO6 Zone 2 | Geotechnical survey |
|----|-------------|----------------|-----------------|-------------------|---------------------|
| 1 | Z2_OWF_B01 | 637022.00 | 4769227.00 | YES | YES |
| 2 | Z2_OWF_B02B | 633436.17 | 4766958.53 | YES | NO |
| 3 | Z2_OWF_B03 | 634468.00 | 4765244.00 | YES | YES |

Table 16 Final GI box location. In pink are the GI boxes where an alternative location had to be found.

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| ID | Name GI | Easting UTM31N | Northing UTM31N | Within AO6 Zone 2 | Geotechnical survey |
|----|-------------|----------------|-----------------|-------------------|---------------------|
| 4 | Z2_OWF_B04 | 635191.00 | 4761969.00 | YES | YES |
| 5 | Z2_OWF_B05B | 630076.80 | 4760198.55 | YES | YES |
| 6 | Z2_OWF_B06B | 629018.45 | 4761945.89 | YES | NO |
| 7 | Z2_OWF_B07 | 628283.00 | 4765253.00 | YES | YES |
| 8 | Z2_OWF_B08 | 623919.00 | 4766350.00 | NO | NO |
| 9 | Z2_OWF_B09 | 626097.00 | 4768888.00 | YES | YES |
| 10 | Z2_OWF_B10 | 629371.00 | 4769628.00 | YES | NO |
| 11 | Z2_OWF_B11 | 632656.00 | 4770340.0 | YES | YES |
| 12 | Z2_OWF_B12 | 632298.00 | 4775070.00 | NO | NO |
| 13 | Z2_OWF_B13 | 628659.00 | 4772883.00 | YES | YES |
| 14 | Z2_OWF_B14B | 626460.24 | 4776487.12 | NO | NO |
| 15 | Z2_OWF_B15 | 624293.00 | 4773989.00 | NO | NO |
| 16 | Z2_OWF_B16B | 622079.69 | 4771393.76 | NO | NO |
| 17 | Z2_OWF_B17 | 621375.00 | 4768536.00 | NO | NO |
| 18 | Z2_OWF_B18B | 618837.08 | 4770755.42 | NO | NO |
| 19 | Z2_OWF_B19B | 619896.18 | 4775041.59 | NO | NO |
| 20 | Z2_OWF_B20B | 622067.95 | 4777572.56 | NO | NO |

7.7. SHIPWRECK, ANTHROPOGENIC OBJECTS AND POSSIBLE BLAST MARKS

As mentioned in the previous section, punctual objects have been identified. Still, it was not possible to specify if there are ferromagnetic elements and it is challenging to distinguish anthropogenic elements from geological ones.

Two potentially anthropogenic objects were found in the OWF AO6 Zone 2 (Figure 7-9), which are located between -88 and -95 m ZH.

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Anchoring marks are located between 95 and 90 m ZH to the northeast of the OWF AO6 Zone 2. Additionally, trawl marks have been identified almost everywhere in the OWF AO6 Zone 2 area.

Figure 7-9 shows the location of all potential anthropogenic objects mentioned above.



Figure 7-9 Location of anthropogenic objects.

8. GEOHAZARDS

This section presents the possible geohazards identified across the AO6 OWF Zone 2 area; Table 17 presents a qualitative classification based on the observed indicators listed.

Table 18 summarizes the potential geohazards encountered in the AO6 OWF Zone 2 area. Moreover, Figure 8-1 shows the four gas hazard levels identified and described within the depth of interpretation (upper 30 m) in the OWF survey area. There is some evidence of gas migration

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from lower levels not interpreted here, as the interpretation of the anomalous seismic amplitudes has been limited to the upper 30 m. It is worth noting that in the current polygon of the OWF area, there are very few gas levels identified (Figure 8-1). More details about the gas levels can be found in report Ref. 10.

It should be noted that Table 18 assessment is limited to the coverage (line spacing), resolution and quality of the datasets available.

Table 17 Criteria for geohazards estimation.

| Class | Description |
|----------|--|
| High | Indicators observed in the area within the data sets. |
| Moderate | Some indicators observed in the area within the data sets. |
| Low | No indicators observed in the area within the data sets. |

Table 18 Geohazards and soil conditions summary for AO6 OWF area.

| Geohazard | Likeli- hood | Description | Notes |
|---|--------------------|---|--|
| Ground condi- tion variability | Low | Mud is the main seabed sediment classifica- tion in the offshore windfarm area. | The seabed classification interpretation was performed using the geotechnical and grab samples results; however, these are limited in numbers considering the whole zone 2. |
| Irregular sea- floor High Slope areas | Moderate | Higher slope gradients are encountered within mega ripple and ripple bedforms mor- phologies present in the study area. | Turbine foundations and cable installation in slopes higher than 10 degrees are deemed possible with appropriate design and seabed mitigations in place. |
| Gravel, and pebbles accu- mulations | Low | No accumulations of gravel and cobbles are abundantly present in the study area. | Uncertainties on vertical and lateral variability of granular sediments at seabed are still pre- sent, considering the datasets. |
| Superficial Boulders | Moderate | Superficial boulders have been identified in the OWF area. | The presence of buried boulders cannot be ruled out, considering the geological settings. |
| Seabed mounds | High/Mod- erate | Numerous seabed mounds are interpreted within the AO6 OWF Zone 2 survey area. | The lack of observed acoustic blanking sug- gests that rather than being gas pockets; these mounds could be relic gas-related fea- tures, or gas release may be episodic; alter- natively, their formation could be unrelated to gas. |

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| Geohazard | Likeli- hood | Description | Notes |
|-------------------------|-----------------|--|---|
| Migrating bed- forms | Moderate | Diverse types of bedforms have been de- scribed in the area: ripples, mega ripples, and sand waves. | Currents create bedforms due to sediment transport and may show internal structures and variations in sediment grain size. Relevant to scour potential and on-bottom stability. |
| Shallow gas | Low | A few gas were identified and described within the recent OWF survey area, with their locations shown in Figure 8-1 and further de- tails available in the Ref 10 report. | There is some evidence of gas migration from lower levels not interpreted here, as the inter- pretation of the anomalous seismic ampli- tudes has been limited to the upper 30m. |
| Seismogenic faults | Low | No fault scarps have been observed at sea- bed in the data sets. | Anchor structures and cables shall be located at a safe distance from seismogenic faults. |



Figure 8-1. Shallow gas hazards. Refer to Ref. 10 for further details.

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9. GEOTECHNICAL PARAMETERS

All the offshore and onshore laboratory analyses and methodologies are detailed within the geotechnical operational and factual reports with Ref. 6, Ref. 9 and Ref. 11. This section presents the different methodologies used to obtain the derived geotechnical parameters in this report.

9.1. SOIL GEOTECHNICAL PARAMETERS

Geotechnical parameters relevant for floating turbine foundation design were derived based on the data referenced in section 4.5 and summarised in subchapters below.

9.1.1. Submerged unit weight

Unit weight was derived from CPT data using method published by Lengkeek and Brinkgreve 2022 (Bib. Ref. [21]) and from bulk density derived in the lab multiplied by 9.81m/s²; then submerged unit weight was derived by subtracting the unit weight of seawater (10.1 kN/m³).

9.1.2. Plasticity Index

Soil plasticity is evaluated based on results of Atterberg limit tests in the lab. Atterberg limits were executed on cohesive specimens or on the fines fraction of granular samples. In the latter case the coarse fraction was discarded.

9.1.3. Cone Penetration Test (CPT) tip resistance

Cone Penetration Test tip resistance (q_c) is a geotechnical parameter utilised in various pile design and drivability methods, representing the in-situ density and strength of the soils. Pore pressure (u_2) is also provided to identify the variance of the cohesive and partially drained layers along the profile.

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9.1.4. Relative density

Relative density was derived for SAND1, SAND2, units from CPT data. Relative density is derived following the below equation by Jamiolkowski et al. 2001 (Bib. Ref.[17]):

Relative density (D_r) in Relative_Density_2 is defined as:

$$D_r = 100 \cdot \left[C_1 \cdot ln(\frac{q_t/\sigma_{atm}}{\sqrt{\sigma'_{vo}/\sigma_{atm}}}) + C_2 \right]$$

Jamiolkowski et al. (2001), NCHRP Synthesis 368 pp 41-42

Where:

C₁ is stored in the Relative_Density_2_C1 field. Published value is 0.268 for all sands

 C_2 is stored in the Relative_Density_2_C2 field. For average compressibility: $C_2 = -0.675$, for high

compressibility and sands of carbonate or calcareous composition: $C_2 \le 1.0$, for low compressibility: $C_2 \ge 2.0$.

Figure 9-1 Equation used to derive the relative density parameter from CPT data.

9.1.5. Friction angle

Friction angle was derived for SAND1 and SAND2 from Sheabox (DS), CID onshore lab testing and from CPT data following the method by Kulhawy and Mayne 1990 (Bib. Ref. [20]), which was found to be the most representative correlation for the ground conditions at AO6 OWF below 3 m BSB.

The angle of internal friction of sand (Φ') in Friction_Angle_3 is defined as:

$$\Phi' = C_1 + C_2 \cdot log(q_{t1})$$

Kulhawy and Mayne (1990), NCHRP Synthesis 368 p 38

Where:

 C_1 is 17.6° in the published formula, and is stored in the Friction_Angle_3_C1 field.

 C_2 is 11.0° in the published formula, and is stored in the Friction_Angle_3_C2 field.

This correlation of Φ' is only applicable for Sands and hence will only be calculated if the Soil_Type_1 field value is *coarse* or *mixed*.

Figure 9-2 Equation used to derive the friction angle parameter from CPT data.

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9.1.6. Undrained shear strength

Values of undrained shear strength for cohesive units SILT1, SILT2, CLAY1 have been derived using the following methods:

- UU triaxial compression
- CIU triaxial compression
- Direct simple sheal DSS
- Lab vane LV
- Fall cone FC
- Cone penetration tests (CPT)

Undrained Shear Strength (Su) has been empirically derived from CPT data using Nkt factors 15 and 20, using the following relationship from Lunne et al., (1997) (Bib Ref.[23]).

$$Su = \frac{Qnet}{Nkt}$$

where:

Su = Undrained shear strength Qnet = net cone resistance Nkt = conversion factor

Figure 9-3 Equation used to derive the Su parameter from CPT data.

The selection of Nkt factors as 15 and 20 was confirmed after shear strength results from UU, DSS and CIU tests obtained in SILT1, SILT2, and CLAY1 samples were compared with the CPTderived method. Engineering judgment was used to compare UU, DSS and CIU results from cohesive samples affected by sand partings and partially drained behaviour.

Remoulded undrained shear strength was derived from the following lab tests:

- Remoulded Lab vane (LV_R)
- Remoulded Fall cone (FC_R)
- Remoulded unconsolidated undrained triaxial (UU_R)

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Soil sensitivity was derived by dividing the intact shear strength by the remoulded shear strength Index strength tests performed offshore, such as pocket penetrometer and hand torvane results, present high level of scatter due to manual testing, hence are not considered for comparison.

9.1.7. Strain at 50% strength (E50)

Epsilon 50 (E50), defined as the soil strain at 50% of maximum deviatoric stress, is derived from UU and CIU tests on intact samples and is typically used to inform the deformation characteristics of cohesive soils. Epsilon 50 is of particular interest for designing piles subject to lateral loads that significantly depend on soil resistance along the pile as a function of pile deflection.

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10. GEOTECHNICAL UNITS

This section details the geotechnical units derived for the AO6 OWF Zone 2 area based on geotechnical data referenced in Section 4.5, aided by the seismo-stratigraphic framework presented in Section 6 and its limitations.

Geotechnical units were derived based on the lab and/or CPT interpreted soil description of primary and secondary soil constituents and consistency according to ISO 14688-1 (2017b), and ISO 14688-2 (2017c). Table 19 presents the units and soil mechanical behavior derived for AO6 OWF Zone 2 soil characterization.

| RGT Unit | Soil behav- iour | Geotech- nical unit | Description | Sample Photo |
|-------------|---|------------------------|---|--|
| 1 | Undrained or cohesive | SILT1 | Extremely low to low shear strength clayey SILT | |
| 2 and 3 | Transitional or partially drained | SILT2 | Low to medium shear strength sandy SILT | |
| 2 and 3 | Drained or granular | SAND1 | Medium dense to dense silty SAND | |
| 3 and 4 | Drained or granular | SAND2 | Dense to very dense silty SAND | |
| 4 and 5 | Undrained or cohesive | CLAY1 | Medium to high shear strength silty CLAY | And the second sec |
| 5 | Undrained or cohesive | CLAY2 | High shear strength silty CLAY | Not intercepted by VC or PC |

 Table 19 Geotechnical units differentiated for the AO6 OWF area.

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Digital geotechnical data used are included in APPENDIX V – DIGITAL GEOTECHNICAL DATA. Location-specific summary logs have been developed to provide ground conditions profiles for each geotechnical location to 30 m BSB, based on a minimum unit thickness of 0.5m (Figure 10-1).



Figure 10-1 Geotechnical Units AO6 OWF Z2.

Geotechnical locations have been grouped to create longitudinal and transversal profiles that display the evolution of the units across the OWF. The location of geotechnical units within each soil profile is shown from Figure 10-2 to Figure 10-7.

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Figure 10-2 Geotechnical Units within the CPT of Soil Profile 1.



Figure 10-3 Geotechnical Units within the CPT of Soil Profile 2.

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Figure 10-4 Geotechnical Units within the CPT of Soil Profile 3.



Figure 10-5 Geotechnical Units within the CPT of Soil Profile 4.

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Figure 10-6 Geotechnical Units within the CPT of Soil Profile 5.



Figure 10-7 Geotechnical Units within the CPT of Soil Profile 6.

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A statistical approach combined with engineering judgment in line with the methods recommended by Hicks Bib. Ref. [12] and Baecher Bib. Ref. [4] was used to derive integrated geotechnical parameters considering the limitation of the multiple data sets. Due to the lateral variability associated with the encountered ground conditions, the geotechnical parameters provided are deemed suitable for preliminary foundation sizing in proximity or up to a 100 m radius of the geotechnical locations.

The geotechnical parameters provided are based on the following workflow:

- Assessment of spatial soil variability within the AO6 OWF Zone 2 area on geophysical and geotechnical results.
- Selection and presentation of geotechnical parameters for 3 main units with associated 6 subunits.
- Correlation of in situ CPT and laboratory test data to interpret derived geotechnical parameters in soil units.
- Geotechnical parameter assessment for typical parameter value ranges and assignment of best (BE), low (LE) and high (HE) estimates for selected parameters, where possible.
- The mechanical behaviour of the soils within the study area is mainly described by shear strength in cohesive soils (i.e. clay and silt) and relative density in granular soils (i.e., sand and gravel).

Geotechnical parameters low estimate (LE), best estimate (BE) and higher estimate (HE) are presented for the relevant units in the sections below.

10.1. SILT

The SILT unit is further divided into two sub-units SILT1 and SILT2, based on the consistency and mechanical behaviour, as detailed below.

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10.1.1. SILT1

The SILT1 unit is present at seabed at all investigated locations, generally consisting of extremely low to low shear strength non plastic clayey SILT, locally sandy.

Geotechnical locations, detailed soil description and top and bottom depths associated with SILT1 unit are presented in table below.

| Location ID | Top (m) | Bottom (m) | Thickness (m) | Description SILT1 |
|-------------|---------|------------|---------------|--|
| Z2_OWF_B01 | 0.0 | 0.9 | 0.9 | Extremely low to low shear strength clayey SILT |
| Z2_OWF_B03A | 0.0 | 0.5 | 0.5 | Extremely low to very low shear strength sandy clayey SILT |
| Z2_OWF_B04 | 0.0 | 0.5 | 0.5 | Extremely low shear strength sandy SILT |
| Z2_OWF_B05A | 0.0 | 0.7 | 0.7 | Extremely low shear strength sandy SILT |
| Z2_OWF_B07 | 0.0 | 0.8 | 0.8 | Extremely low shear strength sandy clayey SILT |
| Z2_OWF_B09 | 0.0 | 0.8 | 0.8 | Extremely low to low shear strength sandy SILT |
| Z2_OWF_B11 | 0.0 | 0.8 | 0.8 | Extremely low shear strength sandy SILT |
| Z2_OWF_B13a | 0.0 | 1.1 | 1.1 | Extremely low to low shear strength sandy SILT |

Table 20 SILT1 locations, depths and detailed soil description.

Indicative geotechnical parameters for SILT1 are presented in table below.

Table 21 Geotechnical parameters for SILT1.

| SILT1 | | | | Submerged unit weight (kN/m3) | | Cone tip re- sistance (MPa) | | | Plasticity In- dex (%) | | | | | |
|-----------------------------|----------------------------|------------------------------------|------------------------------------|-------------------------------------|------------------------------|--------------------------------|----|-----------------------------------|---------------------------|------|---------|----|----|----|
| min- Top depth (m) | Max Top depth (m) | min Bot- tom Depth (m) | Max Bot- tom Depth (m) | Min Thick- ness (m) | Max Thick- ness (m) | LE | BE | HE | LE | BE | HE | LE | BE | HE |
| | | | | | | 6.5 | 7 | 7.5 | 0.02 | 0.05 | 0.1 | 5 | 10 | 15 |
| 0 | 0 | 0.5 | 1.1 | 0.5 | 1.1 | Water Content (%) | | Undrained shear strength (kPa) | | | E50 (%) | | | |
| | | | | | | LE | BE | HE | LE | BE | HE | LE | BE | HE |
| | | | | | | 30 | 40 | 60 | 5 | 5 | 15 | 2 | 3 | 4 |

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10.1.2. SILT2

The SILT2 unit generally consists of low to medium shear strength low plasticity sandy SILT, locally with thin to thick beds of very loose silty sand. Due to the frequent beds of sand this unit may present a partially drained behaviour. Geotechnical locations, detailed soil description and top and bottom depths associated with SILT2 unit are presented in table below.

| Location ID | Top (m) | Bottom (m) | Thickness (m) | Description SILT2 |
|-------------|------------|---------------|------------------|---|
| Z2_OWF_B03A | 0.5 | 5.1 | 4.6 | Low to medium shear strength sandy SILT with thin to thick beds of very loose silty sand |
| Z2_OWF_B04 | 0.5 | 3.0 | 2.5 | Low to medium shear strength sandy SILT |
| Z2_OWF_B05A | 0.7 | 4.7 | 4.0 | Low to medium shear strength sandy SILT |
| Z2_OWF_B11 | 0.8 | 5.0 | 4.2 | Low to medium shear strength sandy SILT with thin beds of loose silty sand |
| Z2_OWF_B11 | 5.5 | 11.5 | 6.0 | Low to medium shear strength sandy CLAY with thin to thick beds of loose to medium dense silty sand |
| Z2_OWF_B13a | 1.1 | 4.1 | 3.0 | Low to medium shear strength sandy SILT |
| Z2_OWF_B13a | 11.2 | 12.4 | 1.2 | Medium shear strength sandy SILT with thin to thick beds of loose to medium dense silty sand |

 Table 22 SILT2 locations, depths and detailed soil description.

Indicative geotechnical parameters for SILT2 are presented in the table below.

| SILT2 | | | | | | Submerged unit weight (kN/m3) | | | Co sista | ne tip ance (N | re- /IPa) | Plasticity In- dex (%) | | |
|-----------------------------|----------------------------|------------------------------------|------------------------------------|------------------------------|------------------------------|-------------------------------------|---------------|------|-------------|------------------------------|--------------|---------------------------|-------|-----|
| min- Top depth (m) | Max Top depth (m) | min Bot- tom Depth (m) | Max Bot- tom Depth (m) | Min Thick- ness (m) | Max Thick- ness (m) | LE | BE | HE | LE | BE | HE | LE | BE | HE |
| | | | | | | 7.0 | 7.5 | 8.5 | 0.5 | 1.0 | 2.0 | 5 | 7 | 10 |
| 0.5 | 11.2 | 3.0 | 12.4 | 2.5 | 6.0 | Wate | er Con (%) | tent | Ur shea | ndraine ar strei (kPa) | ed ngth | E | 50 (% |) |
| | | | | | | LE | BE | HE | LE | BE | HE | LE | BE | HE |
| | | | | | | 10 | 25 | 40 | 20 | 40 | 80 | 1.5 | 2 | 3.5 |

Table 23 Geotechnical parameters for SILT2.

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10.2. SAND

The SAND unit is further divided into two sub-units SAND1 and SAND2 based on the relative density as detailed below.

10.2.1. SAND1

The SAND1 unit is locally present in the majority of the investigated locations, generally consisting of medium dense to dense silty SAND, locally with thin to thick beds of low to medium, locally high, shear strength sandy clay.

Geotechnical locations, detailed soil description and top and bottom depths associated with SAND1 unit are presented in table below.

| Location ID | Top (m) | Bottom (m) | Thick- ness (m) | Description SAND1 |
|-------------|------------|---------------|--------------------|--|
| Z2_OWF_B01 | 0.9 | 1.7 | 0.8 | Medium dense to dense silty SAND with thin beds of low shear strength clay |
| Z2_OWF_B03A | 5.1 | 7.9 | 2.8 | Medium dense to dense silty SAND with thin beds of medium to high shear strength clay |
| Z2_OWF_B04 | 3.0 | 3.5 | 0.5 | Medium dense to dense silty SAND |
| Z2_OWF_B07 | 0.8 | 9.5 | 8.7 | Medium dense to dense silty SAND with thin to thick beds of medium to high, locally vey high, shear strength sandy clay |
| Z2_OWF_B09 | 0.8 | 6.1 | 5.3 | Medium dense to dense silty SAND |
| Z2_OWF_B09 | 6.1 | 15.5 | 9.4 | Medium dense to dense SAND, locally very dense with thin to thick beds of low to medium, locally high, shear strength sandy clay |
| Z2_OWF_B09 | 17.5 | 19.3 | 1.8 | Medium dense to dense silty SAND |
| Z2_OWF_B11 | 5.0 | 5.5 | 0.5 | Medium dense SAND |
| Z2_OWF_B13a | 4.1 | 5.5 | 1.4 | Medium dense to dense SAND with thick beds of medium strength clay |
| Z2_OWF_B13a | 9.0 | 11.2 | 2.2 | Medium dense to dense silty SAND with thin to thick beds of medium shear strength sandy clay |
| Z2_OWF_B13a | 12.4 | 13.1 | 0.7 | Loose to medium dense SAND with thin to thick beds of medium shear strength sandy clay |

Table 24 SAND1 locations, depths and detailed soil description.

Indicative geotechnical parameters for SAND1 are presented in table below:

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 Table 25 Geotechnical parameters for SAND1.

| SAND 1 | | | | | Submerged unit weight (kN/m3) | | | Co s | Cone tip re- sistance (MPa) | | Relative Den- sity (%) | | | Friction angle (ºdeg) | | | |
|----------------------------|----------------------------|------------------------------------|------------------------------------|------------------------------|-------------------------------------|----------|-----|---------|-----------------------------------|----|------------------------------|----|----|--------------------------|----|----|----|
| Min Top depth (m) | Max Top depth (m) | Min Bot- tom Depth (m) | Max Bot- tom Depth (m) | Min Thick- ness (m) | Max Thick- ness (m) | LE BE HE | | | LE | BE | HE | LE | BE | HE | LE | BE | HE |
| 0.9 | 17.5 | 1.7 | 19.3 | 0.8 | 9.4 | 9 | 9.5 | 10 | 5 | 10 | 30 | 30 | 50 | 70 | 30 | 32 | 35 |

10.2.2. SAND2

The SAND2 unit is generally consisting of dense to very dense slightly gravelly silty SAND Geotechnical locations, detailed soil description and top and bottom depths associated with SAND2 unit are presented in table below.

 Table 26 SAND2 locations, depths and detailed soil description.

| Location ID | Top (m) | Bottom (m) | Thickness (m) | Description SAND2 |
|-------------|---------|------------|---------------|--|
| Z2_OWF_B01 | 1.7 | 15.2 | 13.5 | Dense to very dense slightly gravelly silty SAND |
| Z2_OWF_B13a | 5.5 | 9.0 | 3.5 | Dense to very dense SAND |
| Z2_OWF_B13a | 13.1 | 13.7 | 0.6 | Dense silty SAND |
| Z2_OWF_B13a | 17.0 | 19.0 | 2.0 | Dense silty SAND |
| Z2_OWF_B13a | 20.2 | 21.3 | 1.1 | Dense silty SAND |

Indicative geotechnical parameters for SAND2 are presented in table below.

 Table 27 Geotechnical parameters for SAND2.

| SAND 2 | | | | | Submerged unit weight (kN/m3) | | | Cone tip re- sistance (MPa) | | Relative Den- sity (%) | | | Friction angle (ºdeg) | | | | |
|----------------------------|----------------------------|------------------------------------|------------------------------------|------------------------------|-------------------------------------|-----|----|-----------------------------------|----|------------------------------|----|----|--------------------------|-----|----|----|----|
| Min Top depth (m) | Max Top depth (m) | Min Bot- tom Depth (m) | Max Bot- tom Depth (m) | Min Thick- ness (m) | Max Thick- ness (m) | LE | BE | E HE LE E | | BE | HE | LE | BE | HE | LE | BE | HE |
| 1.7 | 20.2 | 9.0 | 21.3 | 0.6 | 13.5 | 9.5 | 10 | 10.5 | 25 | 35 | 40 | 80 | 90 | 100 | 32 | 35 | 37 |

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10.3. CLAY

CLAY was found in two subunits of different strengths CLAY1 and CLAY2. Due to a similar seismic response, the distinction within the different units is not possible using the UHRS dataset.

10.3.1. CLAY1

CLAY1 unit consists of medium to high shear strength intermediate plasticity silty CLAY, locally sandy, locally with thin and thick beds of loose to medium dense silty sand

Geotechnical locations, detailed soil description and top and bottom depths associated with CLAY1 are indicated in table below.

| Location ID | Top (m) | Bottom (m) | Thickness (m) | Description CLAY1 |
|-------------|------------|---------------|------------------|--|
| Z2_OWF_B01 | 15.2 | 18.6 | 3.4 | Medium to high shear strength sandy CLAY with thick beds of medium dense silty sand |
| Z2_OWF_B01 | 18.6 | 22.8 | 4.2 | Medium to high shear strength silty CLAY |
| Z2_OWF_B03A | 7.9 | 20.0 | 12.1 | Medium to high shear strength silty CLAY |
| Z2_OWF_B04 | 3.5 | 10.6 | 26.5 | Medium to high shear strength silty CLAY |
| Z2_OWF_B05A | 4.7 | 11.9 | 25.1 | Medium to high shear strength silty CLAY |
| Z2_OWF_B07 | 9.5 | 11.9 | 2.4 | Medium to high shear strength silty CLAY |
| Z2_OWF_B09 | 15.5 | 17.5 | 2.0 | Medium to high shear strength sandy CLAY with thin to thick beds of very loose to loose silty sand |
| Z2_OWF_B09 | 19.3 | 29.8 | 10.5 | Medium to high shear strength silty CLAY |
| Z2_OWF_B11 | 11.5 | 13.8 | 2.3 | Medium to high shear strength sandy CLAY with thin to thick beds of loose to medium dense silty sand |
| Z2_OWF_B11 | 13.8 | 19.0 | 5.2 | Medium to high shear strength sandy CLAY with sand partings |
| Z2_OWF_B11 | 19.0 | 20.7 | 1.7 | Medium shear strength CLAY |
| Z2_OWF_B11 | 20.7 | 24.5 | 3.8 | Medium to high shear strength silty CLAY |
| Z2_OWF_B13a | 13.7 | 17.0 | 3.3 | Medium to high shear strength sandy CLAY with partings of loose sand |
| Z2_OWF_B13a | 19.0 | 20.2 | 1.2 | Medium to high shear strength sandy CLAY |
| Z2_OWF_B13a | 21.3 | 24.1 | 2.8 | Medium to high strength sandy CLAY |

Table 28 CLAY1 locations, depths and detailed soil description.

Indicative geotechnical parameters for CLAY1 are presented in table below.

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| CLAY1 | | | | | Submerged unit weight (kN/m3) | | | Cone tip re- sistance (MPa) | | | Plasticity Index (%) | | | |
|-----------------------------|----------------------------|-------------------------------|-------------------------------|------------------------------|-------------------------------------|------|--------------|--------------------------------|---------------|----|-------------------------|-----|----|-----|
| min- Top depth (m) | Max Top depth (m) | min Bottom Depth (m) | Max Bottom Depth (m) | Min Thick- ness (m) | Max Thick- ness (m) | LE | BE | HE | LE | BE | HE | LE | BE | HE |
| | 3.5 21.3 11.9 26.5 | | | 8.5 | 9.0 | 9.5 | 1.0 | 2.0 | 2.5 | 15 | 20 | 25 | | |
| 3.5 | | 1.2 26.5 | 26.5 | Wat | er Con (%) | tent | Undr stre | ained s ngth (F | shear (Pa) | E | 50 (% |) | | |
| | | | | | | LE | BE | HE | LE | BE | HE | LE | BE | HE |
| | | | | | | 25 | 27 | 30 | 60 | 70 | 90 | 1.5 | 2 | 2.5 |

Table 29 Geotechnical parameters for CLAY1

10.3.1. CLAY2

CLAY2 unit consists of high shear strength silty CLAY, locally sandy, locally with thin and thick beds of loose to medium dense silty sand

The table below indicates geotechnical locations, detailed soil descriptions, and top and bottom depths associated with CLAY2.

| Location ID | Top (m) | Bottom (m) | Thickness (m) | Description CLAY2 |
|-------------|------------|---------------|------------------|---|
| Z2_OWF_B01 | 22.8 | 30.0 | 7.2 | High shear strength slightly silty CLAY |
| Z2_OWF_B03A | 20.0 | 29.6 | 9.6 | High shear strength silty CLAY |
| Z2_OWF_B04 | 10.6 | 30.0 | 19.4 | High shear strength silty CLAY |
| Z2_OWF_B05A | 11.9 | 29.8 | 17.9 | High shear strength silty CLAY |
| Z2_OWF_B07 | 11.9 | 29.8 | 17.9 | High shear strength silty CLAY |
| Z2_OWF_B11 | 24.5 | 27.6 | 3.1 | High to very high shear strength sandy CLAY with thin to thick beds of loose to medium dense silty sand |
| Z2_OWF_B11 | 27.6 | 29.0 | 1.4 | High to very high shear strength sandy CLAY |
| Z2_OWF_B11 | 29.0 | 29.8 | 0.8 | High to very high shear strength silty CLAY |
| Z2_OWF_B13a | 24.1 | 29.8 | 5.7 | High shear strength silty CLAY with thin to thick beds of loose silty sand |

Table 30 CLAY2 locations, depths and detailed soil description.

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Indicative geotechnical parameters for CALY2 are presented in the table below.

| CLAY2 | | | | | Submerged unit weight (kN/m3) | | | Cone tip re- sistance (MPa) | | | Plasticity Index (%) | | | |
|-----------------------------|----------------------------|-------------------------------|-------------------------------|------------------------------|-------------------------------------|-----|---------------|--------------------------------|--------------|---------------------|-------------------------|-----|--------|-----|
| min- Top depth (m) | Max Top depth (m) | min Bottom Depth (m) | Max Bottom Depth (m) | Min Thick- ness (m) | Max Thick- ness (m) | LE | BE | HE | LE | BE | HE | LE | BE | HE |
| | 10.6 27.6 | 27.6 | 30.0 | 0.8 | 19.4 | 9 | 9.5 | 10 | 1.5 | 2.5 | 3.5 | n/a | n/a | n/a |
| 10.6 | | | | | | Wat | er Con (%) | itent | Undi stre | ained s angth (l | shear kPa) | | Ξ50 (% |) |
| | | | | | | LE | BE | HE | LE | BE | HE | LE | BE | HE |
| | | | | | | n/a | n/a | n/a | 70 | 90 | 140 | n/a | n/a | n/a |

Table 31 Geotechnical parameters for CLAY2

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11.LOCATION SPECIFIC GEOTECHNICAL PARAMETERS

The geotechnical results acquired from both offshore and onshore lab testing, and CPT have been analysed as part of the integration work and consolidated into the following sections. Table 32 below presents a summary of the correlation established among geotechnical and sesimo stratigraphic units applicable in proximity of the geotechnical locations.

Table 32. Seismo-stratigraphic, geological and geotechnical units of the AO6 OWF area.

SS. U.: Seismo-stratigraphic Unit; U.S: Upper Surface; L.S: Lower surface; RGT. U: Regional Geotechnical Unit; G. U: Geotechnical Unit.

| Ge | ophysi | cs | | Geolo | ogy - Re | gional Geotechnics | Geotechnics |
|-----|---------------|------|------------|----------------|----------------|---|----------------------------------|
| SSU | U.S. | L.S. | RGT.U. | U.S. | L.S. | Description | Geotechnical Units |
| 1 | Seabed | H03 | RGT Unit 1 | Seabed | Top RGT Unit 2 | Sandy, clayey SILT Extremely low shear strength. | SILT 1 |
| 1 | Н03 | HO5 | RGT Unit 2 | Top RGT Unit 2 | Top RGT Unit 2 | Where GT Unit 2 is thick (CPT 09) interbedded SAND and CLAY elsewhere is sandy SILT Shear strengths are low to moder- ate | SILT 2, SAND 1 |
| 2 | H05 | H20 | RGT Unit 3 | Top RGT Unit 3 | Top RGT Unit 4 | Sandy CLAY Low to moderate shear strength | SILT 2, SAND 1, SAND 2, CLAY1 |
| 3 | H03, H05, H20 | Н30 | RGT Unit 4 | Top RGT Unit 4 | Top RGT Unit 5 | Silty CLAY | SILT 2, SAND 1, SAND 2, CLAY1 |
| 4 | H30 | H40 | RGT Unit 5 | Top RGT Unit 5 | H40 | CLAY prone Moderate to high shear strength | CLAY1 |

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| Ge | Geophysics | | s Geology | | ogy - Re | Geotechnics | |
|-----|------------|------|--------------|---------------|----------|---|--------------------|
| SSU | U.S. | L.S. | RGT.U. | U.S. | L.S. | Description | Geotechnical Units |
| 5 | H35 | H38 | RGT Unit 5.1 | H35 | H38 | Very Dens SAND | SAND2 |
| 4 | H38 | H40 | RGT Unit 5 | op RGT Unit 5 | H40 | CLAY prone Moderate to high shear strength | CLAY2 |
| 6 | H40 | | - | - | - | | |

Due to the complex geological settings and limitation of the geophysical data discussed herein, soil types (based on ground-truthed horizons) can be extrapolated within a 500 m radius of the geotechnical locations in line with APPENDIX III – INTEGRATED CHARTS.

Detailed logs for all the combined CPT, PC and VC locations are presented in the Geotechnical factual report (Report Ref. 9) and are included in the APPENDIX IV – COMBINED CPT-VC-PC LOGS.

Geotechnical units and parameters' estimates (derived from CPT data and lab testing) and presented in section 10 for each of the 7 subunits may only be valid within approximately 100 m radius of the geotechnical locations.

The complete set of geotechnical parameters presented in the geotechnical plots consists of:

- Submerged unit weight (kN/m³);
- Moisture content (%);
- Plasticity index (%);
- CPT qc (MPa), Porewater pressure u₂ (MPa);
- Relative density (%) derived from CPT for noncohesive units;

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- Effective peak Friction angle Phi'(^o) and cohesion c' (kPa), derived from shear box tests/CID tests and CPT.
- Undrained shear stress strength (kPa) for fine-grained cohesive soils (CPT derived parameter with Nkt of 15 & 20) and CIU and UU triaxial tests
- Strain at 50% strength (E50, %) derived from CIU and UU.
- Chemical properties as Carbonate content (%) and Water-soluble sulphide and Chloride content (mg/l).

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11.1. LOCATION Z2_OWF_B01



Figure 11-1 qc, u2, relative density, Su, E50, Phi' and c' for Z2_OWF_B01.

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11.2. LOCATION Z2_OWF_B03A



Figure 11-3 qc, u2, relative density, Su, E50, Phi' and c' for Z2_OWF_B03A.

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Figure 11-4 Submerged unit weight, moisture content and Carbonate content for location Z2_OWF_B03A.

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Figure 11-5 Friction ratio for Z2_OWF_B03A.

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Figure 11-6 Plasticity for Z2_OWF_B03A.

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Figure 11-7 Sensitivity for Z2_OWF_B03A.

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11.3. LOCATION Z2_OWF_B04



Figure 11-8 qc, u2, relative density, Su, E50, Phi' and c' for Z2_OWF_B04.

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Figure 11-9 Friction ratio for Z2_OWF_B04.

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11.4. LOCATION Z2_OWF_B05A



Figure 11-10 qc, u2, relative density, Su, E50, Phi' and c' for Z2_OWF_B05A.

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Figure 11-11 Friction ratio for Z2_OWF_B05A.

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Figure 11-12 Submerged unit weight, moisture content and Carbonate content for Z2_OWF_B05A.

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Figure 11-13 Plasticity Z2_OWF_B05A.

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Figure 11-14 Sensitivity for Z2_OWF_B05A.

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11.5. LOCATION Z2_OWF_B07



Figure 11-15 qc, u2, relative density, Su, E50, Phi' and c' for Z2_OWF_B07.

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SILT 2 SAND 1 SILT 1 CLAY 2

SAND 2 CLAY 1

Figure 11-16 Friction ratio for Z2_OWF_B07.

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11.6. LOCATION Z2_OWF_B09



Figure 11-17 qc, u2, relative density, Su, E50, Phi' and c' for Z2_OWF_B09.

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Figure 11-18 Friction ratio Z2_OWF_B09.

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Figure 11-19 Submerged unit weight, moisture content and Carbonate content for Z2_OWF_B09.

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11.7. LOCATION Z2_OWF_B11



Figure 11-20 qc, u2, relative density, Su, E50, Phi' and c' for Z2_OWF_B11.

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Figure 11-22 Submerged unit weight, moisture content and Carbonate content for Z2_OWF_B11.

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Figure 11-23 Sensitivity for Z2_OWF_B11.

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11.8. LOCATION Z2_OWF_B13a



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Location-specific summary log SILT 2 SAND 1 SILT 1 CLAY 2 SAND 2 CLAY 1

Figure 11-25 Friction ratio for Z2_OWF_B13a.

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Figure 11-26 Submerged unit weight, moisture content and Carbonate content for Z2_OWF_B13a.

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Figure 11-27 Plasticity for Z2_OWF_B13a.

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Figure 11-28 Sensitivity for Z2_OWF_B13a.

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12.CHARTS

The integration of geophysical and geotechnical data is summarized in three groups of charts:

- 1) North-Up Charts: A total of eight (8) charts with a north-up view in DIN A1 scaled as 1:35,000 of the entire AO6 OWF Zone 2 area (Table 33).
- 2) UHRS regional profiles: A set of six (6) ultra-high resolution seismic regional profiles that cover the AO6 OWF Zone 2 area in four (4) charts (Table 34).
- Integrated charts on geotechnical locations: A total of eight (8) charts centred on the geotechnical locations that cover an area of 500 x 500 m and are scaled 1:5,000 horizontal (Table 35).

North-up charts are provided in APPENDIX I, UHRS regional profiles in APPENDIX II, and Integrated charts in APPENDIX III.

| North-Up Chart # | Contents |
|------------------|------------------------------------|
| Chart 1 | Bathymetric model |
| Chart 2 | Slope model |
| Chart 3 | SSS & MBES Backscatter mosaics |
| Chart 4 | Seabed features and classification |
| Chart 5 | Top RGT Unit 2 depth BSB |
| Chart 6 | Top RGT Unit 3 depth BSB |
| Chart 7 | Top RGT Unit 4 depth BSB |
| Chart 8 | Top RGT Unit 5 depth BSB |

Table 33 North-up charts for the AO6 OWF area.

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 Table 34 UHRS Regional profile charts for the AO6 OWF Zone 2 area.

| Regional profile Chart # | Contents |
|--------------------------|------------------------|
| Chart 1 | MED_OWF_Z2_017_and_009 |
| Chart 2 | MED_OWF_Z2_003_and_014 |
| Chart 3 | MED_OWF_Z2_022 |
| Chart 4 | MED_OWF_Z2_026 |

 Table 35 Integrated charts produced for the AO6 OWF Zone 2 area.

| Integrated Chart # | Contents |
|--------------------|----------------------|
| Chart 1 | LOCATION Z2_OWF_B01 |
| Chart 2 | LOCATION Z2_OWF_B03A |
| Chart 3 | LOCATION Z2_OWF_B04 |
| Chart 4 | LOCATION Z2_OWF_B05A |
| Chart 5 | LOCATION Z2_OWF_B07 |
| Chart 6 | LOCATION Z2_OWF_B09 |
| Chart 7 | LOCATION Z2_OWF_B11 |
| Chart 8 | LOCATION Z2_OWF_B13a |

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13. LIMITATIONS ON USE OF THIS REPORT

This integration report presents the deliverables in accordance with the scope of service contracted by the Client. The purpose of the investigation and any deviations, such as final geophysical line plans and final geotechnical locations coordinates and depths, as well as the extent of the laboratory testing program, was instructed, monitored and agreed by the Client. This was a significant factor in determining the scope and level of the information available for the integration work.

This integration report is based on the geophysical and geotechnical factual data and limitations as referenced herein and acknowledged by the Client prior to the integration work.

Due to the lateral variability associated with the encountered ground conditions, the geotechnical parameters estimate provided in are deemed suitable for preliminary foundation sizing in close proximity or generally up to 100 m radius from the geotechnical locations. Ground conditions and soil type distribution, based on ground-truthed horizons, can be extrapolated with caution up to 500 m radius in line with APPENDIX III – INTEGRATED CHARTS.

Charts in APPENDIX II – UHRS REGIONAL PROFILES are provided for a general overview at the regional scale. Due to the UHRS line spacing and distance among the geotechnical locations, these shall be used with caution.

Within the stated limitations, no liability is accepted concerning the provided interpretation and parameters, should ground conditions vary more than is visible in the available dataset (i.e., changes in the derived strength and density, depth and thickness of the derived units, presence of undetected boulders, etc.).

The end user of this report shall consider the limitations reported in this document and its references prior to selecting any information and/or parameter as basis of design under their own responsibility.

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14. CONCLUSIONS AND RECOMMENDATIONS

This report presents integrated geotechnical units with parameters and seabed conditions for the AO6-Z2 OWF area based on the datasets, methods and limitations presented herein.

Prospective wind farm developers may perform concept-level analyses after reviewing and validating the selected information to ensure it fits their purpose. Notwithstanding the aforementioned limitations, the information provided can be used with confidence for preliminary suction anchor, driven anchor piles, or drag embedment anchor foundation design for floating offshore wind turbines subject to the OWF layout considered. Moreover, the provided information may be further integrated with additional datasets and used in the detailed design phases.

Emphasis and attentive review of geophysical data interpretation with the stated limitation is recommended to evaluate soil conditions distant from the investigated geotechnical locations.

Considering the site extension and laterally variable ground conditions with potential buried channel incisions, additional geophysical acquisition with closely spaced (i.e. 25 m line spacing) 2D UHRS lines may be considered in correspondence of final turbine locations and/or geotechnical locations. Additional MBES, SSS and SBP infill lines may be acquired to further enhance the data set and better inform seabed mapping, smaller ($0.3 \times 0.3 \times 0.3 m$) contacts picking, geohazards evaluation, seabed mobility and scour assessments.

The use of advanced geotechnical pile design methodologies would require more specific lab testing to measure soil-steel friction in sands and silts and measure strength anisotropy in clays. Due to the anticipated cyclic load of the OWF turbines geotechnical cyclic testing may also be required for detailed design.

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APPENDIX I – NORTH-UP CHARTS











| | | PROJECT TITLE: MED_AG6 ZONE 2 AREA OFFSHORE WINDEARM GEOPHYSICAL AND GEOTONICAL MED_AG6 MED_AG6 | 64 | 1000 + | |
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APPENDIX II – UHRS REGIONAL PROFILES





er mic PROJECT TITLE: AREA: CHART: Geophysical Survey MED A06 OWF Area MED 1 of 4 CHART TITLE: REFERENCE: SCALE: Indicated in charts



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APPENDIX III – INTEGRATED CHARTS



| OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION | MED_AO6 OWF Zone 2 | 1 / 8 |
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| CHART TITLE: | DATE: | SCALE: |
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| | CHART TITLE: | DATE: | SCALE: |
| | GEOPHYSICAL AND GEOTECHNICAL DATA FOR BOREHOLE B03A | August 2024 | 1:6500 DIN A1 1:13000 DIN A3 |







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| | CHART TITLE: | DATE: | SCALE: |
| | GEOPHYSICAL AND GEOTECHNICAL DATA FOR BOREHOLE B04 | August 2024 | 1:6500 DIN A1 1:13000 DIN A3 |



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APPENDIX IV – COMBINED CPT-VC-PC LOGS

| F | DEPTH DEPTH | ft | SOIL PROFILE | SAMPLE NO | | СРТ | SOIL DESCRIPTION | - | ▲ To ▼ Po ▲ To ▼ Po ■ CII ■ Es | vane_O cket Per vane_O cket Per JC Triax from C from C | nshore hetrometer_C ffshore hetrometer_C al :PT:N _{kt} =15 :PT:N _{kt} =20 | Dinshore O Diffshore O Offshore | UU_O UU_O Motor Fall C Fall C | nshore Nane_Onshore Vane_Onshore One One Remoulded | Rem. | SUBI UNIT (k | MERGI WEIG KN/m ³) | ED iHT | | ela t. from Oist Plas Liqu Mois | tive CPT F CPT F CUTE tic Limi id Limit sture C | der K ₀ =0.5 | nsity and K₀ª | / (%) 11 (%) |
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| | | | × | | | | 0,0m Extremely low shear strength clayey SILT | | | 10 | 80 | 1: | 20 | 160 | | 5 | 10 1 | 5 | 1 | 5 30 |) 45 | 60 | 75 9 | 90 105 |
| | 1- | - | * * * × * × × * × × * × × * × × * × × | | | | becoming very low to low shear strength sandy silt below 0.75m 0,9m Dense silty SAND loose down to 1.08m | | 2 | | | | | | | | | | - V | 25 | | | | |
| | - | -4 | × · · · · · · · · · · · · · · · · · · · | | | | 1,6m Low shear strength sandy CLAY | | | | | | - | | | | | | | | | | | |
| | 2- | - 8 | | | | | dense down to 2.20m | | | | | | | | | | | | | | | | | 2 |
| | 3- | - | | | | | | | | | | | | | | | | | | | | | | |
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| | 6- | -20 | | | | | | | | | | | | | | | | | | | | | | |
| | 7- | _ | | | | | dense to very dense between 6.72m - 7.23m | | | | | | | | | | | | | _ | | | | |
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| | 8- | - | | | W | | | | | | | | | | | | | | | | | _ | -(| |
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| F | | | | | ╡ | | | 1,7m Very dense slightly gravelly SAND | \square | | .0 | 8 | 0 | 120 | 160 | | | 5 1 | 0 15 | 15 3 | 30 4 | 5 60 | /5 9 | <u>90 105</u> |
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| | 13- | | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | | | | | | | |
| | - | 44 | | | | | | 13,3m Medium shear strength sandy CLAY | - | | | | | | | | | | | | | 1 | ŕ | |
| | - | | · · · · · · · · · · · · · · · · · · · | | | | | 13,4m Very dense gravelly SAND | | | | | | | | | | | | | | | | |
| | 4 | | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 14,2m Dense to very dense slightly gravelly | | | | | | | | | | | | | | | 5 | |
| | | 48 | · · · · · · · · · · · · · · · · · · · | | | | | SAND | | | | | | | | | | | | | | _< | | |
| | | | · · · · · · · · · · · · · · · · · · · | | | | | loose to medium dense below 14.95m | | | | | | | | | | | | | | | 5 | |
| | 15- | | · · · · · · · · | | | | CPT | | | | | | | | | | | | | | | | | |
| | _ | | | | | | | 15,2m Medium to high shear strength sandy CLAY interbedded with medium dense silty SAND | | | | | 2 | | | | | | | | | | _ | |
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| | 18- | | | | | | | 18,0m Medium to high shear strength sandy CLAY | | | | N V | 4 | | | | | | | | | | | |
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| | | | | | | | | 18,6m Medium to high shear strength slightly sandy CLAY | | | | \sim | 5 | > | | | | | | | | | | |
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| | 23 | | | | | 22,8m High shear strength slightly sandy CLAY | | | | ~ | } } | | | | | | | | | | | | |
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| - 124 | 4 | | | | | | | | | | | | | | | | | | | | | |
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| 39 - 128 | 8 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | _ | | | | | | | | | |
| | COMBINED CPT/VC LOG | | | | | | | | Alpha | Value | | 0.8 | Da | te Pe | rform | ned | 06/0 | 5/2023 | ; | | | |
| Z2_OWF_B01_CPT | | | | | | | | | MIN | STÈRE | | | Wa Co | ater D ordin | vepth | 1 | -95, E 6' | 10 m Z | H 34m·ľ | N 47F | 9227 7 | '4m |
| MED-TEC_A06 | | | | | | | | | DE L ÉCO Liberté | A TRAN | ISITION JE | J | Ma | ide B | y/Da | te | sc | - 14/11 | /2023 | | | |
| | | | | | | | | | Egalité Fraterniu | të | | | Ch | ecke | d By/ | /Date | AN | - 17/11 | /2023 | | | _ |
| | | | | | | 0 | TECNO | | NTE | Co | ne Ni | umbe | er | S10 | CFIIP.{ | 32260 | 2/0 |)1 | | | | |

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| | DEPTH | ft | SOIL PROFILE | SAMPLE NO | | СРТ | SOIL DESCRIPTION | | Torv Poc Torv Poc CIU – Est. – Est. | rane_Onshore ket Penetrometer rane_Offshore ket Penetrometer C Triaxal from CPT:Nk=15 from CPT:Nk=20 NDRAINED S | _Onshore _Offshore | UU_0 UU_0 Hotor Motor Fall Co Fall Co Fall Co TRENG | nshore nshore Rem. Vane_Onshore Vane_Onshore one Remoulded TH (kPa) | Rem. | SUBN UNIT (ki | IERGED WEIGHT √m³) | Re Est. Mo | from CF istur Plastic I Liquid L Moisture | Ye dei PT K₀=0.5 Te coi Limit imit a Content | nsity (' and K ₀ =1 ntent (| %) %) |
|--------|-------|------|---|-----------|--|-----|--|---------|---|--|-----------------------------------|---|---|------|---------------------|--------------------------|------------------|---|---|--|----------|
| _ | | - | x · · x · · x · · x · · x · · x · · x · · x · · x · · x · · x · · x · · x · · x · · x · · · x · | | | | 0,0m Extremely low to very low shear strength slightly sandy clayey SILT | | 4 | | | 120 | 160 | | 5 | • | | 30 × | 45 60 × | 75 90 | 105 |
| | 1- | -4 | · · · · · · · · · · · · · · · · · · · | | | | | | | , | | | | | | • | 256 | • | | | |
| | 2- | - | | | | | becoming medium shear strength below 1.85m | | \sum | | | | | | | • | , , , , | × × | | | |
| | - | -8 | × × × × | VC | | | 2,0m Very loose silty SAND 2,2m Very low to low shear strength slightly clayey sandy SILT | | • | | | | | | | 8 | 3 | * | | | |
| | 3- | - | × × × × × × × × × × × × × × × × × × × | | | | 2,7m Extremely low to very low shear strength slightly clayey SILT | | | | | | | | | | | × | | | |
| | - | - 12 | * * × × * * × × * × × | | | | | ₽+{ | | | | | | | | • | , | × < | | | |
| | 4- | - | × × × × × × × × × × × × × × × × × × × | | | | 4,4m Very loose to loose silty SAND with partings of low to medium shear strength | | | 2 | 2 | _ | | | • | • | X | > | | | |
| | 5- | - 16 | × · · · × · · · · · · · · · · · · · · · | | | СРТ | 5,1m Dense slightly silty SAND | | | < | | | | | | | | | | | |
| | _ | - | | | | | | | | | | | | | | • | × | : | | | |
| | 6- | - 20 | | | | | 6,1m Medium to high shear strength clayey SILT interbedded with loose to medium dense, locally dense, silty SAND | - | | | | | | | • | • | × | | | | |
| | 7- | -24 | | | | | | | | 0 | | | | | | • | × | × | | | |
| | 8- | - | × × × × × × × × × × × × × × × × × × × | | | | 7,9m Medium to high shear strength sandy SILT | - | | | W/W/ | | | | • | • | × | | | | |
| | 9- | -28 | × × × × × × × × × × × × × × × × × × × | | | | | | | | | λ γ γ | | | | | | | | | |
| | - | - 32 | | | | | | | | | | Л <u>,</u> Л | | | | | | | | | |
| ┝ | | | , , , , , , , , , , , , , , , , , , , | | | | | | | | | | | | e Porf | | 30/04 | /2022 | | | |
| ┢ | | | | | | | | | | | | | 0.0 | Wa | ater De | oth | -108,9 | 99 m 2 | ZH | | \neg |
| | | | | | | | Z2_OWF_B03A_CPT | | | | MIN | NISTÈRE LA TRANS | SITION | Co | ordinat | es | E 634 | 504,8 | 4m; N 4 | 765192,2 | 27m |
| biente | | | | | | | Offshore Gulf de Lyon | | | | ÉCO Libert Egalit Frater | DLOGIQU | E | Ma | de By/I | Date | SC - 7 | 14/11/ | 2023 | | |
| noamt | | | | | | | DGEC | | | | | TEONO | | Ch | ecked | By/Date | AN - ′ | 17/11/ | 2023 | | |
| Tec | | | | | | | | | | | | TEGNU | | Co | ne Nun | nber | S10C | FIIP.S | 22598 / | 001 | |

| ЕРТН | Ш | E NO | | _ | | | Torvane_Onshore Pocket Penetrometer_C Torvane_Offshore Pocket Penetrometer_C CILIC Triaval | Onshore C H Offshore G | UU_Ons UU_Ons Motor V Motor V Fall Cor | shore shore Rem. 'ane_Onshore 'ane_Onshore | Rem. | SUB | MER | GED | Re Est. | elativ | ve d pr k₀= | ens D.5 and | ity (%) ™₀=1 |
|------------|---|-------|-----|----|---|---|--|------------------------------|--|---|------|--------|----------------|-----------------------|-------------------|-----------------------------|-------------------------------------|----------------|-----------------|
| m ft | SOI | SAMPL | C I | 5 | SOIL DESCRIPTION | _ | Est. from CPT:N₄=15 Est. from CPT:N₄=20 UNDRAINED SH | HEAR ST | Fall Cor | Here Remoulded | | UNII | kN/m | GН1 ³) | Mc ° • × | Plastic Liquid Moistu | Limit Limit Limit re Conte | ont | ent (%) |
| | × · × · × · × · × · × · × · × · × · × · | | | | 7,9m Medium to high shear strength sandy SILT | | 40 80 | $\frac{1}{2}$ | 20 | 160 | | 5 | 10 | 15 | 15 | 30 | 45 6 | 0 75 | 90 105 |
| - | ·X · X · X · X · X · X · X · X · X · X · | | | | (continued) | | | $\left\{ \right\}$ | | | | | | | | | | | |
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| 1136 | | | | | | | | 3 | | | | | | | | | | | |
| | × × × × · × · × · × · × · × · | | | | | | | $\sum_{i=1}^{n}$ | | | | | | | | | | | |
| - | × .× .×. × .× .×. × .× .×. | | | | | | | | > | | | | | | | | | | |
| | | | | | | | | | \$ | | | | | | | | | | |
| 12 | | | | | | | | \sim | 5 | | | | | | | | | | |
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| 13 - | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | | | | | | | <u>}</u> | | | | | | | | _ | | | |
| | × × × × × | | | | | | | Ş | | | | | | | | | | | |
| - 44 | × · × · × · × · · · × · | | | | | | | 3 | | | | | | | | | | | |
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| -48 | | | | | | | | $\sum_{i=1}^{n}$ | | | | | | | | | | | |
| 15 - | × [*] × [*] × * × * * • × * * | | CF | PT | | | | 5 | | | - | | | | | | | | |
| | × · × ·× · · × · × · × · · × · × · × · · × · × | | | | | | | $\sum_{i=1}^{n}$ | | | | | | | | | | | |
| | × × × × × × × × × × × × × × × × × × × | | | | | | | 5 | | | | | | | | | | | |
| -52 16- | × .× . ×. × .× .× . × .× .× .× × .× .× .× | | | | | | | \$ | | | | | | | | | | | |
| | | | | | | | | $\sum_{i=1}^{n}$ | | | | | | | | | | | |
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| 17-56 | × × × × × × × × × × × × | | | | | | | $\left\langle \right\rangle$ | | | | | | | | | | | |
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| 18 - | × · × · × · ·× · × · × · × ·× · × · | | | | | | | ^ | | | | | | | | | | | |
| - 60 | | | | | | | | 3 | | | | | | | | | | | |
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| 19- | × × × × | | | | | | | \sum | | | | | | | | | | | |
| | | | | | | | | $\left \right $ | 5 | | | | | | | | | | |
| -64 | | | | | | | | الج | | | | | _ | | | _ | | | |
| | × · × ·× · ×. × · · × · × ·× · × · × ·× | | | | | | | \leq | | | | | | | | | | | |
| | [<u>``×, </u> | | | C | OMBINED CPT/VC LOG | | | > Alpha | Value | 0.8 | Dat | e Pei | rforme | ed | 30/04 | 1/202; | 3 | | |
| | | | | | Z2 OWF B03A CPT | | | 2 | | | Wa | iter D | epth | | -108, | 99 m | ZH | | |
| | | | | | MED-TEC_A06 | | | MINI DE L ÉCOL | STÈRE A TRANSI LOGIQUE | TION | Coo | ordina | ates //Date | • | E 634 SC - | 1504,8 14/11 | 84m; i /2023 | N 476 | 5192,27m |
| | Offshore Gulf de Lyon DGEC | | | | | | | Égalité Fraternit | ł | | Che | ecked | d By/D | Date | AN - | 17/11 | /2023 | | |
| | | | | | | | | 0 | TECNOA | MBIENTE | Cor | ne Nu | umber | | S100 | ;FIIP.; | S2259 | 8 / 00 | 1 |

| - | н | ĒĒ | NO | | | | | Torvane_Onshore Pocket Penetrometer_ Torvane_Offshore Pocket Penetrometer_ | _Onshore Offshore | UU_Or UU_Or Motor | nshore nshore Rem. Vane_Onshore Vane_Onshore | Rem. | SUBN | /IERG | ED | Rel Est. fr | ativ om CP | е de т к₀=0.ŧ | nsit | y (%) ₅=1 |
|------|---|--|--------|----|-----|---|---|---|---|---|---|------|-------------|---------------|-------|----------------|-------------------------------------|-------------------------------|-------------------|--------------|
| m | ft | SOIL | AMPLE | | CPT | SOIL DESCRIPTION | = | CIUC Triaxal Est. from CPT:N_{xt}=15 Est. from CPT:N_{xt}=20 UNDRAINED S | HFAR ST | Fall Co | one one Remoulded "H (kPa) | | UNIT (kl | WEIG N/m³) | ίΗТ | | stur astic Li quid Lir | e co imit nit Conton | nte | nt (%) |
| - | _ | × · × · × · | ν Γ | ╂┌ | | 7.9m Medium to high shear strength sandy SILT | | | | 20 | <u>160</u> | | 5 | 10 1 | 5 | 15 | 30 4 | 5 60 | 75 | 90 105 |
| | | × × × × × × × × × × × × | | | | (continued) | | | | | | | | | | | | | | |
| | | | | | | | | | | | | - | | | | | | | | |
| | - 68 | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | | | | | | | 56 | 5 | | | | | | | | | | |
| 21- | - | × × × × × × × × × × × × × × × × × × × | | | | | | | $\langle \rangle$ | | | | | | | | | | | |
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| - | | × ^ × ^ × × × × × × × × × | | | | | | | $\left\{ \right\}$ | | | | | | | | | | | |
| | -72 | × · × ·× · ×· × · × · × ·× | | | | | | | } \ | | | | | | | | | | | |
| 22- | | × × × × × × × × | | | | | | | $\frac{1}{2}$ | > | | | | | | | | | | |
| | | × × × × × × × × × × × × × × × × × × × | | | | | | | \sum_{i} | \geq | | | | | | | | | | |
| | - | × × × × × × × × × × | | | | | | | $\left\{ \right\}$ | | | | | | | | | | | |
| 23- | - | × * × * * • × • × • × • × × * | | | | | | { | $\lfloor $ | | | | | | | | | | | |
| | -76 | × × × × × × × × × | | | | | | | } | 3 | | | | | | | | | | |
| | | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | | | | | | <u>,</u> | } | 3 | | | | | | | | | | |
| | - | | | | | | | |) | | | | | | | | | | | |
| 24 - | - | · x · x · x × · x · x · x · x · x | | | | | | | } | \mathbf{z} | | _ | | | | | | | | |
| | - 80 | × × × × × × × × × × × × × × × × × × × | | | | | | | $\left \right $ | ¥ | | | | | | | | | | |
| - | | * ^ · × ^ · × · ·× · × · ·× · × · × · | | | | | | | | ` } | | | | | | | | | | |
| | | × × × ×. × × × × × × × | | | CPT | | | | $\left\{ \right\}$ | | | | | | | | | | | |
| 25- | - | × × × · × × × · × × × | | | | | | | 3 | 8 | | | | | | | | | | |
| | | | | | | | | | $\left\{ \right $ | $\left\{ \right. \right\}$ | | | | | | | | | | |
| | -84 × × × × × × × × × × × × × × × × × × × | | | | | | | | $\left\{ \right\}$ | | | | | | | | | | | |
| 26 - | | × . × . ×. × . × . × × . × . × | | | | | | | 5 | Ş | | | | | | | | | | |
| | - | × × × × × × · × × × | | | | | | | \mathcal{T} | \mathbf{Z} | | | | | | | | | | |
| | - | · × · × · · · · · · · · · · · · · · · · | | | | | | | \sum | 5 | | | | | | | | | | |
| | - 88 | × × × × × | | | | | | | ζ | ξ | | | | | | | | | | |
| 27 - | - | × `. × . ×. × . × . × . × . × . × . | | | | | | | - | $\left \left\langle \cdot\right\rangle \right $ | | _ | | | | | | <u> </u> | | |
| | | × × × × × × × × · × × × | | | | | | | | | | | | | | | | | | |
| | - | × · × · × · · × · × · × · · × · × · × | | | | | | | | 5 | | | | | | | | | | |
| | | x · x · x · x · x · x · x · x · x · x · | | | | | | | 3 | | 3 | | | | | | | | | |
| 28 - | -92 | × · × · × · × · × · × · ×. × · × · × · ×. | | | | | | | | \leq | > | | | | | | | | | |
| | | × ^ × ^ × · × × × × · × × × | | | | | | | 5 | 5 | | | | | | | | | | |
| | 1 | × · · × · ·× · × · × · × · · × · × · × | | | | | | | \sum | 2 | | | | | | | | | | |
| 20- | | × × × × × × × × × | | | | | | | | $\left \right\rangle$ | | | | | | | | | | |
| 20 | -96 | · · · · · · · · · · · · · · · · · · · | | | | | | | | | > | | | | | | | | | |
| | | × × × × × | | | | | | | \sum | | | | | | | | | \square | | |
| | | · ×· × · | | ┞ | | | 1 | | | | | | | | | | | | | |
| | - | | | | | Final Depth 29.63m. Depth ended due to Target | | | Alml | Value | | Date | Port | orme | | 30/04/ | 2022 | | | |
| | | | | | Ľ | | | | Aipria | vaiue | 0.0 | Wate | er De | pth | · | -108,9 | 9 m Z | н | | |
| | | | | | | Z2_OWF_B03A_CP1 MED-TEC_A06 | | | MIN DE L | STÈRE A TRANS | TION | Coor | rdinat | es | | E 6345 | i04,84 | ۱m; N | 4765 ⁻ | 92,27m |
| | | | | | | Offshore Gulf de Lyon | | | ECO Liberté Égalité Fraternin | LUGIQUE | 2 | Mad | e By/ | Date | ite I | SC - 1 | 4/11/2 | :023 | | |
| | | | | | | DGEC | | | 0 | TECNOA | | Cone | e Nur | nber | | S10CF | IIP.S | 22598 | / 001 | |
| | DEPTH | | OIL | PLE NO | | PT | SOIL DESCRIPTION | | To Po To Po Cl Es | orvane_O ocket Per orvane_O ocket Per UC Triax st. from C | nshore hetromet ffshore hetromet al PT:N _{kt} =1 | er_Onst er_Offst | ● L hore O L + M hore ⊕ M ◆ F | JU_Onsho JU_Onsho Motor Van Motor Van Fall Cone Fall Cone F | re re Rem. e_Onshor e_Onshor Remoulde | e e Rem. d | SUBM UNIT V | erged Veight | Rel Est. fr | ativ om CP stur | е d тк₀=(те с | ensi | ty (' ĸ₌₁ | %) |
|---------|-------|-------------------------------|---|--------|--|----|---|---|----------------------------------|--|--|---------------------|---|--|---|------------------|----------------|--------------------|---------------------------|---|------------------------------|---------------------|--------------|----------|
| 1 | n | ft | S PR(| SAMF | | 0 | | _ | — Es | | | SHEA | AR STRE | NGTH (| kPa) | | (kN | l/m ³) | O PI ● Li × M 15 | astic Li quid Lir oisture 30 4 | imit nit Conte 45 6 | nt 0 75 | 90 | , 105 |
| | _ | - 100 | | | | | Depth reached Approx. Settlement 0.50m. Final PC Depth 3.38m. Final VC Depth 4.58m. | | | | | | | | | | | | | | | | | |
| ; | 31 | | | | | | | | | | | | | | | | | | | | | | | |
| | - | - 104 | | | | | | | | | | | | | | | | | | | | | | |
| | 52- | | | | | | | | | | | | | | | | | | | | | | | |
| : | 3- | - 108 | | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | | | |
| ; | 34 - | - 112 | | | | | | | | | | | | | | | | | | | | _ | | |
| | _ | | | | | | | | | | | | | | | | | | | | | | | |
| ; | 85 - | | | | | | | | | | | | | | | | | | | | | | | |
| | - | - 116 | | | | | | | | | | | | | | | | | | | | | | |
| ; | 86 - | | | | | | | | | | | | | | | | | | | | | | | |
| | - | - 120 | | | | | | | | | | | | | | | | | | | | | | |
| | 87 - | | | | | | | | | | | | | | | | | | | | | | | |
| : | - 88 | - 124 | | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | | | |
| ; | 89 - | - 128 | | | | | | | | | | | | | | | | | | | | + | | |
| | - | | | | | | | | | | | | | | | | | | | | | _ | | |
| ┝ | | | | | | (| COMBINED CPT/VC LOG | | | | | A | lpha Val | lue | 0.8 | Da | ate Perfo | rmed | 30/04/2 | 2023 | | | | |
| F | | | | | | | | | | | | Τ | | | | W | /ater Dep | th | -108,99 | 9 m Z | ЭH | | | |
| e | | | Z2_OWF_B03A_CPT MED-TEC_A06 Offshore Gulf de Lyon | | | | | | | MINISTÈ DE LA TI ÉCOLOG | RE RANSITIO | ло | Co | | S | E 6345 | 504,84 | 1m; N | 1 4765 | 192,2 | ?7m | | | |
| mbient | | Offshore Gulf de Lyon DGEC | | | | | | | Liberté Égalité Fraternité | | | | aue By/D hecked R | vale sy/Date | AN - 1 | +/11/2 7/11/2 | 2023 | | | | | | | |
| Tecnoal | | | | | | | DGEC | | | | | | C TE | CNOAMB | IENTE | C | one Num | ber | S10CF | IIP.S2 | 2259 | 8 / 00 [,] | | |

| - | m ft | SOIL PROFILE | SAMPLE NO | | СРТ | SOIL DESCRIPTION | | Torva Pocka Torva Pocka CIUC – Est. f – Est. f | ane_On et Pene ane_Off et Pene Triaxa rom CF rom CF | Ishore etromete fshore etromete PT:N _{kt} =1 PT:N _{kt} =2 | er_Onshol er_Offsho 15 20 SHEAF | ● UU ● O UU + Moi ● Fall ◆ Fall ◆ Fall | Onshore Onshore or Vane_o or Vane_ Cone Cone Res GTH (kF | Rem. Onshore Onshore moulded Pa) | Rem. | SUBM UNIT \ (kt | IERGED WEIGHT W/m ³) | F ■ N | Rela ist. from lois Pla Liqu Mo | ative m CPT sture uid Lim uid Lim | e der K ₀ =0.5 E COI mit nit Content | nsity and K ₀ = nten | (%) t (%) |
|-------|------------------|--|-----------|-----|----------|---|---|--|---|--|---|---|--|--|------|-----------------------|--|-------------|--|---|--|---------------------------------------|--------------|
| | | ××× ××× ××××_ | | | | 0,0m Extremely low shear strength slightly sandy clayey SILT | | 40 | | 8 | 0 | 120 | 16 | 50 | | 5 | | | | 0 45 | 5 60 | /5 8 | 0 105 |
| | 1 | x x x x x x x x x x x x x x x x x x x | | | | 0,5m Extremely low to very low shear strength clayey SILT sandy silt between 0.50m - 0.55m | | 5 | | | | | | | | | | | | | | | |
| | 28 | × × × × × * * × × × * × × × × × × × × × × × × × × | | | | | | | | | | | | | | | | | | | _ | | |
| | 3 | × × × × × × × × × × × × × × × × × × × | | | | 2,7m Very low to medium shear strength sandy SILT3,1m Dense silty SAND | | | ~ | V | - | | | | | | | | | | | | |
| | - - 12 4 - | | | | | 3,4m Medium shear strength slightly sandy CLAY | | | ~ | | | - | | | | | | - | | | - | | |
| | _ | | | | | | | | | > | | | | | | | | | | | _ | | |
| | - 16 5 - | | | | CPT | | | | | \sim | > | | | | | | | | | | | | |
| | 6 | | | | | 5,6m Medium to high shear strength slightly sandy CLAY | - | | | | } | | | | | | | | | | _ | | |
| | _ | | | | | sandy between 6.30m - 6.80m | | | | | | | | | | | | | | | | | |
| | 7 | | | | | | | | | Two the | | | | | | | | | | | | | |
| | 8- | | | V | | | | | | | | | | | | | | | | | _ | | |
| | -28 | | | | | | | | < | | | | | | | | | | | | | | |
| | 9 | | | | | | | | | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | | > | | | | | | | | | + | | |
| | -32 | | | | | | | | | 5 | | 2 | | | | | | | | | | | |
| ╞ | | | | | <u> </u> | UNIBINED CP1/VC LOG | | | | | | ma Value | * | U.8 | Dat | ter Do | ormed | 06 | 10.90 | J23 | | | |
| | | | | | | Z2_OWF_B04_CPT | | | | | | s 📕 1inistèri | E | | Co | ordinate | es | -11 E (| ອ,80 3351§ | -111 ∠⊦ | ' m; N 4 | 76196 | 8,41m |
| inte | | | | | | MED-TEC_A06 | | | | | | DE LA TRA COLOGIC | | N | Ma | de By/[| Date | sc | 2 - 14 | /11/20 | 023 | | , |
| ambie | | | | | | DGFC. | | | | | 1 | sane raternité | | | Ch | ecked E | By/Date | AN | J - 17 / | /11/20 | 023 | | |
| Tecno | | | | | _ | | | | | | | TECN | OAMBIE A TRADEBE | NTE | Co | ne Nurr | nber | S1 | 0CFI | IP.S2 | 2602 / | 001 | |
| · L | 1134013 | 341Z2_OW | F_B04 | _CF | PT Log | g - Rev2.pdf | | | | | | | | | • | | | - | | | | | |

| DEPTH m ft | SOIL PROFILE | SAMPLE NO | СРТ | SOIL DESCRIPTION | Torvane_Onshore Pocket Penetrometer Torvane_Offshore Pocket Penetrometer ClUC Triaxal Est. from CPT:Nk=15 Est. from CPT:Nk=20 UNDRAINED S | Onshore O UU → Moto Offshore ⊕ Moto ← Fall 0 HEAR STRENG | Onshore Onshore Rem. or Vane_Onshore Cone Cone Remoulded | Rem. SUBMER UNIT WE (kN/n | RGED EIGHT n ³) | Relativ Est. from Cl Moistul Plastic I Avisual Moistur 15 30 | /e dens $T K_0=0.5$ and re contect Limit C = C = C + C + C + C + C + C + C + C + | ity (%) ⊮₀=1 ent (%) |
|-----------------|-----------------|-----------|-----|---|---|--|--|---------------------------------|-----------------------------------|--|--|----------------------------|
| - | | | | 5,6m Medium to high shear strength slightly sandy CLAY <i>(continued)</i> | | | | | | | | |
| - 11 36 | | | | 10,6m High shear strength slightly sandy CLAY | | Marth | | | | | | |
| 12- | | | | sandy between 11.90m - 16.55m | | | | | | | | |
| - 40 | | | | | | | > | | | | | |
| 13- -44 | | | | | | | > | | | | | |
| 14 –_ | | | | | | | > | | | | | |
| -48 15- - | | | СРТ | | | | > | | | | | |
| - 52 | | | | | | | > | | | | | |
| | | | | | | | > | | | | | |
| 17 | | | | | | | > | | | | | |
| 18 - 60 | | | | | | | | | | | | |
| 19 – | | | | | | | | | | | | |
| 64 | | | | COMBINED CPT/VC LOG | | Alpha Value | 0.8 | Date Perform | ned | 06/05/2023 | | |
| | | | | | | | | Water Depth | l | -119,80 m 2 | ZH | |
| υ | | | | MED-TEC A06 | | MINISTÈRE DE LA TRAN ÉCOLOGIO | | Coordinates | | E 635190,6 | 7m; N 476 | 1968,41m |
| mbient | | | | Offshore Gulf de Lyon | | Liberté Égalité Fraternité | | Viade By/Dat | ie /Date | SC - 14/11/ AN - 17/11/ | /2023 | |
| Tecnoa | | | | DGEC | | C TECNO | AMBIENTE | Cone Numbe | ər | S10CFIIP.S | \$22602 / 00 | 1 |

| F | DEPTH | SOIL | MPLE NO | СРТ | SOIL DESCRIPTION | A Torvane_Onshore Pocket Penetrometer_(Torvane_Offshore Pocket Penetrometer_(ClUC Triaxal Est. from CPT:N _x =15 Est. from CPT:N _x =20 | UU_Onshore Onshore UU_Onshore Rem. Hotor Vane_Onshore Offshore Motor Vane_Onshore I Fall Cone Fall Cone Remoulded | Rem. SUBMERGED UNIT WEIGHT (kN/m ³) | Relative density (%) Est. from CPT Kg=0.5 and Kg=1 Moisture content (%) Plastic Limit |
|---------|--------------|-----------|---------|---------|--|---|--|---|--|
| | m n | | S₽ | | | UNDRAINED SH 40 80 | HEAR STRENGTH (kPa) | 5 10 15 | × Moisture Content 15 30 45 60 75 90 105 |
| | - | | | | 10,6m High shear strength slightly sandy CLAY <i>(continued)</i> | | | | |
| | 21 - | | | | | | | | |
| | - | | | | | | $\left\{ \begin{array}{c} \\ \\ \\ \\ \\ \end{array} \right\}$ | | |
| | 2272 | | | | | | | | |
| | - | | | | | | | | |
| | 23 - - 76 | | | | | { | | | |
| | - | | | | | | | | |
| | 24 - | | | | | | | | |
| | | | | | | | | | |
| | 25— | | | СРТ | | | | | |
| | - 84 | 4 | | | | | | | |
| | 26 - | | | | | | | | |
| | 27-88 | | | | | | | | |
| | - | | | | | | | | |
| | 2892 | | | 14 | | | | | |
| | | | | | | | | | |
| | 29 - | | | | | | And the second s | | |
| | - 96 | | | | | | | | |
| | F | | | | | | $ \boldsymbol{\varsigma} \boldsymbol{\varsigma} $ | | |
| ľ | 1 | | | (| COMBINED CPT/VC LOG | | Alpha Value 0.8 | Date Performed | 06/05/2023 |
| | | | | | Z2 OWF B04 CPT | | | Water Depth | -119,80 m ZH |
| te | | | | | MED-TEC_A06 | | MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE | Coordinates | E 635190,67m; N 4761968,41m |
| mbient | | | | | Offshore Gulf de Lyon | | Liberté Égalité Fraternité | Checked By/Date | AN - 17/11/2023 |
| Fecnoal | | | | | DGEC | | | Cone Number | S10CFIIP.S22602 / 001 |
| - L | 113401 | 1341Z2_OW | F_B04 | _CPT Lo | g - Rev2.pdf | | in Linearcan SUMPRAT | | |

| | DEPTH | i i i | OILE | PLE NO | | PT | | SOIL DESCRIPTION | To Po To Po CIU | vane_Or ket Pen vane_Of ket Pen JC Triaxa . from C | nshore etromete fshore etromete al PT:N _{kt} =1 | er_Onst er_Offst | ● UI hore O UI + M hore ⊕ M ◆ Fa ◇ Fa | J_Onshore J_Onshore otor Vane otor Vane otor Vane III Cone | e Rem. _Onshore _Onshore | e e Rem. d | SUBMI UNIT V | Erged /Eight | Rel Est. fr Moi | ativ | е d тк₀=(те с | ensi | ty (' ĸ₌₁ | %) (%) |
|---------|----------------------|-------------|----------|--------|--|----|---|---|-----------------------------|---|---|---------------------|--|---|-----------------------------------|------------------|-----------------|-------------------|--------------------------|--|------------------------------|------------|--------------|-----------|
| | m | ft | S PR(| SAMF | | 0 | | | — Esi | JNDR4 | | SHEA | AR STREN | NGTH (k 1 | Pa) | | (kN | /m ³) | 0 P ● Li × M 15 | lastic Li iquid Lir loisture 30 4 | imit nit Conte 45 6 | nt 0 75 | 90 | 105 |
| | - | - 100 | | | | | | Final Depth 30.0m. Depth ended due to Target Depth reached Approx. Settlement 0.81m | | | | | | | | | | | | | | | | |
| | 31 - | - | | | | | | | | | | | | | | | | | | | | | | |
| | 32- | - 104 | | | | | | | | | | | | | | | | | | | | | | |
| | - | - | | | | | | | | | | | | | | | | | | | | | | |
| | 33 - | - 108 | | | | | | | | | | | | | | | | | | | | | | |
| | 34 - | - | | | | | | | | | | | | | | | | | | | | | | |
| | _ | - 112 | | | | | | | | | | | | | | | | | | | | | | |
| | 35 - | - | | | | | | | | | | | | | | | | | | | | | | |
| | _ | - 116 | | | | | | | | | | | | | | | | | | | | | | |
| | 36 - | - | | | | | | | | | | | | | | | | | | | | | | |
| | 37 – | - 120 | | | | | | | | | | | | | | | | | | | | | | |
| | _ | - | | | | | | | | | | | | | | | | | | | | | | |
| | 38 - | - 124 | | | | | | | | | | | | | | | | | | | | | | |
| | | - | | | | | | | | | | | | | | | | | | | | | | |
| | 39 - - | - 128 | | | | | | | | | | | | | | | | | | | | | | |
| | | - | | | | | C | | | | | Δ | lipha Valu | IE | 0.8 | Da | ate Perfo | rmed | 06/05/2 | 2023 | | | | |
| F | | | | | | | | | | | | \top | | ! | | W | ater Dep | th | -119,8 | 0 m Z | :Н | | | |
| ۵ | | | | | | | | MED-TEC A06 | | | | | MINISTÈR DE LA TR ÉCOLOGI | RE ANSITIO QUE | N | Co | oordinate | s | E 6351 | 190,67 | 7m; N | 4761 | 968,4 | 11m |
| mbient | | | | | | | | Offshore Gulf de Lyon | | | | | Liberté Égalité Fraternité | | | M C | ade By/D | ate v/Date | SC - 1 | 4/11/2 7/11/: | 2023 | | | |
| Tecnoar | | | | | | | | DGEC | | | | | C TEC | | | C | one Num | ber | S10CF | -IIP.S | 2260 | 2 / 00′ | | |

| | DFPTH | j j ft | SOIL | SAMPLE NO | СРТ | SOIL DESCRIPTION | | Tor Poc Tor Poc CIU – Est. – Est. | vane_Onshore ket Penetrom vane_Offshore ket Penetrom C Triaxal from CPT:N _{st} from CPT:N _{st} | eter_Onsh eter_Offsh =15 =20 D SHEA | ● UU ore 0 UU + Mot ore ⊕ Mot • Fall ◇ Fall | Onshore Onshore Rem. or Vane_Onshor or Vane_Onshor Cone Remoulded GTH (kPa) | e e Rem. d | SU UN | BMER IT WE (kN/m | RGED IGHT I ³) | | From C pistu Plastic Liquid I Moistur | /e de PT K₀=0. re cc Limit .imit re Conter | ensit | y (%) ₀=1 ∩t (%) |
|--------|-------|--------------|--|-----------|-----|---|----------------|---|--|---|--|--|------------------|----------|------------------------|----------------------------------|-------|---|---|-------|------------------------|
| | | | × | | | 0,0m Extremely low shear strength slightly sandy clayey SILT | | 4 | 0 | 80 | 120 | 160 | | Ę | 5 10 | 15 | 15 | 30 | 45 60 | 75 | 90 105 |
| | 1- | _ | × × × × × × × × × × × × × × × × × × × | | | 0,7m Very low to low shear strength sandy SILT | | | • | | | | | | | | | ×× | | | |
| | _ | -4 | × × × × × × | | | 1,2m Low shear strength slightly sandy clayey SILT | | | | | | | | | • | | | →ו × | | | |
| | 2- | _ | × × × × × × × × × × × × × × × × × × × | | | 2,0m Medium shear strength slightly sandy clayey SILT | | | | | | | | | • | | | × | | | |
| | 2_ | -8 | × × × × × × × × × × × × × × × × × × × | VC | | | | } | | | • | | | | • | | | →×● × × × | | | |
| | - | - | × × × × × × × × × × | | | | ▲ ◇◆ | | | | | | | | • | | | > × − | • | | |
| | 4- | - 12 | × × × × × × × × | | | | ⊕+ | { | | | | | | | | | | | | | |
| | _ | - 16 | $\begin{array}{c c} x & x \\ x & x$ | | | 4,7m Medium to high shear strength sandy | - | | | | | | | | • | | | <u>*</u> | | | |
| | 5- | _ | · · · · · · · · · · · · · · · · · · · | | CPT | | | • | | | | | | | • | | | * | | | |
| | 6- | -20 | | | | | | 0-1 | | | > | | | | • | | | ≫ ★ | • | | |
| | _ | _ | x x x x x x x x x x x x x x x x x x x | | | 6,4m Medium to high shear strength clayey SILT | - | | | | > | | | | • | | | | | _ | |
| | 7- | -24 | * | | | | | 0 | | | | | | | • | | | <u>×</u> | | | |
| | 8- | _ | x x x x x x x x x x | | | | | | | | | | | | • | | Ċ | ≫ ≷ | • | | |
| | - | -28 | × × × × × × × × × × × × × × | | | | | | | | <u>}</u> | | | | | | | | | | |
| | 9- | _ | × × × × × × × × × × × × × × | | | | | | | | ~ | | | | | | | _ | | + | |
| | - | - 32 | × × × × × × × × × × × × × × × × × × × | | | | | | | | > | | | | | | | | | | |
| ŀ | | | × ×× | | () | COMBINED CPT/VC LOG | | | | | Ipha Value | 0.8 | | ate P | erform | ed | 03/05 | 5/2023 | , , | | |
| | _ | _ | _ | _ | _ | Z2 OWF B05A CPT | _ | _ | _ | | | | W | /ater | Depth | | -125, | 57 m | ZH | | |
| e | | | | | | MED-TEC_A06 | | | | | MINISTÈRE DE LA TRA ÉCOLOGIO | NSITION UE | C | oordii | | | E 630 |)077,4 | 7m; N | 47601 | 96,74m |
| mbient | | | | | | Offshore Gulf de Lyon | | | | | Liberté Égalité Fraternité | | м С | hecke | ed Bv/r | - Date | AN - | 17/11 | 2023 /2023 | | |
| Tecnoa | | | | | | DGEC | | | | | C TECN | OAMBIENTE | С | one N | lumbe | r | S10C | FIIP. | 322602 | / 001 | |

| | m ft | SOIL PROFILE | SAMPLE NO | СРТ | SOIL DESCRIPTION | Torvane_Onshore Pocket Penetrometer_O Ocket Penetrometer_O CIUC Triaxal Est. from CPT:N _x =15 UNDRAINED SH | UU_Onshore UU_Onshore R H Motor Vane_Or Motor Vane_Or Motor Vane_Or Fall Cone Fall Cone Remo IEAR STRENGTH (kPa | em. shore shore Ren ulded) | n. SUBMER UNIT WE (KN/m | RGED EIGHT n ³) | R Es M • | elativ t. from Cf Oistu Plastic Liquid L Moistur 5 30 | PT K₀=0 PT K₀=0 I re C I Limit Imit re Conte | | y (%) ⁼¹ nt (%) |
|---------|--------|---|-----------|---------|---|---|---|---|-------------------------------|-----------------------------------|-------------------|---|--|-----------------------|----------------------------------|
| Ī | | × — × — × × _ × _ × _ × _ × _ × | | | 6,4m Medium to high shear strength clayey SILT <i>(continued)</i> | | } | | | | | | | | |
| | - | ^ _ ~ ~ _ ~ × _ ~ ~ ~ ~ * _ ~ ~ ~ ~ | | | | | | | | | | | _ | | |
| | | × × × × × × × × × × × × × × | | | | | | | | | | | | | |
| | 1136 | $\begin{array}{c} \times & - \times \\ - & \times \\ - & \times \\ - & \times \end{array}$ | | | | | | | | | | | | | |
| | - | ××× ×× ×× | | | | | \sum | | | | | | _ | | |
| | | * ^ * ^ * * * * * * * * * * * * | | | | | $\left\{ \left \right \right $ | | | | | | | | |
| | 1240 | × _ × _ × _ × _ × _ × _ × _ × _ × _ × | | | 11,9m High shear strength clayey SILT | | 3 | | | | | | | | |
| | | × × × × * * × × * * × × | | | | | <pre>}</pre> | | | | | | | | |
| | - | × × × × × | | | | | \sim | | | | | | | | |
| | 13 - | × × × × | | | | | | | | | | | | | |
| | 44 | × ^ × × × × × × × × × × × × × × × × × × | | | | | | | | | | | | | |
| | | × × × × × × × × × × × × | | | | | | | | | | | | | |
| | 14 - | $\begin{array}{c} \times & \times & \times \\ \times & \times & \times \\ \times & \times & \times \\ \times & \times &$ | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | -48 | * * × × * * × × × × × × | | | | | 3 | | | | | | | | |
| | 15- | $\begin{array}{c} \widehat{} & \widehat{} & \widehat{} \\ x & \widehat{} & \widehat{} & \widehat{} \end{array}$ | | СРТ | | | | | | | | | | | |
| | | × _ × _ × _ × _ × _ × _ × _ × _ × _ × _ | | | | | < | | | | | | | | |
| | -52 | × × × × * * × × * * × × | | | | | | | | | | | | | |
| | 16 - | × × × × × × × × × × | | | | | 5 5 | | | | | | | | |
| | - | × × × × | | | | | \sum | | | | | | | | |
| | | × _ × _ × × × × × × * * × | | | | | \$ \$ | | | | | | | | |
| | 1756 | × × × × × × × × × × × × | | | | | } | | | | | | | | |
| | | $\begin{array}{c} x & x \\ x \\$ | | | | | | | | | | | | | |
| | - | ××× ××× ××× | | | | | $\left \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$ | | | | | | | | |
| | 18- | × × × × × × × × × × × | | | | | | | | | | | | | |
| | - 60 | $\begin{array}{c} & & & & & \\ & \times & \times & \times & \\ & & & \times & \times$ | | | | | | | | | | | | | |
| | | | | | | | $\langle \langle \rangle $ | | | | | | | | |
| | 19- | × × × × × × × × × * × × | | | | | | | | | | | + | | |
| | - 64 | | | | | | | | | | | | | | |
| | | $\begin{array}{c} \times & \times & \times \\ \times & \times & \times \\ \times & \times & \times \\ \times & \times &$ | | | | | | | | | | | | | |
| ┢ | | <u>×_</u> ×_×_ | | | COMBINED CPT/VC LOG | | Alpha Value |).8 [| Date Perform | ned | 03/0 |)5/2023 | 3 | | |
| ſ | | | | | Z2_OWF_B05A_CPT | | | \ | Water Depth | 1 | -12 | 5,57 m 2 | ZH | 17604 | 06 74~ |
| ente | | | | | MED-TEC_A06 | | MINISTERE DE LA TRANSITION ÉCOLOGIQUE Liberti Agalité | | Vade By/Dat | te | ⊏ o | - 14/11 | /2023 | 1001 م ، ب | əo,74M |
| noambi€ | | | | | DGEC | | | | Checked By/ | /Date | AN | - 17/11/ | /2023 | | |
| Tec | 113401 | 341Z2_OW | F_B05/ | A_CPT L | og - Rev2.pdf | | | | Cone Numbe | er | S10 | CFIIP.S | 322602 | 2 / 001 | |

| | DEPTH | SOIL | MPLE NO | СРТ | SOIL DESCRIPTION | Torvane_Onshore Pocket Penetromete Torvane_Offshore Pocket Penetromete ClUC Triaxal Est. from CPT:N _x =1: Est. from CPT:N _x =20 | er_Onshore UU_Onshore Rem. + Motor Vane_Onshore Rem. r_Offshore ⊕ Motor Vane_Onshore ● Fall Cone Remoulded 0 | Rem. SUBMERGED UNIT WEIGHT (kN/m ³) | Relative density (%) Est. from CPT K ₀ =0.5 and K ₀ =1 Moisture content (%) • Plastic Limit • Limit |
|--------|--------------------|---|---------|---------|--|---|--|---|---|
| ļ | m f | | SA | L | | UNDRAINED S 40 80 | SHEAR STRENGTH (kPa) | 5 10 15 | X Moisture Content 15 30 45 60 75 90 105 |
| | - | | | | 11,9m High shear strength clayey SILT <i>(continued)</i> | | | | |
| | 21-68 | 8 × × × × × × × × × × × × × × × × × × × | | | | | | | |
| | - | ××× ××× ××_×× ××_×_× | | | | | | | |
| | 2272 | | | | | | | | |
| | - | | | | | | | | |
| | 23 | * | | | | | | | |
| | | | | | | | | | |
| | 24 - | * * * * * * * * * * * * * * * * * * * | | | | | | | |
| | 80 | | | | | | | | |
| | 25- | × × × × × * * × × × × × × × × × × | | CPT | | | | | |
| | - 84 | $4 \xrightarrow{\times} \times $ | | | | | | | |
| | 26 - | × × × × × × × × × × × × × × × × × × × | | | | | | | |
| | - | $\begin{array}{c} \times & \times & \times \\ \times & \times & \times & \times \\ \times & \times & \times &$ | | | | | | | |
| | 27 - | 8 × × × × × × × × × × × × × × × × × × × | | | | | | | |
| | - | | | | | | | | |
| | 2892 | 2 × × × × - × × × × × × × × × × × × × × × | | | | | | | |
| | - | $\begin{array}{c} \begin{array}{c} & \end{array}{} \\ \times \end{array} \\ \times \\ \times$ | | | | | | | |
| | 29- | - × × - × × × × - × - × - × - × | | | | | | | |
| | | × × × × × × × × × × × × × × × | | | | | | | |
| ļ | - | <u>x</u> -x - | | | | | | | |
| ╞ | | | | 0 | COMBINED CPT/VC LOG | | Alpha Value 0.8 | Date Performed | 03/05/2023 |
| | | | | | Z2_OWF_B05A_CPT | | | Water Depth | -125,57 m ZH |
| lte | | | | | MED-TEC_A06 | | MINISTERE DE LA TRANSITION ÉCOLOGIQUE | Made By/Date | SC - 14/11/2023 |
| umbier | | | | | Offshore Gulf de Lyon | | Egalité Fraternité | Checked By/Date | AN - 17/11/2023 |
| ecnoa | | | | | DGEC | | | Cone Number | S10CFIIP.S22602 / 001 |
| - L | 11340 ⁻ | 1341Z2_OW | F_B05 | A_CPT L | og - Rev2.pdf | | n i noravak kultifikki | | |

| | DЕРТН | FILE PILE | E NO | | _ | | | Tor Poo Tor Poo CIL | vane_Ons ket Penet vane_Offs ket Penet IC Triaxal | hore rometer hore rometer | r_Onshore r_Offshore | UU_C UU_C UU_C Hoto Moto Fall C | Onshore Onshore r Vane_ r Vane_ Cone | Rem. Onshore Onshore | e e Rem. | SUBME UNIT W | ERGED /EIGHT | Rela | ative | e d€ `κ₀=0. | 5 and K | y (%) |
|----------|-------------------|---|-------|--|---|--|---|---------------------------------|---|---|-------------------------|---|--|----------------------------|-------------|-----------------|-------------------|--------------------------------|--|-------------------------------------|---------|--------|
| m | n ft | PROI | SAMPI | | 5 | SOIL DESCRIPTION | - | – Est – Est | JNDRAI | 1:N _{kt} =15 T:N _{kt} =20 NED S |) SHEAR : | STRENG | one Re TH (kF | Pa) | 1 | (kN/ | /m ³) | ● Pla ● Liq × Mo 15 3 | STUFE astic Lir juid Lim bisture (30 45 |) CC nit it Conter 5 60 | | nt (%) |
| | 100 |) | | | | Final Depth 29.83m. Depth ended due to Target Depth reached Approx. Settlement 0.66m. Final PC Depth 2.86m. Final VC Depth 5.10m. | | | | | | | | | | | | | | _ | | |
| 3 | 1- | | | | | | | | | | | | | | | | | | | | | |
| | - 104 | 1 | | | | | | | | | | | | | | | | | | | | |
| 32 | 2- | | | | | | | | | | | | | | | | | | | | | |
| | - 108 | 3 | | | | | | | | | | | | | | | | | | | | |
| 3: | 3- | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| 34 | 4 - - 112 | 2 | | | | | | | | | | | | | | | | | | | | |
| 0 | _ | | | | | | | | | | | | | | | | | | | | | |
| 3: | - 116 | 5 | | | | | | | | | | | | | | | | | | | | |
| 36 | 6- | | | | | | | | | | | | | | | | | | | | | |
| | - 120 |) | | | | | | | | | | | | | | | | | | | | |
| 3 | 7- | | | | | | | | | | | | | | | | | | | | | |
| 38 | - - 124 3 - | 24 | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | _ | | |
| 39 | 9 128 | 3 | | | | | | | | | | | | | | | | | | + | | |
| | - | | | | | | | | | | | | | | | | | | | + | | |
| \vdash | | | | | C | OMBINED CPT/VC LOG | | | | | Alph | ha Value | | 0.8 | Da | te Perfor | med | 03/05/2 | 023 | | | |
| | | | | | | 72 OWE BOSA OPT | | | | | _ | | | | W | ater Dept | 'n | -125,57 | ′m Zŀ | 1 | | |
| Φ | | Z2_OWF_B05A_CPT MED-TEC_A06 Offshore Gulf de Lyon | | | | | | | MI | NISTÈRE LA TRAN | | N | Co | ordinates | 5 | E 6300 | 77,47 | m; N | 47601 | 96,74m | | |
| nbient | | Offshore Gulf de Lyon DGEC | | | | | | Libe Égai Frat | rté lité ernité | | | Ma | ade By/Da | ate v/Date | SC - 14 | /11/20 | J23 | | | | | |
| Tecnoal | | | | | | DGEC | | | | | ¢ | TECNO | | | Co | one Numb | per | S10CF | IIP.S2 | 2602 | / 001 | |

| | DFPTH DFPTH | ft | SOIL PROFILE | SAMPLE NO | СРТ | SOIL DESCRIPTION | | Tor Poc Tor Poc CIU Est Est | vane_Or ket Pene vane_Of ket Pene C Triaxa from Cl from Cl | nshore etromete fshore etromete l PT:N _{kt} =1 PT:N _{kt} =2 | er_Onshore 5 0 SHEAR S | UU_(UU_(Hoto Moto Fall (Fall (| Onshore Dnshore F r Vane_C r Vane_C Cone Cone Rem | Rem. Onshore Onshore F noulded a) | Rem. | SUBN UNIT (k | /IERGE WEIGH N/m³) | D | Relativ Est. from C Moistu o Plastic Liquid I × Moistu | ✓e dei PT K₀=0.5 re coi Limit .imit re Content | nsity and K ₀ = nten | r (%) 1 t (%) |
|---------|----------------|------|---|-----------|-----|---|--------|---|--|---|--|--|--|---|------|--------------------|--------------------------|-----|---|--|---------------------------------------|---------------------|
| - | | _ | × × × × × × × × × × × × × × × × × × × | | | 0,0m Extremely low shear strength slightly sandy clayey SILT very loose clayey sand between 0.75m - 0.82m becoming very low to medium shear strength | | | 0 | 80 | | | | | | 5 | | | 15 30 | | 75 9 | |
| | 1- | -4 | × × × × × × × × × × × × × × × × × × × | | | below 1.05m 1,1m Medium to high, locally vey high, shear strength sandy CLAY interbedded with medium dense to dense silty SAND | چي | | | - | | | | | | | | | | | | |
| | 2- | _ | | | | | | | | | | | | | | | | | | | | |
| | 3- | -8 | | | | | | | | <u>,</u> | | | | | | | | | | | | |
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| | 4- | - 12 | | | | | | | | | | | | | | | | | | | | |
| | _ | | | | | | | - | | _ | | | | _ | | | | | | | | |
| | 5- | - 16 | | | СРТ | | | | | | | - | | | | | | | | | | |
| | 6- | - 20 | × · · · × · · · · · · · · · · · · · · · | | | 6,0m Dense slightly silty SAND | | | | | | | | | | | | | | | | |
| | 7- | - 24 | | | | becoming medium dense to dense below | | | | | | | | | | | | | | | | |
| | - | -28 | × · · · × · · · · · · · · · · · · · · · | | | 8.05m | | | | | | | | | | | | | | | \sum | |
| | 9- | - | x · · · x · · · · · · · · · · · · · · · | | | 9,1m High shear strength sandy CLAY | | | | | | | | | | | | | | | | |
| | - | - 32 | | | | 9,6m Medium shear strength slightly sandy CLAY | | | 5 | 5 | | | | | _ = | | | | | | | |
| | | | | | | | | | { | { | Alpha | Value | | 0.8 | Dat | te Perf | ormed | |)6/05/2023 | <u> </u> | | |
| ŀ | | | | | | | | | | | | | <u>I</u> | - | Wa | ater De | pth | | 114,24 m | ZH | | |
| | | | | | | ZZ_OWF_BU7_CPT MED-TEC_A06 | | | | | MIN DE L | ISTÈRE A TRAN | | | Co | ordinat | es | ŀ | E 628284, | 57m; N 4 | 76525 | 1,63m |
| nbiente | | | | | | Offshore Gulf de Lyon | | | | | ECO Liberté Égalité Fraterni | | | | Ma | ide By/ | Date | | SC - 14/11 | /2023 | | |
| ecnoan | | | | | | DGEC | | | | | 0 | TECNO | AMBIEN | ITE | Со | ne Nur | nber | · / | S10CFIIP. | 522602 / | 001 | |
| Τe | | | | | | | | | | | | | A TRADEBE CO | IMPANY | | וויד דיוו | 1001 | Ľ | | ~~~UUZ / | 501 | |

| | m ft | SOIL | SAMPLE NO | СРТ | SOIL DESCRIPTION | A Torvane Onshore Pocket Penetrometer_(Torvane_Offshore Pocket Penetrometer_(Ocket Penetrometer_(CIUC Triaxal Est. from CPT:N _x =15 Est. from CPT:N _x =20 UNDRAINED SH | Dinshore O Diffshore O Offshore O Offshore O Offshore O Offshore O Offshore O | UU_C UU_C Motor Fall C Fall C | Onshore · Vane_Onsho · Vane_Onsho · Vane_Onsho one one Remoulde TH (kPa) | re re Rem ed | . SUB UNIT (ł | MERGED WEIGHT ‹N/m³) | R E M o | Celativ st. from Cl Oistu Plastic I Liquid L Moistur | re de PT K₀=0. re co _imit imit e Conter | | y (%) =1 nt (%) |
|-------|----------------|------|-----------|-----|--|---|---|---|--|--------------------|---------------------|----------------------------|------------------|---|---|-------|-----------------------|
| • | 1136 | | | | 9,6m Medium shear strength slightly sandy CLAY <i>(continued)</i> | | | | | | 5 | | | | | | |
| | - | | | | | | > | | | | | | | | | | |
| | 12- -40 | | | | 11,9m High shear strength slightly sandy CLAY | | > | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | 44 | | | | | | > | | | | | | | | | | |
| | 14 — | | | | | | } | | | | | | | | | | |
| | - 48 | | | СРТ | | | | | | | | | | | | | |
| | - 52 | | | | | | | | | | | | | | | | |
| | 16 - | | | | | | | | | | | | | | | | |
| | 17 | | | | | | <u>}</u> | | | | | | | | | | |
| | - - 18 - | | | | | | | | | | | | | | | | |
| | - 60 | | | | | | $\frac{2}{5}$ | | | | | | | | | | |
| | 19 – | | | | | | 4 | | | | | | | | | | |
| | -64 | | | | | | <pre>{</pre> | | | | | | | | | | |
| | | | | | COMBINED CP1/VC LOG | | Alpha ' | value | 0.8 | | vate Per | | 06/ | 05/2023 | 71.1 | | |
| | | | | | Z2_OWF_B07_CPT | | MINI | STÈRE | | c | oordina | epun ites | - 11 E 6 | +,∠4 m 2 28284,5 | 7m; N | 47652 | 51,63m |
| ente | | | | | MED-TEC_A06 | | DE LA ÉCOL Liberté Égalité | A TRAN | | N | lade By | /Date | SC | - 14/11/ | 2023 | | , |
| ambiε | | | | | DGFC | | Fraternité | | | С | hecked | By/Date | AN | - 17/11/ | 2023 | | |
| Techc | | | | | | | 0 | TECNO | AMBIENTE A TRADEBE COMPANY | С | one Nu | mber | S10 | OCFIIP.S | 22602 | / 001 | |

| | DEPTH | ft | SOIL PROFILE | | | | СРТ | SOIL DESCRIPTION | - | ▲ Tor ▼ Poo ▲ Tor ▼ Poo ■ CIL — Est — Est | vane_(ket Pe vane_(ket Pe C Tria: from from | Dnshore enetrome Offshore enetrome xal CPT:N _{kl} = CPT:N _{kl} = | eter_Ons eter_Offs =15 =20 | shore of shore of the shore of | UU_0 UU_0 + Moto • Fall (• Fall (| Onshore Onshore or Vane_ or Vane Cone Cone Re | Rem. Onshore Onshore moulded | Rem. | SUE UNI | 3MEF T WE (kN/m | RGED EIGHT 1 ³) | Rela Est. fro Mois | m CPT K ₀ = | ens ^{0.5 and} | ity ™ant | (%) (%) |
|-------|-------|------|-----------------|--------|-------|---|-----|---|---|---|---|--|-------------------------------------|---|--|--|---------------------------------------|---------|------------|-----------------------|-----------------------------------|--------------------------|------------------------|---------------------------|-------------|------------|
| | _ | | <u></u> | ي ا |) | | | 11,9m High shear strength slightly sandy CLAY | | | 0 | | 30 | | | 10 | 60 | | 5 | 10 | 15 | 15 | 30 45 6 |)nt 0 75 | 90 | 105 |
| | | | | | | | | (continued) | | | | | 5 | 5 | | | | | | | | | | | | |
| | | -68 | | | | | | | | | | | 3 | | \$ | | | | | | | | | | | |
| | 21 - | 00 | | | | | | | | | | | \mathbb{R} | | > | | | | | | | | | | | |
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| | | -72 | | | | | | | | | | | ζ | 2 | $\left\{ \right.$ | | | | | | | | | | | |
| | 22- | 12 | | | | | | | | | | | 5 | | ${\ }$ | | | | | | | | | | | |
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| | 23- | -76 | | | | | | | | | | | \mid | | Ę | | | | | | _ | | | | | |
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| | 24 - | | | | | | | | | | | | | > | $\left \right\rangle$ | | | | | | _ | | | | | |
| | | - 80 | | | | | | | | | | | | > | 3 | | | | | | | | | | | |
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| | 25- | | | | | | СРТ | | | | | | | | $\left \right\rangle$ | | | | | | | | | | | |
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| | | - 84 | | | | | | | | | | | | } | | } | | | | _ | | | | $\left \right $ | | |
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| | 26 - | | | | | | | | | | | | | 3 | | $\left.\right\rangle$ | | | | | | | | | | |
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| | | - 88 | | | | | | | | | | | | Ş | | > | | | | | | | | | | |
| | 27 - | | | | | | | | | | | | | 3 | | 3 | | | | _ | _ | | | | | |
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| | 28 | -92 | | | | V | | | | | | | | \mathbb{R} | $\sum_{i=1}^{n}$ | | | | | _ | _ | | | | | |
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| | 20- | | | | | | | | | | | | | | | Z | | | | | | | | | | |
| | 23 | -96 | | | | | | | | | | | | $\left\{ \right\}$ | < | | | | | | | | | | | |
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| | | | | | [| | C | OMBINED CPT/VC LOG | | | <u> </u> | | | ∣ Alpha | Value | | 0.8 | Da | ate Pe | rform | led | 06/05/2 | 023 | | | |
| | | | | | | | | Z2_OWF_B07_CPT | | | | | | MIN | ISTÈPE | | | W Cr | ater D |)epth ates | | -114,24 | m ZH | V 476 | 5251 | .63m |
| inte | | | | | | | | MED-TEC_A06 | | | | | | DE L ÉCO Liberté | A TRAI | NSITIOI UE | N | Ma | ade B | y/Dat | e | SC - 14 | /11/2023 | 1 0 | 5201 | , |
| ambie | | | | | | | | DISNOTE GUIT de Lyón | | | | | | tegalité Fraterni | té | | | Cł | necke | d By/l | Date | AN - 17 | /11/2023 | | | |
| Tecnc | | | | | | | | | | | | | | 0 | TECNO | | | Co | one N | umbe | er | S10CF | IP.S2260 | 2/00 |)1 | |

| | DEPTH | SOIL | AMPLE NO | | СРТ | SOIL DESCRIPTION | To Po To Po Cli Es Es | rvane_Or cket Pen rvane_Of cket Pen JC Triaxa t. from C t. from C | nshore etromete fshore etromete al PT:N _{kt} =2 | er_Onst er_Offst 15 20 | ● UU hore O UU + Mo hore ⊕ Mo ◆ Fall ◇ Fall | Onshore Onshore or Vane or Vane Cone Cone Cone Re | Rem. Onshore Onshore | Rem. | SUBME UNIT W (KN | ERGED /EIGHT /m³) | Rela Est. fro Mois • Pla • Lio | ative om CPT sture astic Lir quid Lin | е de гк₀=0 е с mit mit | ensi .5 and I Onte | ty (%) ₅=1 ent (%) |
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| ł | | | б Т | + | | | | UNDR# 40 | AINED 8 | SHEA 0 | AR STREN 120 | GTH (k | ⊃a) 60 │ | | 5 1 | 0 15 | × ма 15 | bisture (30 4 | Conter 5 60 | nt) 75 | 90 105 |
| | | | | | | Final Depth 29.84m. Depth ended due to Target Depth reached Approx. Settlement 0.67m | | | | | | | | | | | | | | | |
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| ŀ | | • | • | <u> </u> | C | OMBINED CPT/VC LOG | 1 | 1 | | 4 | Alpha Value | e | 0.8 | Da | te Perfor | med | 06/05/2 | 023 | | | |
| | | | | | | Z2_OWF_B07_CPT | | | | | 1 | | | W | ater Dept | th s | -114,24 | m Zł | H Zmr. • | 1 4705 | 251.60- |
| ıte | | | | | | MED-TEC_A06 | | | | | MINISTÈRI DE LA TRA ÉCOLOGIO | NSITIO UE | N | M | ade Bv/D | ate | ⊏ 6282 SC - 14 | 54,57 /11/2 | m; N 2023 | 4765 | 201,63m |
| mbier | | | | | | Offshore Gulf de Lyon | | | | | Égalité Fraternité | | | Cł | necked B | y/Date | AN - 17 | //11/2 | 2023 | | |
| Tecnos | | | | | | DGEC | | | | | C TECN | | | Co | one Numl | ber | S10CF | IIP.S2 | 22602 | 2 / 001 | |

| | m fi | TIOS t | SAMPLE NO | DT | | SOIL DESCRIPTION | Torva Pocki Torva Pocki CIUC Est. f | ne_Onsh et Penetro ne_Offsh et Penetro Triaxal rom CPT: rom CPT: | ore ometer_ ore ometer_ N _{kt} =15 N _{kt} =20 | Onshore O Offshore O Offshore O Offshore O O O O O O O O O O O O O O O O O O O | UU_Onshore UU_Onshore Motor Vane Fall Cone Fall Cone Re Fall Cone Re ENGTH (k | e Rem. _Onshore _Onshore F emoulded Pa) | Rem. | SUBMER UNIT WE (kN/m | RGED IGHT I ³) | Rela Est. from Mois • Pla: • Liqu × Moi | m CPT stic Lim uid Limi isture C | e den K ₀ =0.5 an e CON hit it Content | sity ™K₀=1 tent | (%) (%) |
|----------|-------------|--|-----------|----|-----|---|--|--|--|---|---|--|-------------|----------------------------|----------------------------------|--|---|--|-----------------------|------------|
| ł | | × · × · × · ·× · × · × · × · × · ·× · × · | | | | 0,0m Extremely low to low shear strength sandy SILT | 40 | | 80 | 120 | 1 | 60 | | 5 10 | 15 | 15 3 | 30 45 K | 60 7 | 75 90 | 105 |
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| | 1 | × × × | | | | 0,8m Medium dense to dense SAND | | | | | | | | | | * | | | | |
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| | 620 | 0 | | | - | 6,1m Medium dense to dense SAND with frequent partings of low to medium, locally | | | | | | | _ | • | | × | | | | |
| | 7- | | | | | | | | | | | | | | | × | | | | |
| | -24 | 4 | | | | | < | | | | _ | | | | | | | | | |
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| | - 32 | 2 | | | | | | | | | | | | | | | | | | |
| ╞ | | | | | C | OMBINED CPT/VC LOG | | | | Alpha Va | lue | 0.8 | Date Wat | e Perform | ed | 03/05/20 -94,14 n | 023 n ZH | | | |
| | | | | | | Z2_OWF_B09_CPT | | | | MINIST DE LA T | ÈRE RANSITIO | N | Coc | ordinates | | E 62609 | 98,61r | m; N 47 | 68886 | ,32m |
| biente | | | | | | Offshore Gulf de Lyon | | | | ÉCOLOO Liberté Égalité Fraternité | GIQUE | | Mad | de By/Date | e Dist | SC - 14 | /11/20 |)23 | | |
| Fecnoart | | | | | | DGEC | | | | C TE | CNOAMBI | | Che | ескеа Ву/[ne Numbe | Jaie r | AIN - 17 | / 11/20 | ,∠3 2602 / 0 | 01 | |

| | DEPTH | i ft | SOIL PROFILE | SAMPLE NO | СРТ | SOIL DESCRIPTION | | Torv Pocl Torv Pocl CIU Est. Est. | rane_On ket Pene rane_Off ket Pene C Triaxa from CF from CF | nshore etromet fshore etromet PT:N _{kt} = PT:N _{kt} = NINED | er_Ons er_Offs 15 20 SHE/ | ● UL hore O UL + Mi hore ⊕ Mi ● Fa ◆ Fa | J_Onsho J_Onsho otor Van otor Van III Cone I III Cone I | re re Rem. e_Onsho e_Onsho Remoulde kPa) | re re Rem. ed | SUBM UNIT (ki | 1ERGED WEIGHT Wm ³) | F ► ► | Relative Est. from CPT /loisture O Plastic Li Liquid Lin X Moisture | e den FK0=0.5 a e con mit Content | sity (%) ^{nd K₀=1 tent (%} |
|--------|-------|---------|---|-----------|-------|---|---|---|---|---|---------------------------------------|--|--|--|---------------------|---------------------|---------------------------------------|-------------|--|---|---|
| | - | _ | | | | 6,1m Medium dense to dense SAND with frequent partings of low to medium, locally high, shear strength sandy CLAY (continued) | | 4 |) | 8 | 0 | | | 160 | _ | 5 | | | | | |
| | 11 - | -36 | | | | | | | | | ~ | | _ | | _ | | | _ | | | |
| | _ | - | | | | | | | | | | | | | | | | | | (| |
| | 12- | -40 | | | | | | | | | | | | - | _ | | | | | | |
| | - | - | | | | | | | | | | | | | | | | | | | |
| | 13 - | -44 | | | | | | | | | | | | | | | | | | | |
| | 14 – | - | | | | 14,0m Low shear strength silghtly sandy CLAY | | 6 | | | | | | | | | | _ | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | 4.5 | -48 | | | ODT | 14,4m Medium dense to dense silty SAND | | | | | | | | | | | | | | | |
| | 10- | - | | | CPT | becoming loose below 15.4m | | | | | | | | | | | | < | | | |
| | 16- | - 52 | | | | 15,6m Medium to high shear strength sandy CLAY interbedded with very loose to loose silty SAND | | | | | | | | | • | | | | >> | | |
| | | - | | | | | | | | | \mathbb{R} | | | | | | | IN | > | | |
| | 17 – | | | | | | | | ٤ | 2 4 | √ / √ | | | | - | | | | > | | |
| | - | - 56 | × · · × · | | | 17,2m Medium dense to dense silty SAND high shear strength sandy clay between | | | | | | | | | | | | _ | | 3 | |
| | 18 - | - | × · · · × · · · · · · · · · · · · · · · | | | 17.52m -17.58m | | | | | | | | | | | | | | \mathcal{F} | |
| | - | - 60 | | | | | | | | | | | | | | | | | | | |
| | 19- | | × · · · × · · · · · · · · · · · · · · · | | | 19.4m Medium to high shear strongth condu | | | | | - | | | - | | | | - | | | |
| | | -64 | | | | CLAY | | | \$ | 5 | | | | | | | | 1 | | | |
| F | | | | | C | OMBINED CPT/VC LOG | • | | / | | / | Alpha Valu | ie | 0.8 | D | ate Perfo | ormed | 03/ | /05/2023 | | |
| | | | | | | Z2_OWF_B09_CPT | | | | | | MINISTÈR | E | | N C | ater De | oth es | -94 E (| 4,14 m ZH | m; N 47 | 68886.32m |
| ente | | | | | | MED-TEC_A06 | | | | | | DE LA TRA ÉCOLOGI Liberté Égalité | ANSITI QUE | ON | м | ade By/I | Date | sc | C - 14/11/2 | 023 | |
| oambi€ | | | | | | DGEC | | | | | | Fraternité | | | С | hecked I | 3y/Date | AN | J - 17/11/2 | 023 | |
| Tecn | | | | | | | | | | | | C TEC | NOAME | | С | one Nun | nber | S1 | OCFIIP.S2 | 22602 / 0 | 01 |

| m | HLdaO ft | SOIL PROFILE | SAMPLE NO | СРТ | SOIL DESCRIPTION | ▲ Torvane_Onshore Pocket Penetrometer_C Torvane_Offshore Pocket Penetrometer_C CIUC Triaxal Est. from CPT:N _x =15 Est. from CPT:N _x =20 UNDRAINED SH 40 80 | Dinshore O Diffshore O Offshore O Offshore O Offshore D Offshore D | UU_Onshor UU_Onshor Motor Vane Motor Vane Fall Cone Fall Cone R RENGTH (k | e e Rem. _Onshore _Onshore F emoulded :Pa) 60 | tem. SI UI | UBME NIT WI (kN/r | RGED EIGHT n ³) | | elative from CP Distur Plastic L Liquid Lin Moisture 5 30 4 | e den $T K_0=0.5 a$ e con mit Content $F_5 = 60$ | sity (' ™ K₀=1 tent (| %) %) 105 |
|----------|-------------|-----------------|-----------|-----|---|--|---|---|---|---------------|-------------------------|-----------------------------------|-------|---|---|-----------------------------|-----------------|
| | - | | | | 19,4m Medium to high shear strength sandy CLAY <i>(continued)</i> | | | | | | | | | | | | |
| 21- | - 68 | | | | 20,6m Medium shear strength silghtly sandy CLAY | | | | | | | | | | | | |
| 22- | -72 | | | | | M Craw | | | | | | | | | | | |
| 23- | - 76 | | | | 22,7m Medium to high shear strength silghtly sandy CLAY | | > | | | | | | | | | | |
| 24 - | | | | | | | > | | | | | | | | | | |
| 25- | | | | СРТ | | | > | | | | | | | | | | |
| 26- | - 84 | | | | | | | | | | | | | | | | |
| 27- | - 88 | | | | | | > | | | | | | | | | | |
| 28- | -92 | | | | | | | | | | | | | | | | |
| 29- | - 96 | | | | | | | > | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | |
| \vdash | | | | (| COMBINED CPT/VC LOG | | Alpha \ | /alue | 0.8 | Date F | Perform | ned | 03/0 | 5/2023 | | | |
| | | | | | Z2_OWF_B09_CPT | | | TÈDF | | Water | r Depth | 1 | -94,1 | 14 m ZH | 1 1m: N 45 | 68886 3 | 32m |
| nte | | | | | MED-TEC_A06 | | DE LA ÉCOL | TRANSITIC | N | Made | By/Da | te | SC - | - 14/11/2 | 2023 | 00000,3 | <u>ح</u> ا11 |
| ambiei | | | | | Offshore Gulf de Lyon | | Égalité Fraternité | | | Check | ked By | /Date | AN - | - 17/11/2 | 2023 | | |
| l ecno; | | | | | | | 0 | TECNOAMBI | ENTE | Cone | Numb | er | S10 | CFIIP.S | 22602 / (| 001 | |

| | DEPTH | SOIL | MPLE NO | Γ | СРТ | SOIL DESCRIPTION | ▲ To Po ▲ To ■ Cl ■ Es ■ Es | orvane_O ocket Per orvane_O ocket Per UC Triax t. from C t. from C | nshore hetromet ffshore hetromet al CPT:N _{kt} =2 | er_Onsł er_Offsl 15 20 | ● L hore O L + N hore ⊕ N ◆ F ◇ F | JU_Onshor JU_Onshor Aotor Vane Aotor Vane all Cone all Cone R | e Rem. _Onshore _Onshore emouldec | e e Rem. I | SUBMI UNIT W (kN | ERGED VEIGHT //m ³) | Rela Est. fro Mois | ative | е de тк₀=0 е си | ensi 1.5 and onte | ty (% ∝=1 ent (% | 5) 6) |
|--------|-------|------|---------|---|----------|---|--|--|---|---------------------------------|---|--|---|------------------|------------------------|---------------------------------------|--------------------------|-----------------------------|-----------------------|-------------------------|------------------------|----------|
| | m ft | | SA | | | | | UNDR/ 40 | AINED 8 | SHEA 0 | AR STRE 120 | NGTH (k | Pa) 60 | | 5 1 | 0 15 | ● Lia × Ma 15 | juid Lin oisture 30 4 | nit Conte 5 6(| nt 0 75 | 90 10 | 5 |
| | | | | | | Final Depth 29.80m. Depth ended due to Target Depth reached Approx Settlement 0.57m. Final VC Depth | | | | | | | | | | | | | | | | |
| | 10 | D | | | | 4.66m. | | | | | | | | | | | | | | _ | | |
| | 31 – | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | + | | |
| | 32- | 4 | | | | | | | | | | | | | | | | | | | | |
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| | - | | | | | | | | | | | | | | | | | | | _ | | |
| | - 10 | В | | | | | | | | | | | | | | | | | | | | |
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| | - | | | | | | | | | | | | | | | | | | | + | | |
| | 34 - | | | | | | | | | | | | | | | | | | | | | |
| | - 11 | 2 | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| | 35 - | | | | | | | | | | | | | | | | | | | _ | | |
| | - 11 | 6 | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| | 36 - | | | | | | | | | | | | | | | | | | | _ | | |
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| | - 12 | D | | | | | | | | | | | | | | | | | | | | |
| | 37 - | | | | | | | | | | | | | | | | | - | | _ | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | - 124 | 4 | | | | | | | | | | | | | | | | | | | | |
| | 38 - | | | | | | | | | | | _ | | | | | | | | _ | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | 39-12 | 3 | | | | | | | | | | | | | | | $\left \right $ | | | + | | |
| | | | | | | | | | | | | | | | | | | | | _ | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| ┢ | | 1 | | | <u>с</u> | COMBINED CPT/VC LOG | | | | 4 | Alpha Val | ue | 0.8 | Da | ate Perfo | rmed | 03/05/2 | 2023 | | | | |
| ľ | | | | | | | | | | | | • | | w | ater Dep | th | -94,14 | m ZH | 1 | | | |
| | | | | | | ZZ_UVVF_BU9_CP1 MED-TEC Δ06 | | | | | MINISTÈ DE LA TI | RE | N | Co | oordinate | s | E 6260 | 98,61 | im; N | 4768 | 886,32r | m |
| biente | | | | | | Offshore Gulf de Lvon | | | | | ECOLOG Liberté Égalité Fraternité | IQUE | | Ma | ade By/D | ate | SC - 14 | l/11/2 | :023 | | | |
| loamt | | | | | | DGEC | | | | | | | | Cł | necked B | y/Date | AN - 17 | ′/11/2 | :023 | | | |
| Tecn | | | | | | | | | | | TE | | ENTE | Co | one Num | ber | S10CF | IIP.S2 | 22602 | 2/001 | | |

| F | DEPTH | | SOIL | MPLE NO | СРТ | SOIL DESCRIPTION | A Torvane_Onshore Pocket Penetrometer_(Torvane_Offshore Pocket Penetrometer_(ClUC Triaxal Est. from CPT:N _k =15 Est. from CPT:N _k =20 | UU_Onshore Onshore UU_Onshore Rem. Hotor Vane_Onshore Offshore Motor Vane_Onshore R Fall Cone Fall Cone Remoulded | Rem. SUBMERGED UNIT WEIGHT (kN/m ³) | Relative density (%) Est. from CPT K ₀ =0.5 and K ₀ =1 Moisture content (%) Plastic limit |
|---------------|---------------|------|--|---------|----------|--|---|---|--|--|
| Ļ | m | ft | | SA | | | UNDRAINED SH 40 80 | HEAR STRENGTH (kPa) | 5 10 15 | × Moisture Content 15 30 45 60 75 90 105 |
| | | - 4 | × × × × × × × × × × × × × × × × × × × | | | 0,0m Extremely low shear strength slightly sandy clayey SILT 0,8m Low to medium shear strength sandy SILT with partings of loose sand | | | • | × |
| | 2- | - 8 | | | | 2,1m Very low to low shear strength sandy SILT | | | • | |
| | 3 | - 12 | x x <td></td> <td></td> <td>3,5m Low to medium shear strength sandy SILT interbedded with very loose to loose SAND</td> <td></td> <td></td> <td></td> <td>*</td> | | | 3,5m Low to medium shear strength sandy SILT interbedded with very loose to loose SAND | | | | * |
| | | - 16 | | | СРТ | 5,0m Medium dense SAND 5,5m Low to medium shear strength sandy CLAY | | | | |
| | 6- - 7- | - 20 | | | | with frequent partings of loose silty SAND | | | | |
| | - 8 | - 28 | | | | 8,4m Medium to high shear strength sandy CLAY interbedded with loose to medium dense silty SAND | | | | |
| | _ | - 32 | | | | COMBINED CPT/VC LOG | | Alpha Value 0.8 | Date Performed | 29/04/2023 |
| Tecnoambiente | 1134 | 4013 | 41Z2_OW | F_B11 | _CPT Log | Z2_OWF_B11_CPT MED-TEC_A06 Offshore Gulf de Lyon DGEC | | MINISTÈRE DE LA TRANSITION ECOLOGIQUE L'Éditi Faterrité Enterrité ECOLOMANIENTE ECOLOMANIENTE | Vivater Depth Coordinates Made By/Date Checked By/Date Cone Number | -94,42 m ZH E 632657,34m; N 4770337,94m SC - 14/11/2023 AN - 17/11/2023 S10CFIIP.S22598 / 001 |

| m | DEPTH DEPTH | SOIL | SAMPLE NO | СРТ | SOIL DESCRIPTION | ▲ Torvane_Onshore Pocket Penetrometer Torvane_Offshore Pocket Penetrometer Ocket Penetrometer ClUC Triaxal Est. from CPT:N _u =15 Est. from CPT:N _u =20 UNDRAINED SH | UU_Onsh Onshore UU_Onsh UU_Onsh Hotor Va Offshore Fall Cone Fall Cone Fall Cone Fall Cone | iore iore Rem. ine_Onshore ne_Onshore Rem Remoulded (kPa) | N. SUBMERGED UNIT WEIGHT (kN/m ³) | Relative density (%) Est. from CPT Kg=0.5 and Kg=1 Moisture content (%) O Plastic Limit • Liquid Limit • Moisture Content 15 60 75 |
|--------|--------------------|------|-----------|-----|--|---|---|--|---|--|
| | _ | | | | 8,4m Medium to high shear strength sandy CLAY interbedded with loose to medium dense silty SAND <i>(continued)</i> | | | | | |
| 11 | I _ 36 | | | | | | | | | |
| 12 | 2- | | | | 11,5m Medium to high shear strength sandy CLAY interbedded with very loose to loose silty SAND | | | | | |
| | -40 | | | | | | | | _ | |
| 13 | 3 | | | | | | | - | | >> |
| 14 | ↓- <u>-</u> | | | | 13,8m Medium to high shear strength slightly sandy CLAY with occasional sand partings | | | | | -}>- |
| 15 | -48 | | | СРТ | | | | | | *> |
| | _ | | | | | | | | | |
| 16 | -52 5- | | | | | | | | | |
| 17 | 7_ 56 | | | | | | > | | | |
| 18 | 3- | | | 11 | | | | | | |
| | - 60 | | | | | | 5 | | | |
| 19 |)- | | | | 19,1m Medium shear strength CLAY | | | | | |
| | +64 | | | | COMBINED CPT/VC LOG | | Alpha Value | 0.8 | Date Performed | 29/04/2023 |
| | | | | | | | | V | Vater Depth | -94,42 m ZH |
| | | | | | ZZ_OVVF_B11_CP1 MED_TEC_A06 | | MINISTÈRE DE LA TRANSIT | | Coordinates | E 632657,34m; N 4770337,94m |
| biente | | | | | Offshore Gulf de Lvon | | ÉCOLOGIQUE Liberté Égalité Fraternité | Ν | /lade By/Date | SC - 14/11/2023 |
| noamt | | | | | DGEC | | | | Checked By/Date | AN - 17/11/2023 |
| leci | | | | | | | | | Cone Number | S10CFIIP.S22598 / 001 |

| DEPTH M ft | SOIL | SAMPLE NO | H C | СРТ | SOIL DESCRIPTION | Torvane_Onshore Pocket Penetrometer_ Torvane_Offshore Pocket Penetrometer_ CIUC Triaxal Est. from CPT:Nk=15 Est. from CPT:Nk=20 UNDRAINED Sł | _Onshore 0 _Offshore ⊕ ↔ HEAR STF | UU_O UU_O Motor Motor Fall Co Fall Co | nshore nshore Rem. Vane_Onshore Vane_Onshore one Remoulded ITH (kPa) | Rem. | SUBM UNIT V (ki | /IERG WEIG N/m³) | ED iHT | Re Est. f Moi • L | Iativ rom CF Stur Plastic L iquid Li Aoisture | e de T K₀=0.9 T CC imit mit conten | | ty (%) ᢑ₌₁ nt (%) |
|--------------------|------|-----------|-----|-----|---|---|--|--|--|------|-----------------------|------------------------|-----------|----------------------------|--|---|-------|-------------------------|
| - | | | | | 19,1m Medium shear strength CLAY (continued) | 40 80 | 12 | 20 | 160 | | 5 | 10 1 | 5 | 15 | 30 4 | 5 60 | 75 | 90 105 |
| 21 - | | | | | 20,8m Medium to high shear strength sandy CLAY | | | - | ~ | | | | | <i>ح</i> , י | | | | |
| 22- ⁻⁷² | | | | | 21,8m Medium to high shear strength slightly sandy CLAY | | Vanne | > | | | | | | | | | | |
| 2376 | | | | | | | | | | | | | | | | | | |
| | | | | | sandy below 24 05m | | | | | | | | | | | | | |
| - 80 | | | | | 24,5m High to very high shear strength sandy CLAY interbedded with very loose to | | | | | | | | | N | > | | | |
| 25- | | | | CPT | IOOSE SIILY SAIND | | | | | | | | | | >> | | | |
| 26 - | | | | | | | | | | | | | | | | | | |
| - 88 | | | | | | | | | | | | | | | , , , | | | |
| 2892 | | | | | 27,6m High to very high shear strength sandy CLAY | | | | | | | | | 72 | | | | |
| - | | | | | | | | | | | | | | | | | | |
| 29 - -96 | | | | | 29,0m High to very high shear strength CLAY | | | | | | | | | | | | | |
| | | | | | | | Alpha | /alue | 0.8 | Date | Perf | ormed | | 29/04 | 2023 | | | |
| | | | | 0 | | | | | 0.0 | Wate | er De | pth | | -94,42 | 20 | + | | |
| | | | | | Z2_OWF_B11_CPT MED-TEC_A06 | | MINIS DE LA | TÈRE | SITION | Cool | rdinat | es | | E 632 | 657,34 | 4m; N | 4770 | 337,94m |
| | | | | | Offshore Gulf de Lyon | | ÉCOLO Liberté Égalité Fraternité | OGIQUI | E | Mad | e By/I | Date | | SC - 1 | 4/11/2 | 2023 | | |
| | | | | | DGEC | | 0 | ECNO/ | AMBIENTE | Cher | e Nur | ⊎y/Da | ite | AN - 1 | //11/2 = P © | 2023 | / 001 | |
| 2 | | | _ | | | | | | A TRADEBE COMPANY | Cone | e inun | прег | | 3100 | יידי.S | -2098 | 1 001 | |

| | DEPTH | SOIL | WPLE NO | LG C | | SOIL DESCRIPTION | | Tor Poo Poo Cill Est | vane_Ons cket Pene vane_Offs cket Pene JC Triaxal . from CP . from CP | shore tromete shore tromete T:N _{kt} =1! T:N _{kt} =2(| er_Onsho er_Offsho 5 0 | ore O UU_ + Moto ore ⊕ Moto ♦ Fall (♦ Fall (| Onshore Onshore or Vane_ or Vane_ Cone Cone Re | Rem. Onshore Onshore moulded | e e Rem. I | SUBME UNIT W | ERGED /EIGHT /m³) | Rela Est. fro Mois | ative om CPT sture | = de r K₀=0 e c(| ensi .5 and I Onte | ty (%) ₅=1 •nt (%) |
|-------|---------------|------|----------|------|---|--|--|----------------------------------|---|--|---------------------------------|---|---|---------------------------------------|------------------|-----------------|-------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| | m ft | | SA SA | | | | | ا | JNDRAI | INED : 80 | SHEAI | R STRENG | GTH (ki 10 | ⊃a) 50 | | 5 1 | 0 15 | × Mo 15 | bisture (30 4 | Conter | nt) 75 | 90 105 |
| | | | | | | Final Depth 29.76m. Depth ended due to Target Depth reached Approx. Settlement 0.64m. Final PC Depth | | | | | | | | | | | | | | | | |
| | _— 100 |) | | | | 4.10m. | | | | | | | | | | | | | | | | |
| | 31 | | | | | | | | | | | | | | | | | | | | | |
| | - 104 | 1 | | | | | | | | | | | | | | | | | | | | |
| | 32- | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| | 33 - 108 | 3 | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | 34 - - 112 | 2 | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| | 35 - | | | | | | | | | | | | | | | | | | | | | |
| | - 116 | 5 | | | | | | | | | | | | | | | | | | | + | |
| | 36 – | | | | | | | | | | | | | | | | | | | | | |
| | - 120 | ס | | | | | | | | | | | | | | | | | | | | |
| | 37 - | | | | | | | | | | | | | | | | | | | | | |
| | - 124 | 4 | | | | | | | | | | | | | | | | | | | | |
| | 38 - | | | | | | | | | | | | | | | | | | | | + | |
| | _ | | | | | | | | | | | | | | | | | | | | | |
| | 39-128 | 3 | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | + | |
| ╞ | | | | | | | | | | | | nho \/el··· | | 0.0 | | | med | 20/04/2 | | | | |
| ┢ | | | | | U | | | | | | | pila välüe | <u> </u> | 0.0 | W | ater Den | ineu ih | -94.42 | m ZH | | | |
| | | | | | | Z2_OWF_B11_CPT | | | | | | MINISTÈRE | 101710 | N. | Co | ordinate | s | E 6326 | 57,34 | m; N | 4770 | 337,94m |
| ente | | | | | | MED-TEC_A06 Offshore Gulf de Lyon | | | | | | DE LA TRAN ÉCOLOGIQI Liberté Égalité | USITIOI UE | N | Ma | ade By/D | ate | SC - 14 | /11/2 | .023 | | |
| ambie | | | | | | DGFC. | | | | | | Fraternité | | | Cł | necked B | y/Date | AN - 17 | ′/11/2 | 023 | | |
| Tecno | | | | | | | | | | | | C TECNO | | | Co | one Numl | per | S10CF | IIP.S2 | 22598 | 3/001 | |

| m ft | SOIL | SAMPLE NO | | CPT | SOIL DESCRIPTION | ▲ Tor ▼ Poo ▲ Tor ▼ Poo ■ CIL — Est — Est ↓ | vane_On ket Pene vane_Off ket Pene C Triaxal from CF from CF JNDRA 0 | shore trometer_Or shore trometer_Of T:N _{xt} =15 T:N _{xt} =20 INED SHE 80 | nshore ffshore EAR ST | UU_O UU_O Motor Fall C Fall C Fall C | nshore nshore Rem Vane_Onsh Vane_Onsh one Remoul TH (kPa) 160 | ore ore Ren ded | n. S U | UBMERG NIT WEIG (kN/m ³) 5 10 | GED GHT | | elativ . from C Distu Plastic Liquid Moistu 5 30 | Ve de PT K ₀ =0 IFE Ce Limit Limit Ire Conte 45 61 | ensit .5 and K onte | y (%) ₀=1 nt (%) 90 105 |
|----------------|------|-----------|---|-----|---|--|--|--|---|---|--|-----------------------|--|--|------------|--------------------------------------|--|---|---------------------------|----------------------------------|
| 14 | | | | СРТ | 0,0m Extremely low strength slightly sandy clayey SILT 0,8m Low to medium strength sandy SILT 1,1m Extremely low to low strength slightly sandy clayey SILT | | | | | | | | | | | C | → ● | × | | |
| 2- | | | Ĭ | | becoming medium strength sandy below 2.25m Final Depth 2.32m. Depth ended due to Comm. Lost Approx. Settlement 0.58m. Final PC Depth 3.00m. Final VC Depth 4.40m. | | | | | | | | | | | | × > > > × | · | | |
| 4- | 2 | | | | | | | | | | | | | • • | | × | × | | | |
| - 16 5- | | | | | | | | | | | | | | • • | | × | × | | | |
| 620 | | | | | | | | | | | | | | •• | | | × | | | |
| 7- -24 | | | | | | | | | | | | | | • • | | × | × | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| - 32 | | | | | COMBINED CPT/VC LOG | | | | Alpha | Value | 0. | 3 | Date | Performe | d | 21/0 | 3/202; | 3 | | |
| lecnoambiente | | | | | Z2_OWF_B13_CPT MED-TEC_A06 Offshore Gulf de Lyon DGEC | | | | MIN DE L ÉCO Liberté Égalité Fraternit | TECNO | SITION E |) | Wate Coord Made Checl Cone | r Depth dinates By/Date ked By/Da Number | ate | -88,0 E 62 SC - AN - DS1 | 15 m Z 8660,8 14/11 17/11 0CFIIF | 'H 88m; N /2023 //2023 P.S225 | 47728 94 / 00 | 395,5m 1 |

| | a DEPTH | ft | SOIL | AMPLE NO | СРТ | SOIL DESCRIPTION | | Torv Poc Torv Poc CIU Est. Est. | vane_Or ket Pen vane_Of ket Pen C Triaxa from C from C | nshore etromet ffshore etromet al PT:N _{kt} =1 PT:N _{kt} =2 | er_Ons er_Offs 15 20 SHE | shore 0 + shore 0 + * | UU_C UU_C Motor Motor Fall C Fall C | Inshore Vane_O Vane_O one one Rem | Rem. Inshore Inshore F noulded | Rem. | SUBI UNIT (k | MERGEI WEIGH :N/m³) | | telat st. from loist | CPT K ₀ =0 UTE C(tic Limit d Limit | ensi 1.5 and Onte | ity (' _{K₀=1} ∋nt (| %) (%) |
|--------|------------|----|--|----------|-------|---|---|---|--|---|--------------------------------------|--|--|---|---|-----------|--------------------|---------------------------|-----|----------------------------|---|-------------------------|------------------------------------|-----------|
| | | | × × × × × × × × × × | S S | | 0,0m Extremely low to low shear strength slightly sandy clayey SILT | ● | 4 | 0 | 8 | 0 | | 20 | 160 | | | 5 | 10 15 | | | × | <u>) 75</u> | 90 - | 105 |
| | 1- | 4 | × × × × × · × · | | | 1,1m Very low to low shear strength sandy SILT | | M | | | | | | | | | | | | 0-10 | × | _ | | |
| | - | • | x · · x · · x x · · x · · x x · · x · x | | | 1,3m Extremely low shear strength slightly clayey sandy SILT | | | | | | | | | | | | | | | | _ | | |
| | 2- | 8 | · · · · · · · · · · · · · · · · · · · | | | becoming low to medium shear strength below | | | > | | | | | | | | (| | | × | • | | | |
| | 3 | | * | | | | | | | | | | | | | | | | 0 | ⇒× ● | c | _ | | |
| | 4- | 12 | x x x x x x x x x x x x x x x x x x x | | | | | | | n | | | | | | | • | • | × | × | | | | |
| | - | | · · · · · · · · · · · · · · · · · · · | | | 4,1m Medium dense to dense SAND | | | | | | | | | | | | | - | | | | | |
| | 5- | 16 | | | СРТ | 5,0m Low to medium shear strength CLAY with partings of loose sand | | | N N | | | - | | | | | • | • | X | × | 2 | / | | |
| | 6 - | 20 | | | | 5,5m Dense to very dense SAND | | | | | | | | - | | | • | • | | ×- | | \sum | $\overline{\mathbf{A}}$ | |
| | - | 20 | | | | | | | | | | | | | | | | | | | | | | |
| | 7- | 24 | | | | | | | | | | | | | | | • | • | × | × | | | | |
| | 8- | | | | | | | | | | | | | | | | | | | | | | | |
| | 9- | 28 | | | | becoming loose to medium dense below 8.95m | | | | | | | | | | | | | | | | |)))) - | |
| | - | 30 | | | | | | | | | | | | | | | | | | | | - | + | |
| | | 52 | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | - | | | - | | | - | | , | | | |
| | | | | | (| | | | | | + | ⊷ipha \ | alue | | υ.8 | Dat Wa | ater De | ormed | -88 | ∪3/202 3,04 m | 23 ZH | | | |
| | | | | | | Z2_OWF_B13_CPTa | | | | | | MINIS DE LA | TÈRE | SITION | | Co | ordina | tes | E 6 | 28669 |),72m; N | 4772 | 2887,2 | 26m |
| biente | | | | | | Offshore Gulf de Lyon | | | | | | ÉCOL Liberté Égalité Fraternité | OGIQU | E | | Ma | de By | /Date | SC | - 14/1 | 1/2023 | | | |
| cnoam | | | | | | DGEC | | | | | | 0 | TECNO | AMBIEN | ITE | Ch | ecked | By/Date | AN | - 17/1 | 1/2023 | QA / C | 01 | |
| Te | | | | | | | | | | | | | | A TRADEBE CO | IMPANY | | | Innel | 05 | IJOCEI | IF.3225 | 94 /0 | υI | |

| | m DEPTH | ft | SOIL | SAMPLE NO | | СРТ | SOIL DESCRIPTION | ▲ Torvane Pocket Pi Torvane Pocket Pi CIUC Tria Est. from Est. from UNDF 40 | Onshore enetrome Offshore enetrome axal CPT:N _{xt} = CPT:N _{xt} = RAINEE | er_Onsho er_Offsh 15 20 SHEA | UU_Onshore UU_Onshore Rem. H Motor Vane_Onshore Motor Vane_Onshore Fall Cone Fall Cone Remoulded R STRENGTH (kPa) 120 160 | Rem. SUE UNI | BMERGED T WEIGHT (kN/m ³) 10 15 | Relative density (%) Est. from CPT K ₀ =0.5 and K ₀ =1 Moisture content (%) o Plastic Limit Liquid Limit × Moisture Content 15 30 45 60 75 90 105 |
|--------|---------|------|---|-----------|---|-------|--|---|---|--|---|-----------------|--|---|
| | | | | | | | 9,8m Medium to high shear strength sandy CLAY interbedded with loose to medium | | 4 | | | | | |
| | _ | _ | × × . | | | | 10,4m Medium dense to dense silty SAND | | | | | | | |
| | 11 - | -36 | × · · · × · · · · · · · · · · · · · · · | | | | | | | | | | | |
| | | | × · . · . · × · . • | | | | 11,3m Medium shear strength sandy CLAY | | | | | _ | | |
| | - | - | | | | | 11.55m -11.75m medium dense sand | | 2 | | | | | |
| | 12- | | | | | | | | U S | > | | | | |
| | | -40 | | | | | | | \geq | | | | | |
| | - | | | | | | 12,4m Loose to medium dense SAND | | | | | | | |
| | 13 - | - | | | | | becoming clayey below 12.80m | | | | | | | |
| | 10 | | - · · · · · · · · · · · · · · · · · · · | | | | 13,1m Dense silty SAND | | | | | | | |
| | _ | -44 | × · · · × · · · · · · · · · · · · · · · | | | | | | | | | | | |
| | 14 - | | | | | | 13,7m Medium to high shear strength sandy CLAY with partings of loose sand | | | 2 | | | | |
| | 17 | - | | | | | | | | | | | | > |
| | _ | -48 | ××× ××× ××× | | | | 14,4m Medium strength silty CLAY | | 5 | | | | | |
| | 15 | | × × × · · · · · · · · · · · · · · · · · | | | ODT | 14,8m High shear strength sandy CLAY | } | L | | | | | |
| | 15 | _ | | | | UF I | interbedded with loose silty SAND | | | | | | | |
| | - | | | | | | | | | | | <u>`</u> | | |
| | 16 | -52 | | | | | 15,6m Medium shear strength CLAY | 5 | کے 5 | | | | | |
| | 10- | | | | | | | | $\left\{ \right.$ | | | | | |
| | _ | _ | | | | | below 16.45m with sand partings | | | | | | | |
| | | | | | | | | | \leq | | | - | | |
| | 1/- | - 56 | × · · × · · · · · · · · · · · · · · · · | | | | 17,0m Dense silty SAND | | | | | | | |
| | _ | | × | | | | | | | | | | | |
| | - | _ | × · · · × · · · · · · · · · · · · · · · | | | | @17.75m very loose clayey | | | | - | | | |
| | 18- | - 60 | × · · · × · · · | | | | | | | | | | | |
| | _ | 00 | · · · × · · · · · · · · · · · · · · · · | | | | | | | | | | | |
| | - | _ | × · · × · · · · · · · · · · · · · · · · | | | | @18.70m high shear strength sandy clay becoming loose to medium dense below 18.9m | | | | | | | |
| | 19– | | ` <u>*`````</u> *`` ` | | | | 19,1m Medium to high shear strength sandy | | \langle | < | | | | |
| | - | -64 | | | | | | | | | | | | |
| | | | | | | | | | 5 | ~ | | | | |
| ļ | | | <u> </u> | | | C | COMBINED CPT/VC LOG | | | | pha Value 0.8 | Date Pe | rformed | 21/03/2023 |
| | | | | | | | Z2_OWF_B13_CPTa | | | | MINISTÈRE | Water D | epth ates | -88,04 m ZH E 628669,72m: N 4772887 26m |
| inte | | | | | | | MED-TEC_A06 | | | | DE LA TRANSITION ÉCOLOGIQUE Liberté | Made B | y/Date | SC - 14/11/2023 |
| oambie | | | | | | | DGEC | | | | Fraternité | Checke | d By/Date | AN - 17/11/2023 |
| Tecno | 11.34 | 4013 | 341Z2 OW | F B13 | C | PTalo | pg - Rev2.pdf | | | | C TECNOAMBIENTE | Cone N | umber | DS10CFIIP.S22594 / 001 |
| | 1134 | +013 | -+122_000 | D13 | | | y - i tevz.pui | | | | | | | |

| r | H dego n ft | SOIL PROFILE | SAMPLE NO | СРТ | | SOIL DESCRIPTION | Ton Poc Ton Poc CIU Est. Est. | vane_Onshore ket Penetrom vane_Offshore ket Penetrom C Triaxal from CPT:N from CPT:N INDRAINE | e neter_On e neter_Off x=15 x=20 ED SHE 80 | nshore 0 + fshore ⊕ ◆ ≎ EAR STI | UU_Or UU_Or Motor Fall Cc Fall Cc RENGT | nshore nshore Rem. Vane_Onshoi Vane_Onshoi one Remoulde TH (kPa) 160 | re re Rem. ed | SUB UNIT (I | MERGE WEIGH (N/m ³) 10 15 | D HT | Relative density (%) Est. from CPT K ₀ =0.5 and K ₀ =1 Moisture content (%) o Plastic Limit • Liquid Limit × Moisture Content 15 30 45 60 75 90 105 |
|----------|----------------|-----------------|-----------|-----|----|---|---|--|---|--|--|--|---------------------|-------------------|--|---------|---|
| | - 68 | | | | | 20,2m Dense silty SAND loose clayey sand down to 20.35m | | | | | | | | | | | |
| 2' | 1- | | | | | loose clayey sand below 21.25m 21,3m Medium to high strength slightly sandy CLAY with sand partings | | | | | 2 | | | | | | |
| 22 | 272 | | | | | | | { | | | | - | | | | | |
| 2: | 3 | | | | | | | | | | | | | | | | >> |
| 24 | 4 | | | | | 24,1m High shear strength sandy CLAY with sand partings | | | | | San A | | | - | | | |
| 2 | 5 | | | CF | РΤ | | | | | | | | - | | | 2 | 2 |
| 20 | 6- | | | | | 25,8m High shear strength sandy CLAY interbedded with very loose to loose silty SAND | | | | | | > | | | | | \sim \wedge \sim \wedge \wedge |
| 27 | - 88 | | | | | 26,6m High shear strength sandy CLAY | | | | M. M | | | | | | | |
| 28 | B92 | | | | | 27,3m High shear strength sandy CLAY interbedded with very loose to medium dense silty SAND | | | | M N N | | | / | | | | |
| | - | | | | | 28,2m High to very high shear strength sandy CLAY | | | | | | | | | | | |
| 29 | 9 | | | | | 28,9m High shear strength sandy CLAY interbedded with very loose to medium dense silty SAND 29,5m High shear strength sandy CLAY | | | | | | | | | | | |
| | _ | | | | | | | | | Alpha | Value | 2 | | ate Per | formed | | 21/03/2023 |
| \vdash | | | | | | | | | + | | | | W | ater D | epth | + | |
| | | | | | | Z2_OWF_B13_CPTa | | | | MINIS | STÈRE | | C | oordina | ites | E | E 628669,72m; N 4772887,26m |
| ente | | | | | | MED-TEC_AUG | | | | DE LA ÉCOL Liberté Égalité | OGIQUI | E | М | ade By | /Date | 5 | SC - 14/11/2023 |
| pambi | | | | | | DGFC | | | | Fraternité | | | C | hecked | By/Date | e A | AN - 17/11/2023 |
| Tecno | | | | | | | | | | 0 | TECNOA | MBIENTE A TRADEBE COMPANY | C | one Nu | mber | | DS10CFIIP.S22594 / 001 |

| | DEPTH | OIL | PLE NO | PT | SOIL DESCRIPTION | Tor Poo Tor Poo CIL Est | vane_Onshore ket Penetromete vane_Offshore ket Penetromete C Triaxal from CPT:N _k =15 | er_Onshor er_Offshor 5 | ● Ul ● O Ul + M ● ● M ● Fa ◆ Fa | J_Onshore J_Onshore otor Vane_ otor Vane_ III Cone III Cone Re | Rem. Onshore Onshore | e e Rem. 1 | SU UN | JBME NT WI | rgei Eigh | | Rela Est. fr/ | ativ om CP | e de ⊤ĸ₀=0 œ co | ens .5 and | ity (%) _{K₀=1} |) |
|--------|-------|-----|--------|----|---|--|---|------------------------------|---|---|----------------------------|------------------|----------------|---------------|------------------|---|-----------------------|--------------------------------|-----------------------|--------------------|----------------------------|---|
| m | ft | PRO | SAMF | 0 | | – Est | . from CPT:N _{kt} =20 | 0 SHEAR | STREM | IGTH (ki | ⊃a) | | | (kN/r | m ³) | | O Pla ● Lia × M | astic L quid Lii oisture | imit mit Contei | nt | 00 105 | |
| | 100 | | | | Final Depth 29.79m. Depth ended due to Target Depth reached. Approx. Settlement 0.64m. Final PC Depth 3.00m. Final VC Depth 4.40m. | | 0 80 |) | 120 | | 60 | | | 5 10 |) 15 | | | 30 4 | | | 90 105 | - |
| 31 | | | | | | | | | | | | | | | | | | | | | | |
| | _ | | | | | | | | | | | | | | | | | | | | | |
| 32 | - 104 | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | _ | | |
| 33 | 108 | | | | | | | | | | | | | | | | | | | _ | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 34 | - 112 | | | | | | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | | | | | | | |
| | - 116 | | | | | | | | | | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | | | | | | | | | | | |
| 37 | - 120 | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| 38 | - 124 | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| 39 | - 128 | | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | | |
| | | | | (| COMBINED CPT/VC LOG | | | Alp | ha Valu | ie | 0.8 | Da | ate P | Perform | med | 2 | 1/03/2 | 2023 | | | | |
| | | | | | Z2_OWF_B13_CPTa | | | M | | E | N | Co | a.er oordii | nates | 1 | E | 6286 | in ∠⊢ i69,7: | 2m; N | 477: | 2887,26m | n |
| viente | | | | | Offshore Gulf de Lvon | | | DÉ Li Ég | COLOGI COLOGI berté yalité aternité | QUE | N. | Ma | ade E | By/Da | ite | S | C - 14 | 1/11/2 | 2023 | | | |
| noamt | | | | | DGEC | | | | TEO | | | Cł | necke | ed By | /Date | A | N - 17 | 7/11/2 | 2023 | | | |
| Teci | | | | | | | | | TEC | | | Co | one N | Numb | er | D | S10C | ;FIIP. | S2259 |) 4 / 0 | 01 | |

| | DEPTH | <i>с</i> и | SOIL | AMPLE NO | | СРТ | SOIL DESCRIPTION | | ▲ To ▼ Po ▲ To ▼ Po ■ CII — Es — Es | vane_O cket Per vane_O cket Per JC Triax from C | nshore hetromet hetromet al CPT:N _{kt} =2 CPT:N _{kt} =2 | er_Onshore er_Offshore 15 20 | ● UU_(○ UU_(+ Moto ● Moto ● Fall (◇ Fall (| Dnshore Dnshore Re r Vane_On r Vane_On Cone Cone Remo | em. shore shore Re ulded | m. | SUBN UNIT ' | /IERGE WEIGł N/m³) | ED HT | Rela Est. from Moist | tive density (%) n CPT K ₀ =0.5 and K ₀ =1 ture content (%) tic Limit id Limit |
|--------|------------|------------|---------------------------------------|----------|-----|-----|---|-------|---|--|--|---------------------------------------|--|--|-----------------------------------|------------|----------------|--------------------------|----------|----------------------------|--|
| ļ | m 1 | π | | S | | 1 | | | | JNDR. 10 | AINED | SHEAR S | STRENG | TH (kPa) 160 |) | | 5 | 10 15 | 5 | × Mois 15 3 | sture Content 0 45 60 75 90 105 |
| | - | - | | | | | 0,0m Extremely low shear strength slightly sandy clayey SILT | | | | | | | | | | | • | | × | |
| | 1- | | | | | | becoming very low to low shear strength below 1.02m | | 7 | | | | | | | | | • | | × | |
| | -4 | 4 . | | | | | 1,2m Dense SAND loose to medium dense between 1.1m - 1.42m | - | | | | | | | | _ | • | • | | × | |
| | 2- | | | | | | | | | | | | | | | | • | • | | × | |
| | | 3 | | | | | very dense between 2.55m - 3.70m | | | | | | | | | | | | | × | |
| | | | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | • | • | | × | |
| | - 1 4 - | 12 . | | | | | | | | | | | | | | | • | • | | × | |
| | _ | • | | | | | medium dense between 4.4m - 4.53m | | | | | | | | | | | | | | |
| | 5- | | × × × × × | | | СРТ | 4,9m Medium shear strength slightly sandy clayey SILT | - | < | | | | | | | | | | | × | |
| | | | | | | | | | | | | | | | | | | | | | |
| | 62 | 20 | | | | | | | | | | | | | | | | • | | × | |
| | 72 | | | | | | | | | | | | | | | | | • | | × | |
| | _ | | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | | | | |
| | 8- | 28 · | | | | | | | | | | | | | | | | | | | |
| | 9- | | | | | | | | | | | | | | | | | | | | |
| | -3 | 32 | | | | | | | | | | | | | | | | | | | |
| ļ | | | | | | (| COMBINED CPT/VC LOG | | | | | Alph | a Value | (|).8 | Date | e Perfe | ormed | | 29/04/20 | 23 |
| | | | | | | | Z2 OWF B14A CPT | | | | | 2 | | | ╞ | Wat | er De | pth | | -80,82 m | |
| e | | | | | | | MED-TEC_A06 | | | | | MI DE ÉC | NISTÈRE LA TRAN OLOGIQU | ISITION JE | ┝ | 000 Mad | e Rv/ | es Data | - | E 62646 | ა,∪ხm; N 4776487,28m |
| nbient | | | | | | | Offshore Gulf de Lyon | | | | | Liber Égali Frate | té té rnité | | ⊦ | Che | cked I | Dale Bv/Dat | e l | AN - 17/ | 11/2023 |
| cnoan | | | | | | | DGEC | | | | | | TECNO | AMBIEN | E | Co | | oy, Dal | ~ | S100CF | D 922509 / 001 |
| Τe | 11340 |)134 | 41Z2_OW | F_B14 | 4A_ | | og - Rev2.pdf | | | | | | | A TRADEBE COMP | ANY | 501 | | | | | |

| m ft | SOIL | SAMPLE NO | СРТ | SOIL DESCRIPTION | ▲ Ton ▼ Poc ▲ Ton ▼ Poc ■ CIU — Est. — Est. | vane_Onshore ket Penetrome vane_Offshore ket Penetrome C Triaxal from CPT:N _{kt} = JNDRAINEE | eter_Onshore eter_Offshore =15 =20 O SHEAR \$ | UU_Or UU_Or Hotor Motor Hotor Fall Co Fall Co TRENGT | shore shore Rem. /ane_Onshore /ane_Onshore ne Remoulded H (kPa) | Rem. S | SUBMERGEL JNIT WEIGH (kN/m ³) | Belativ Est. from CP Moistur ○ Plastic Li ● Liquid Lir × Moisture | e density (%) $T K_0=0.5 \text{ and } K_0=1$ e content (%) mit Content |
|----------------------|---|-----------|-----|--|---|---|---|--|--|--------|---|--|--|
| - | | 0 | | 5,3m Medium dense to dense SAND <i>(continued)</i> | 4 | <u>0 8</u> | 80 | 120 | | | 5 10 15 | 15 30 4 | 5 60 75 90 105 |
| - 11 36 - - | | | | | | | | | | | | | |
| 12 | × · · · · · · · · · · · · · · · · · · · | | | 12,0m High to very high shear strength sandy CLAY | | | E. | ٤ | | - | | | |
| _ | · · · · · · · · · · · · · · · · · · · | | | 12,2m Medium dense silty SAND | | | | | | _ | | | |
| 13 - | | | | 12,7m Medium to high shear strength sandy CLAY13,1m Very dense silty SAND | - | | | | | | | | |
| 44 | | | | | | | | | | | | | |
| 14 | × · · · × · · · · · · · · · · · · · · · | | | | | | | | | | | | |
| -48 | × · · · × · · · · · · · · · · · · · · · | | | 14.9m. Medium to high shear strength sandy | - | | | | | | | | |
| 15 - | | | CPT | CLAY interbedded with medium dense to dense silty SAND | | | | | | | | | |
| - 52 16 - | | | | | | | | | | | | >> | |
| - | | | | | | | | | | | | | |
| 17 | | | | | | | | | - | | | | |
| - | | | | | | | | | | | | | |
| -60 | | | | | | ~ | | - | _ | - | | | |
| - | | | | 18,8m Medium shear strength sandy CLAY | _ | A A | | | | | | | |
| -64 | | | | | | | | | | | | | |
| | - · · · · · · - · - | | | COMBINED CPT/VC LOG | | | Alph | a Value | 0.8 | Date | Performed | 29/04/2023 | |
| | | | | | | | | | | Wate | er Depth | -80,82 m Z⊢ | l |
| | | | | MED-TEC A06 | | | MI | NISTÈRE LA TRANS | ITION | Coord | dinates | E 626463,06 | 6m; N 4776487,28m |
| nbiente | | | | Offshore Gulf de Lyon | | | EC Liber Égali Frate | OLOGIQUE té mité | | Made | e By/Date | SC - 14/11/2 | 2023 |
| cnoar | | | | DGEC | | | | TECNOA | MBIENTE | Chec | Ked By/Date | AN - 17/11/2 | 2023 |
| Tec | | | | | | | 4 | TEOROA | A TRADEBE COMPANY | Cone | e Number | S10CFIIP.S2 | 22598 / 001 |

| - | m DFPTH | ft | SOIL PROFILE | SAMPLE NO | СРТ | SOIL DESCRIPTION | Torvane_Onshore Pocket Penetrometer_Onshore Order Penetrometer_Offshore Pocket Penetrometer_Offshore Pocket Penetrometer_Offshore Pocket Penetrometer_Offshore ClUC Triaxal Est. from CPT:Nt=15 Strom CPT:Nt=20 UNDRAINED SHEAR STRENGTH (kPa) | N. SUBMERGED UNIT WEIGHT (kN/m ³) | Relative density (%) Est. from CPT K ₀ =0.5 and K ₀ =1 Moisture content (%) o Plastic Limit Liquid Limit * Moisture Content 15 80 45 60 75 90 105 |
|--------------|------------|------|-----------------|-----------|--------|---|--|---|---|
| | _ | _ | | | | 18,8mMedium shear strength sandy CLAY (continued)20,4mMedium dense silty SAND | | | |
| | 21- | - 68 | | | | 20,8m Medium to high shear strength sandy CLAY with partings of very loose to loose sand | | | >> |
| | 22- | -72 | | | | | | | > > |
| | 23- | - 76 | | | | | | | |
| | - 24 - | - | | | | 23,6m Medium to high shear strength slightly sandy CLAY | | | |
| | - 25- | - 80 | | | СРТ | 25,0m Medium dense silty SAND | | | |
| | - 26 - | - 84 | | | | becoming sandy CLAY below 25.42m 25,5m Dense to very dense silty SAND | | | |
| | 27 - | - 88 | | | | | | | |
| | 28 - | -92 | | | | 27,9m Medium to high shear strength sandy CLAY | | | |
| | 29 - | - 96 | | | | 29,0m High shear strength sandy CLAY interbedded with very loose to medium dense silty SAND | | | |
| | | - | | | | Final Depth 29.67m. Depth ended due to Target | Alpha Value 0.8 | Date Performed | 29/04/2023 |
| ecnoambiente | | | | | | Z2_OWF_B14A_CPT MED-TEC_A06 Offshore Gulf de Lyon DGEC | MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE Identi Reaternité Tecenoambiente | Vater Depth Coordinates //ade By/Date Checked By/Date Cone Number | -80,82 m ZH E 626463,06m; N 4776487,28m SC - 14/11/2023 AN - 17/11/2023 S10CFIIP.S22598 / 001 |
| Ĕ | 1134 | 4013 | 341Z2_OW | F_B14 | A_CPT1 | .og - Rev2.pdf | A TRADERE COMPANY | | 5100, III .0220007001 |

| | DFPTH | ft | SOIL PROFILE | | | | СРТ | SOIL DESCRIPTION | Ton Poc Ton Poc CIU Est. | Ane_Onshore ket Penetrometer vane_Offshore ket Penetrometer C Triaxal from CPT:N _{xt} =15 from CPT:N _{xt} =20 | Onshor Offshor | | UU_Onsh UU_Onsh Motor Va Fall Cone Fall Cone ENGTH | ore ore Rem. ne_Onshoi ne_Onshoi Remoulde (kPa) | re re Rem. d | . S U | UBM NIT V (kN | IERG VEIG V/m³) | ЭЭНТ ЭНТ | R Est M o • | elat from Dist Plas Liqui Mois | tive 1 CPT f ture tic Lim id Limi sture C | c de K₀=0.5 ; CO iit t Content | nsi and P nte | ty (⁰ ₅₁ nt (| %) %) |
|--------|-------|-------|-----------------|---|---|---|-----|---|---|---|-------------------|-----------------------------|---|--|--------------------|----------|---------------------|-----------------------|-------------|-------------------------|---|--|---|---------------------|---------------------|----------|
| ł | | | | | - | | | Depth reached Approx. Settlement 0.60m. Final VC Depth 4.56m. | 4 | 0 80 | | 120 | | 160 | | | 5 | 10 1 | 5 | 15 | 5 30 |) 45 | 60 | 75 | 90 1 | 05 |
| | _ | - 100 | | | | | | | | | | | | | | | | | | | | | | + | | |
| | 31 - | - | | | | | | | | | | | | | | | | | | | | | + | + | | |
| | - | - 104 | | | | | | | | | | | | | | | | | | | | | + | + | - | |
| | 32- | | | | | | | | | | | | | | | | | | | | | | _ | + | | |
| | - | - | | | | | | | | | | | | | | | | | | | | | | _ | | |
| | 33- | - 108 | | | | | | | | | | | | | | | | | | | | | _ | _ | | |
| | _ | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | - | | | | | | | | | | | | | | | | | | | | | | | | |
| | 34 - | - 112 | | | | | | | | | | | | | | | | | | | | | | | | |
| | _ | - | | | | | | | | | | | | | | | | | | | | | | + | | |
| | 35 – | | | | | | | | | | | | | | | | | | | | | | | - | | |
| | _ | - 116 | | | | | | | | | | | | | | | | | | | | | _ | + | | |
| | 36 – | - | | | | | | | | | | | | | | | | | | | | | + | + | + | |
| | - | - 120 | | | | | | | | | | | | | | | | | | | | | _ | + | | |
| | 37 – | | | | | | | | | | | | | | | | | | | | | | _ | + | | |
| | - | - | | | | | | | | | | | | | | | | | | | | | _ | _ | | |
| | 38 - | - 124 | | | | | | | | | | | | | | | | | | | | | | | | |
| | - | _ | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 39 | - 128 | | | | | | | | | | | | | | | | | | | | | | + | | |
| | _ | - | | | | | | | | | | | | | | | | | | | | | + | + | + | |
| ŀ | | | | | | | C | COMBINED CPT/VC LOG | | | Alp | ha Va | alue | 0.8 | |)ate | Perfo | orme | d | 29/0 | 4/20 | 123 | | | | |
| | _ | | | _ | | _ | | Z2 OWF B14A CPT | | | | | | | V | Vate | r Dep | oth | | -80,8 | 32 m | ΤΗ | | | | |
| e | | | | | | | | MED-TEC_A06 | | | M Dé | E LA T | ÈRE TRANSIT GIQUE | ION | C | Coord | dinate | es Data | | E 62 | 6463 | 3,06n | n; N 4 | 1776 | 487,2 | 8m |
| mbient | | | | | | | | Offshore Gulf de Lyon | | | Li Ég Fr | berté salité aternité | | | C | hecl | ked E | Jaie By/Da | ate | AN · | · 17/ | 11/20 | 23 | | | |
| Tecnoa | | | | | | | | DGEC | | | | TE | CNOAM | BIENTE Adebe company | С | one | Num | ber | - | S10 | CFIIF | P.S22 | 2598 | / 001 | | |

| | DEPTH | ft | PROFILE | SAMPLE NO | СРТ | SOIL DESCRIPTION | | Ton Poc Ton Poc CIU — Est. — Est. | vane_Onshore ket Penetrometer_ vane_Offshore ket Penetrometer_ C Triaxal from CPT:N _{kt} =15 from CPT:N _{kt} =20 INDRAINED SH | Onshore Offshore | UU_Ons UU_Ons Motor V Motor V Fall Cor Fall Cor | hore hore Rem. ane_Onshore ane_Onshore e Remoulded I (kPa) | Rem. | SUBM UNIT \ (kt | IERGED NEIGHT √m³) | | from CPT K isture Plastic Limit Liquid Limit Moisture Ci | densi G=0.5 and conte | ty (%) _{≪=1} ent (%) |
|--------|-------|--|---|-----------|-----|---|---|---|--|---------------------------------|--|--|------|-----------------------|--------------------------|--------|--|-----------------------------|-------------------------------------|
| | - | | × × × × × × × × × × × × × × × × × × × | | | 0,0m Extremely low to very low shear strength slightly sandy clayey SILT 0,4m Dense to very dense gravelly SAND | | 4 | 0 80 | 1 | 20 | 160 | | 5 | 10 15 | | 30 45 | 60 75 | |
| | 1- | 4 | | | | becoming very dense below 1.25m | | | | | | | | | | | | ANY ANY A | LANN W. |
| | 2- | 8 0 | | | | | | | | | | | | | | | | | |
| | 3 | | | | | 2,7m Medium dense to dense slightly gravelly SAND sandy clay between 2.78m - 2.86m 3,2m Very dense to dense silty SAND | - | | 2 | | | | | | | | | | |
| | 4- | 12 × · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · | | | gravelly down to 3.45m | | | | | | | | | | | | | |
| | 5- | 16 | × · · · · · · · · · · · · · · · · · · · | | CPT | 4,4m Medium dense to dense silty SAND interbedded with high to very high shear strength sandy CLAY | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | 6 | 20 | | | | | | | | | | | | | | | | | |
| | 7- | 24 | | | | | | | | | _ | _ | | | | | }} | | |
| | 8- | | | | | | | | | | | | | | | A A | | | |
| | 9- | 28 | · · · · · · · · · · · · · · · · · · · | | | medium shear strength between 8.60m - 8.65m 8,7m Medium dense silty SAND | | | | | | | | | | | | 2 | |
| | _ | 32 × | · · · × · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | > | |
| ┝ | | | | | C | OMBINED CPT/VC LOG | | | | Alpha | Value | 0.8 | Da | te Perfo | ormed | 29/04 | /2023 | | |
| | | | | | | Z2 OWF B15 CPT | | | | 2 | | | Wa | ater Dep | oth | -83,46 | 3 m ZH | | 007.0 |
| e | | | | | | MED-TEC_A06 | | | | MIN DE L ÉCO | STÈRE A TRANSI LOGIQUE | TION | | ordinate | es Data | E 624 | 295,46m | i; N 4773 | 987,6m |
| nbient | | | | | | Offshore Gulf de Lyon | | | | Liberté Égalité Fraternit | I | | | ecked " | Jaie Ry/Data | | 17/11/202 | 23 | |
| cnoan | | | | | | DGEC | | | | | TECNOA | BIENTE | | | Jy, Dale | | | | |
| Tec | | | | | | | | | | | LONUAL | | Co | ne Nun | nber | S10C | FIIP.S22 | 598 / 001 | |

| | DEPTH | ft | SOIL | SAMPLE NO | СРТ | SOIL DESCRIPTION | Torv Pock Torv Pock CIUC - Est. - Est. - U | ane_Onshor tet Penetron ane_Offshor tet Penetron C Triaxal from CPT:N from CPT:N NDRAINE | e neter_On e neter_Off a=15 a=20 ED SHE | shore of fshore of SAR ST | UU_O UU_O Motor Fall C Fall C Fall C | Onshore Rem | ore ore Rer ed | m. { | SUBM JNIT V (kN | ERGED VEIGHT I/m ³) | | telat st. from | Live (CPT K ₀ CUTE (tic Limit id Limit sture Cor | tent | ity (%) _{K₀=1} ent (%) |
|--------|----------------------|---------------------------------------|---|-----------|-----|--|---|---|---|---------------------------------|---|-------------|----------------------|---------------|-----------------------|---------------------------------------|------------|--------------------|--|------------|---------------------------------------|
| | | | · · · · · · · · · · · · · · · · · · · | | | 10,0m Loose to medium dense silty SAND interbedded with high shear strength sandy CLAY | 40 | | 80 | | 20 | 7 | 5 | 7 | 5 | 10 15 | - | 5 30 | 7 | 50 73 | 90 103 |
| | 11: | 36 | | | | | | < | | M | | | | | | | | | .2 | | |
| | _ | | | | | | | | | | | | | | | | | | > | | |
| | 12- | ¥ 40 × | · · · · · · · · · · · · · · · · · · · | | | 11,8m Loose to medium dense silty SAND | | | | | | | | _ | | | | | | | |
| | 13 - | × × × × | · · · · × · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | | | | |
| | 14 | 44 × _ | · · · · · · · · · · · · · · · · · · · | | | 13,6m Medium to high shear strength sandy CLAY interbedded with medium dense SAND | < | | | | _ | | - | | | | | | | | |
| | | 48 | | | | 14,5m Medium dense SAND | | | | | | | | _ | | | | | | \searrow | |
| | 15 - | · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · | | СРТ | | | | | | | | | | | | | | | | |
| | : 16 - | 52 × | · | | | 15,5m Dense to very dense silty SAND | | | | | | | | | | | | | | | |
| | - | × × × | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | | | | |
| | 17 | 56 × | | | | | | | | | | | | | | | | | | | |
| | - 18 - | × × | · · · · × · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | | | { | |
| | (| 50 × | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | | | | |
| | 19 - | × × × | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | + | | | | |
| | + 6 | 64 × × | | | | | | | | | , | | | | | | | | | | |
| ┝ | | | | | | JOINIBINED CP1/VC LOG | | | + | Alpha ' | value | 0.8 | | Date | Perfo | rmed | 29/ | J4/20 | 23 | | |
| | | | | | | Z2_OWF_B15_CPT | | | | MINI | STÈRF | | | vvate Coor | ei Dep dinate | iu I S | -83 E 6 | ,40 m 2429 | ∠⊓ 5,46m [.] | N 477 | 3987.6m |
| ente | | | | | | MED-TEC_A06 | | | | DE LA ÉCOL | OGIQU | SITION | | Made | e By/C | Date | sc | - 14/ [,] | 11/202: | 3 | . , |
| Damble | | | | | | DISTICTE GUIT de LYON | | | | Fraternitë | | | | Cheo | cked E | By/Date | AN | - 17/′ | 11/202; | 3 | |
| lecno | | | | | | | | | | 0 | TECNO | | | Cone | e Num | ber | S10 | CFIIF | P.S225 | 98 / 00 | 1 |

| | DEPTH | ft | SOIL | AMPLE NO | СРТ | SOIL DESCRIPTION | | ▲ Tor Poc Tor Poc CIL Est Est | vane_On ket Pene vane_Off ket Pene IC Triaxa from CF from CF | nshore etromet fshore etromet I PT:N _{kt} =2 | ter_Onsh ter_Offsh 15 20 | ● l hore O l + M hore ⊕ M ◆ F ◇ F | JU_Onsh JU_Onsh Aotor Va Aotor Va Fall Cone Fall Cone | nore nore Rem. ane_Onshore ane_Onshore e Remoulded | e Rem. I | SUB UNIT | SMEI F WE kN/r | RGED EIGHT n ³) | R Es M | elat t. from Oist Plast | | : den ĸ₀=0.5 a • con | isity ^{nd K₀=} ten | (%) t (%) |
|-------|----------------|------|---|----------|-----|---|---|---|--|--|-----------------------------------|--|--|---|----------------|-------------|----------------------|-----------------------------------|--------------|----------------------------------|----------------|----------------------------|-----------------------------------|--------------|
| ļ | m | π | | S - | | | | ل 4 | JNDRA 0 | NED 8 | SHEA | AR STRE | NGTH | l (kPa) 160 | | 5 | 10 | 15 | × 1 | Moist 5 30 | ture C) 45 | ontent 60 | 75 9 |) 105 |
| | - - 21 - | - 68 | | | | 15,5m Dense to very dense silty SAND <i>(continued)</i> | | | | | | | | | | | | | | | | (| | |
| | - | - | | | | 21,5m Medium dense to dense, locally very | | | | | | | | | | | | | | | | | | |
| | 22- | - 72 | | | | dense, silty SAND with occasional high to very high shear strength clay partings | | | | | | | | | | | | | | | | | | |
| | 23- | -76 | × · · · × · · · · · · · · · · · · · · · | | | | | | | | | _ | | | | | | | | | | | | <u>}</u> |
| | - 24 - | - 80 | | | CPT | | | | | | | | | | | | | | | | | | | |
| | - 25 | - | | | | | | | | | | | | | | | | | | M M M | | | | |
| | 26 – | - 84 | | | | 25,7m Dense silty slightly silty SAND | _ | | | | | | | | | | | | | | | | | |
| | | - 88 | | | | becoming very dense below 26.7m | | | | | | | | | | | | | | | | (| | |
| | | _ | | | | Final Depth 27.32m. Depth ended due to High | - | | | | | | | | | | | | | | | | | |
| | 28 – | -92 | | | | Approx. Settlement 0.45m | | | | | | | | | | | | | | | | | | |
| | _ | - | | | | | | | | | | | | | | | | | | | | | | |
| | 29- | -96 | | | | | | | | | | | | | | | | | | | | | | |
| | | _ | | | | | | | | | | | | | Ī | | | | | | | | | |
| ┝ | | | | | C | COMBINED CPT/VC LOG | | | | | A | Alpha Val | ue | 0.8 | D | ate Per | rforn | ned | 29/0 | 4/202 | 23 | | | |
| | | | | | | Z2_OWF_B15_CPT | | | | | | 3 | | | N C | /ater D | epth | 1 | -83, | 46 m | | | 7200 | 7.6 |
| te | | | | | | MED-TEC_A06 | | | | | | MINISTÈ DE LA TI ÉCOLOG | RE RANSIT | ΓΙΟΝ | | lade Rv | ມເປS //∏ລ' | te | E 62 | .4295 |),46m | .i; in 47)23 | 1398 | ,om |
| nbien | | | | | | Offshore Gulf de Lyon | | | | | | Liberté Égalité Fraternité | | | | hecker | , Da | /Date | AN | - 17/1 | 1/20 | 23 | | |
| cnoan | | | | | | DGEC | | | | | | TFI | CNOAM | BIENTE | H | | /yت . | | | | ., 20. | | 00.1 | |
| Тес | | | | | | | | | | | | - | AT | RADEBE COMPANY | С | one Nu | imbe | er | S10 | CFIIP | '.S22 | 2598 / (| JU1 | |

| HLd3Q m ft | SOIL PROFILE | SAMPLE NO | СРТ | SOIL DESCRIPTION | | ▲ To Po ▲ To Po ■ CII Es Es | rvane_O icket Per rvane_O icket Per UC Triaxi t. from C t. from C | nshore letrometer ffshore letrometer al PT:N _{kt} =15 PT:N _{kt} =20 | Onshore Offshore | ● UU_(○ UU_(+ Moto ● Moto ● Fall (○ Fall (TRENG | Dnshore Dnshore Re r Vane_Ons r Vane_Ons Cone Cone Remol | n. shore shore Re Ilded | em. S | SUBME JNIT W (KN/ | RGED EIGHT m³) | R E M o • × | t. fron OISI Plas Liqu Mois | tive d n CPT K ₀ = CUTE C tic Limit id Limit sture Cont | ensi 0.5 and 1 onte | ty (%) _{Ko=1} ent (%) |
|---------------|---------------------------------------|-----------|-----|---|---|---|---|---|-------------------------------|---|---|----------------------------------|-------|-------------------------|----------------------|----------------------------|---|---|---------------------------|--------------------------------------|
| | × × × × × × × × × × × × × × × × | | | 0,0m Extremely low to very low shear strength slightly sandy clayey SILT | • | | 40 | 80 | | 120 | 160 | | | 5 10 |) 15 | 1 | 5 30 | 0 45 6 | 0 75 | 90 105 |
| 1 | × × × × × × × × × × × × × × × × × × × | | | 0,8m Very loose to loose silty SAND interbedded with very low to low shear strength clayey SILT | | | | | | | | | | | | | | K | | |
| 2- | | | | 1,6m Medium dense to dense slightly silty SAND interbedded with medium to high shear strength clayey SILT | | | | | | 5 | | 5 | | • | • | × | * | | | |
| 3 | | | | | | | | ~ | | | _ | | | | | | - X | | >> > > > | |
| - 12 4 - | | | | 3,9m Low to medium shear strength sandy SILT | | | | | | - | | | | • | • | - | × | | > | |
| | x x x x x x x x x x x x x x x x x x x | | CPT | | | | | | - | | | | | • | | | × × × | | | |
| 6 | x x x x x x x x x x x x x x x x x x x | | | | | | | | 3 | | | | | • | | | × | : | | |
| 7 | | | | 6,8m Medium dense to dense SAND | _ | • | | | | | | | | • | | | × | | | |
| 8- | | | | becoming silty below 7.9m | | | | | | | | | | • | • | × | | | \sum | |
| 9- | | | | medium shear strength sandy clay below 9.42m | | | | | | | | | | | | | | | | |
| -32 | | | | 9,5m Dense to very dense SAND | | | | | | | | | | | | | | | | $\sum_{k=1}^{n}$ |
| | | | C | COMBINED CPT/VC LOG | | | | | Alpha | Value | C | .8 | Date | Perfor | med | 03/0 | 05/20 | 23 | | |
| | | | | Z2 OWF B18A CPT | | | | | 2 | | | ┝ | Wate | er Depti | ר | -89, | ,37 m | ZH | 1 47-0 | 766.04 |
| 2 | | | | MED-TEC_A06 | | | | | MIN DE ÉCC | A TRAN | ISITION JE | ┝ | Made | | ite | E 6 | - 14/ | 5,51m; l 11/2022 | N 4770 | 156,04m |
| | | | | Offshore Gulf de Lyon | | | | | Liberté Égalité Frateri | ité | | ┝ | Chec | ked Rv | /Date | AN | - 17/ | 11/2023 | | |
| | | | | DGEC | | | | | 2 | TECNO | AMBIENT | E | Cone | e Numh | er | DS | 10CF | IIP.S226 | ، / 02 | 01 |
| - <u> </u> | | | | | | | | | | | A TRADEBE COMP | NY | | - THUTTU | ~ | 1 33 | | 0220 | | ~ 1 |

| n | DEPTH | ft | SOIL | SAMPLE NO | СРТ | SOIL DESCRIPTION | Tor Poo Tor Poo CIU Est. Est. | vane_Onshore ket Penetromete vane_Offshore ket Penetromete C Triaxal from CPT:N _{kt} =2 INDRAINED | er_Onsho er_Offsho 5 20 SHEAF | ore O + ore O + O + O + O + O + O + O + O + O + O + | UU_Ons UU_Ons Motor V Motor V Fall Cor Fall Cor | hore hore Rem. ane_Onshore ane_Onshore e e Remoulded I (kPa) | e e Rem. d | SUE UNI | BMEI IT WI | RGED EIGHT n ³) | Re Est. Mo | From CF Sistu Plastic I Liquid L Moistur | /e de PT K₀=0.5 re co Limit e Content | nsity (% and K ₀ =1 ntent (^c | 6) %) |
|----------|-------|------|---|-----------|-----|--|---|--|---|--|--|--|------------------|------------|---------------|-----------------------------------|-------------------|--|---|---|----------|
| | | | | | | 9,5m Dense to very dense SAND (continued) | 4 | 0 80 | 0 | 120 | | 160 | | 5 | 10 | 15 | 15 | 30 | 45 60 | | J5 |
| 1 | 1- | -36 | | | | medium dense between 11.05m - 11.34m | | | | | | | | | | | | | | | |
| 1 | 2- | -40 | × · · · · · · · · · · · · · · · · · · · | | | 12,0m Medium dense to dense slightly silty SAND | | | | | | | | | | | | | | | |
| 1 | 3- | -44 | | | | | | | | | | | | | | | | | | > | |
| 1 | 4 | | | | | | | | | | | | | | | | | | | | |
| 1 | 5- | -48 | | | CPT | 15,3m Dense to very dense silty SAND | | | | | | | | | | | | | | | |
| 1 | 6 - | - 52 | | | | becoming medium dense to dense below | | | | | | | | | | | | | | | |
| 1 | 7- | -56 | | | | 16.85m 17,5m Medium to high shear strength sandy | | | | - | | | | | | | | | | | |
| 1 | 8- | - 60 | | | | 17,7m Medium dense to dense slightly silty SAND | | | | | | | | | | | | | | | |
| 1 | 9- | | | | | becoming very loose to loose below 18.9m 19,0m Medium shear strength sandy CLAY 19.2m Loose to medium dense slightly silty | | | | | | | | - | | | | | | | |
| | | -64 | | | | | | | | pha V: | alue | 0.8 | D: | ate Pe | erform | ned | 03/0 ^F | 5/2023 | | | |
| \vdash | | | | | Ľ | | | | | | | 0.0 | w | ater D | Depth | 1 | -89,3 | 7 m Z | H | | |
| | | | | | | Z2_OWF_B18A_CPT | | | | MINIST | TÈRE TRANSI | TION | Co | oordin | nates | | E 618 | 3838,5 | 51m; N 4 | 1770756,04 | 1m |
| viente | | | | | | Offshore Gulf de Lvon | | | | ÉCOLO Liberté Égalité Fraternité | GIQUE | | M | ade B | 8y/Da | te | SC - | 14/11/ | 2023 | | |
| Joamb | | | | | | DGEC | | | | | | | C | necke | ed By | /Date | AN - 1 | 17/11/ | 2023 | | |
| Tecr | | | | | | | | | | | ECNOAL | ABIENTE TRADEBE COMPANY | Co | one N | lumb | er | DS10 |)CFIIP | .S2260 | 2 / 001 | |

| | m | ft | SOIL PROFILE | SAMPLE NO | СРТ | SOIL DESCRIPTION | ▲ Torvane_Onshore Pocket Penetrometer_(Torvane_Offshore Pocket Penetrometer_(ClUC Triaxal Est. from CPT:N _e =15 Est. from CPT:N _e =20 UNDRAINED SH | Onshore Offshore | UU_C UU_C Motor Fall C Fall C | Onshore · Vane_Onshore · Vane_Onshore · Vane_Onshore · Vane_Onshore · One Remould TH (kPa) 160 | re re Ren ed | n. SUBMERG UNIT WEIG (kN/m ³) | ED HT | Relativ Est. from Cl Moistur • Plastic I • Liquid L × Moistur 15 30 | /e den PT K₀=0.5 a re con Limit e Content 45 60 5 | nsity (%) ^{nd K₀=1} tent (%) |
|-------|--------|------|-----------------|-----------|----------|--|--|-----------------------------------|---|---|--------------------|---|----------|---|--|---|
| | | _ | | | | 20,0m Medium to high shear strength sandy CLAY (continued) | | | | | | | | | | |
| | _ | - 68 | | | | 20,3m Medium dense slightly silty SAND | | | | | | | | | | |
| | 21 - | - | | | | | | | | | | | | | | |
| | | | × · · · × · | | | 21,7m Medium to very high shear strength sandy | | | | | | | | | | |
| | 22- | -72 | | | | 22,0m Medium dense SAND | | | | | | | | | | |
| | 23 - | -76 | | | | | | | | | | | | | | |
| | _ | _ | | | | 23,4m Very loose to loose silty SAND interbedded with medium to high shear strength sandy CLAY | | | | | | | - | | | |
| | 24 – | | | | | 23,9m Low to medium shear strength sandy CLAY | | | | | | | | | | |
| | - | -80 | | | | 24,5m Medium dense SAND | | | | | | | | _ | | |
| | 25- | - | | | CPT | | | | | | | | | (| | |
| | - 26 - | - 84 | | | | | | | | | | | | | | |
| | _ | - | | | | 26,0m Medium to high shear strength sandy CLAY | | | Λ | | | | | | | |
| | 27 – | - 88 | | | | 26,7m Medium to high shear strength slightly sandy CLAY | | | | | | | | | | |
| | - | _ | | | | | | 5 | | | | | | | | |
| | - | - 92 | | | | | | | | | | | | | | |
| | 29 - | | | | | | | } | | | | | | | | |
| | - | -96 | | | | | | 2 h | | | | | | | | |
| | | _ | | | | | | Almeter | Volue | | | | | 03/05/2022 | | |
| | | | | | <u> </u> | | | Aipna | value | 0.8 | | Vater Denth | - | -89.37 m 7 | <u> </u> | |
| | | | | | | Z2_OWF_B18A_CPT | | MIN | ISTÈRE | CITICS | | Coordinates | | E 618838,5 | 51m; N 47 | 70756,04m |
| ente | | | | | | MED-TEC_A06 Offshore Gulf de Lyon | | DE L ÉCO Liberté Égalité | A TRAN LOGIQU | E | Ν | Made By/Date | | SC - 14/11/ | 2023 | |
| oambi | | | | | | DGEC | | Fraterni | | | C | Checked By/Da | ite | AN - 17/11/ | 2023 | |
| Tecn | | | | | | - | | 9 | TECNO | A TRADEBE COMPANY | | Cone Number | | DS10CFIIP | .S22602 | / 001 |
| | n ft | SOIL | SAMPLE NO | СРТ | SOIL DESCRIPTION | | Tor Poo Tor Poo CIL Est Est | vane_Onshore ket Penetrometer vane_Offshore ket Penetrometer C Triaxal from CPT:N _{et} =15 from CPT:N _{et} =20 | r_Onshore r_Offshore | ● UU_Onshore Onshore OUU_Onshore Rem. + Motor Vane_Onshore Rem. ● Motor Vane_Onshore Rem. ● Fall Cone ● Fall Cone Remoulded HEAR STRENGTH (kPa) | | | | | | RGED EIGH1 n³) | F ■ ■ | Relative density (%) Est. from CPT K ₀ =0.5 and K ₀ =1 Moisture content (%) o Plastic Limit • Liquid Limit • Moisture Content 15 20 45 60 75 00 405 | | | | | | |
|----------|---------------|------|-----------|----------|--|--|---|--|-------------------------|---|-----|-----|----------|-------|--------|----------------------|-------------|---|------------------|------|-------|------|----|--|
| | | | | | Final Depth 29.83m. Depth ended due to Target Depth reached Approx. Settlement 0.71m. Final VC Depth | | 4 | 0 80 | | 120 | 160 | 0 | | 5 | 5 10 |) 15 | | 15 3 | 0 45 | 5 60 | 75 | 90 1 | 05 | |
| | 100 | | | | 5.52m. | | | | | | | | | | | | | | | | | | | |
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| | - 116 | 5 | | | | | | | | | | | | | | | | | | | | | | |
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| | - 120 |) | | | | | | | | | | | | | | | | | | | | | | |
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| ┝ | | | | (| COMBINED CPT/VC LOG | | | | Alph | a Value | | 0.8 | Da | te Pe | erforn | ned | 03, | /05/2(| 023 | | | | | |
| F | | | | | | | | | | 1 | | W | ater [| Depth | ı | -89 |),37 n | n ZH | | | | | | |
| 0 | MED-TEC_A06 | | | | | | | MI | NISTÈRE LA TRAI | | (| Co | ordir | nates | | E 6 | 31883 | 38,511 | m; N 4 | 4770 | 756,0 | 4m | | |
| mbient | | | | | Offshore Gulf de Lyon | | | | Libe Égal Frat | rté ité rmité | | | Ma Ch | ade B | ed Bv | te /Date | SC AN | ; - 14/ | 11/20 /11/20 | J23 | | | | |
| l'ecnoar | DGEC | | | | | | | | ¢ | Cone Number DS10CFIIP.S2 | | | | | | 2260 | 2/00 | 01 | | | | | | |

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| m DEPTH Soll PROFILE | | SAMPLE NO | | СРТ | SOIL DESCRIPTION | | Tor Poo Tor Poo CIU Est. | vane_Onshore ket Penetromete vane_Offshore ket Penetromete C Triaxal from CPT:N _k =1 from CPT:N _k =2 | er_Onshore o er_Offshore o 5 00 SHEAR ST | Onshore O UU_Onshore Rem. + Motor Vane_Onshore Offshore @ Motor Vane_Onshore Fall Cone > Fall Cone Remoulded | | | . SUBMERGE UNIT WEIGF (kN/m ³) | | | Relative density (%) Est. from CPT K ₀ =0.5 and K ₀ =1 Moisture content (%) © Plastic Limit © Liquid Limit Moisture Content | | | | | | |
|----------------------------|-----------------------|---|--|-----|------------------|--|---|--|--|---|------------------|--------|--|------------------|------------------|--|-----------------|----------------|---------|---------|---------|--|
| | | × | | | | 0,0m Extremely low shear strength slightly sandy clayey SILT | | 4 | 0 80 | | 20 | 160 | | 5 | 10 | 15 | 15 | 30 | 45 60 | 0 75 | 90 105 | |
| - - 1- - | - 4 | x x x x x x x x x x x x x x x x x x x x x x x x | | | | becoming very low shear strength sandy clay below 1.0m 1,2m Very loose to loose silty SAND | | | | | | | | | | | | | 2 | | | |
| 2- | | × · · × · · · · · · · · · · · · · · · · | | | | 1,9m Medium dense silty SAND | | | | | | | | | | | | + | \sum | | | |
| 3 | -8 | | | | | 3,1m Very low to low shear strength silty CLAY low to medium shear strength sandy clay down | | | | | - | | | | | | | | | | | |
| - | - 12 | | | | | to 3.5m | | 5 | | - | | | | | | | | | | | | |
| 4 | | × × × × × × × × × × × × × × | | | | | | | A | | | | | | | | | | | | | |
| 5- | - 16 | | | | СРТ | 5,0m Loose to medium dense clayey SAND | | | | | | _ | | | | | | | \geq | | | |
| | | · · · · · · · · · · · · · · · · · · · | | | | 5,5m Dense SAND | | | | | | | | | | | | | | } } | | |
| 6- | -20 | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | | _ | | Z | | |
| _ | | | | | | | | | | | | | | | | | | | | K | | |
| 7- | -24 | | | | | | | | | | | | | | | | | | | | } | |
| 8- | | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | | | | | | |
| 9- | -28 | | | | | 8,1m Medium dense silty SAND | | | | | | | | | | | (| | | | | |
| - | | | | | | | | | | | | | | | | | | + | + | | | |
| | -32 | × · · × | | | | | | | | | | | | | | | | | \$ | | | |
| <u> </u> | | | | | (| | | | | Alpha | /alue | 0.8 | Da Wa | te Per ater D | erforme Depth | d | 05/05 -83,4(| /202: 0 m 2 | з ZH | | | |
| | | | | | | Z2_OWF_B19A_CPT | | | | MINI DE LA | STÈRE TRANSIT | ION | Co | oordinates | | | E 619 | 9896, | ,41m; N | 4775 | 039,43m | |
| | Offshore Gulf de Lyon | | | | | | | | | ÉCOL Liberté Égalité Fraternité | OGIQUE | | Ma | ade By/Date | | | SC - 1 | 14/11 | 1/2023 | | | |
| | | | | | | DGEC | | | | 0 | TECNOAN | BIENTE | Co | ne Nu | umber | a. C | S10C | FIIP. | .S22602 | 2 / 001 | | |

113401341Z2_OWF_B19A_CPT Log - Rev2.pdf

| DEPTH DEPTH | SOIL | SAMPLE NO | СРТ | SOIL DESCRIPTION | | Torval Pocke Torval Pocke CIUC Est. fr Est. fr UN 40 | ne_Onshore tt Penetrometer_ ne_Offshore tt Penetrometer_ Triaxal rom CPT:N _{kt} =15 rom CPT:N _{kt} =20 IDRAINED S 80 | _Onshore _Offshore HEAR S | UU_Or UU_Or UU_Or Motor Motor Fall Cc Fall Cc Fall Cc TRENGT | nshore nshore Rem. Vane_Onshore Vane_Onshore one Remoulded TH (kPa) 160 | Rem. | SUBMERGED UNIT WEIGHT (KN/m ³) 5 10 15 | R Es M • | elat t. from oisti Disti Liquid Moist 5 30 | ive de CPT K ₀ =0.f U IE CC c Limit Limit ure Conten 45 60 | insity and Kor nter | y (%) ⁼1 nt (%) 90 105 |
|----------------|---------------------------------------|-----------|-----|---|---|--|--|---------------------------------|--|---|------------|---|-------------------|--|--|---------------------------|--|
| - | | | | 9,9m Low shear strength sandy CLAY interbedded with dense silty SAND <i>(continued)</i> | | | | | | | | | | | | | |
| 11 30 | | | | 11,3m Very dense gravelly SAND | - | <u>></u> >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> | | | > | | _ | | | | | | |
| 12 | · · · · · · · · · · · · · · · · · · · | | | 12,4m Medium to high shear strength sandy CLAY interbedded with medium dense to | | | | | | | | | | | | | |
| 13 - 44 | | | | dense silty SAND 13.4m Low to medium shear strength sandy | | | | | 2 | | | | | | | > | |
| 14 — | | | | CLAY with occasional sand partings of very loose sand | | | 3 | | - | | | | ->: | > | | | |
| 15- | | | СРТ | | 1 | | > | | | | | | | | | | |
| - 52 16 - | 2 | | | | | | > | > | | | | | | | | | |
| 17-56 | | | | 16,5m Medium shear strength slightly sandy silty CLAY | | | | | | | = | | * | | | | |
| - | | | | | | | | | | | | | | | | | |
| 18 - 60 | | | | | | | | | | | | | | | | | |
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| | × * * * | | | COMBINED CPT/VC LOG | | , | < < | Alpha | Value | 0.8 | Date | e Performed | 05/0 |)5/202 | 23 | | |
| | | | | Z2 OWF B19A CPT | | | | | | | Wat | ter Depth | -83, | 40 m 2 | ZH | | |
| Ite | | | | MED-TEC_A06 | | | | MIN DE L ÉCO | ISTÈRE A TRANS LOGIQUI | | Coo Mad | ordinates | E 6 SC | 19896 - 14/1 | ,41m; N | 477503 | 39,43m |
| ambien | | | | Offshore Gulf de Lyon | | | | Liberté Égalité Fratern | té | | Che | ecked By/Date | AN | - 17/1 | 1/2023 | | |
| l ecnos | | | | DGEC | | | | 0 | TECNOA | A TRADEBE COMPANY | Con | e Number | S10 | CFIIP | .S22602 | / 001 | |

113401341Z2_OWF_B19A_CPT Log - Rev2.pdf

| UNDRAINED SHEAR STRENGTH (KPa) | Relative density (%) Est. from CPT K ₀ =0.5 and K ₀ =1 Moisture content (%) o Plastic Limit • Liquid Limit • Moisture Content 45 00 45 00 45 | | | | | | |
|--|--|--|--|--|--|--|--|
| III IIII IIII IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | Plastic Limit Liquid Limit Woisture Content 5 90 105 5 30 45 60 75 90 105 6 7 8 9 1 < | | | | | | |
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| | D5/2023 | | | | | | |
| COMBINED CP I/VC LOG Alpha Value 0.8 Date Performed 05/05/ | 05/2023 40 m 7H | | | | | | |
| Z2_OWF_B19A_CPT | +ν III ∠⊓ 19896,41m; N 4775039.43m | | | | | | |
| med-tech Med-tech Dela transition med-tech Med-tech Made By/Date | - 14/11/2023 | | | | | | |
| Offshore Gulf de Lyon | - 17/11/2023 | | | | | | |
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| m | HLdad ft | SOIL PROFILE | SAMPLE NO | | СРТ | SOIL DESCRIPTION | | Ton Poc Ton Poc CIU Est. | Anne_Onshore ket Penetromete vane_Offshore ket Penetromete C Triaxal from CPT:N _x =1 from CPT:N _x =20 | er_Onsho er_Offsho 5 0 SHEAF | UU_Onshore UU_Onshore Rem. Hotor Vane_Onshore Rem. Fall Cone Fall Cone Remoulded HEAR STRENGTH (kPa) 120 160 | | | | | | 1. SUBMERGED UNIT WEIGHT (kN/m ³) | | | | Relative density (%) Est. from CPT K ₀ =0.5 and K ₀ =1 Moisture content (%) o Plastic Limit • Liquid Limit × Moisture Content 15 30 45 60 75 90 105 | | | | | | | |
|----------|-----------------|-----------------|-----------|--|-----|--|--|---|---|--|--|-------|-----|------|-------|--------|---|-------|-----------------------|-------|---|-------------|-------|-------|--|--|--|--|
| | | | | | | Final Depth 29.87m. Depth ended due to Target Depth reached Approx. Settlement 0.74m | | 4 | | | 12 | | 160 | | | (1 | | 0 15 | > | | | 45 | | | | | | |
| | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 33- | - 108 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 34 - | - 112 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 35- | _ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - 116 | | | | | | | | | | | | | | | | | | _ | + | _ | | + | | | | | |
| 36 - | _ | | | | | | | | | | | | | | | | | | | _ | | | | | | | | |
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| 37- | - 120 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 38 - | _ | | | | | | | | | | | | | | | | | | | - | | | | | | | | |
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| 39- | 128 | | | | | | | | | | | | | | | | | | | + | + | + | - | | | | | |
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| \vdash | | | | | | | | | | | Prid V | aiue | | 0.0 | \M/• | ater I | Denti | h | + | -83 V | ,,∠∪2 | Zн | | | | | | |
| | Z2_OWF_B19A_CPT | | | | | | | | | MINIS | TÈRE | | | Co | ordir | nates | 5 | | E 61 | 9896 | ,41m; | N 47 | 7503 | ∂,43m | | | | |
| ente | | | | | | MED-TEC_A06 | | | | | DE LA ÉCOLO Liberté Égalité | TRANS | | | Ma | ade E | By/Da | ate | - | SC - | 14/1 | , 1/202; | /2023 | | | | | |
| ambie | DGEC | | | | | | | | | Fraternité | | | | Ch | ecke | ed By | /Date | e / | AN - | 17/1 | 1/202: | 3 | | | | | | |
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APPENDIX V – DIGITAL GEOTECHNICAL DATA

This appendix is delivered in a separate spreadsheet.