B.01.04.01 SITE REPORT

Reference Drawings:
47067567-1018 Site Block Plan
47067567-1019 Overall Site Layout and Cable, Pipe Route and TP Layout
ENEM-URS-E0-00-DR-ME-00114 Additional Land and Groundwater Sampling Locations

The proposed land based section of the development is to be located within the site boundary of the existing Delimara Power Station (DPS) and is approximately 24,000m^2 in area. The jetty, jetty access arm, LNG and BOG unloading facilities and LNG storage (FSU) are located in Marsaxlokk bay protruding from the existing DPS site. The proposed development includes a new CCGT Power Plant located in the north west of the site, a regasification compound in the south east of the site and an offshore LNG facility comprising a new jetty to receive LNG via ship to ship transfer extending westward from the south of the site. In addition two small locations in the centre of the site will be developed for the Cooling Water Pumps switchgear building (CW SWP Building) and the Delimara 3 Gas Reduction Station (DP3 GRS). The land surrounding the DPS, apart from a few residential units, is used predominately for agricultural purposes. The areas occupied by the proposed development are presented on drawing 47067567-1018. In addition below ground cooling waters and above ground piperack are routed through the existing Enemalta site, refer to drawing 47067567-1019 for routing details.

The geology of the DPS comprises Middle Globigerina Limestone which is described as over 50m thickness of white and grey interbedded marls and marly limestone which is susceptible to seasonal shrinking and swelling producing expansion cracks, although below the water table, where the rock remains saturated, the limestone maintains a very good quality[1, 3 & 4]. The western-most sections of the site (location of the proposed CCGT and regasification compound) consist of reclaimed land which is understood to comprise a mixture of Middle and Upper Globigerina Limestone recovered from cutting activity carried out for the development of the original DPS. It has been observed during construction activities that the majority of this material is wholly natural in origin and therefore unlikely to contain substances which may constitute a contamination risk.

During construction works this has been further verified by the testing of soil samples from the CCGT area which indicate the presence of organic material from the layer of sea grass at the original seabed level and also the presences of seawater where the soil is below water table, however no other contaminates were found to be present, and as such a permit to dispose of the excavated spoil was obtained from MEPA reference Waste Consignment Permit No. CP8027 This Permit was further extended after testing excavated samples from the regasification plant area and cooling water trench, the samples tested from both of these two areas we considered of sufficient inter quality to be disposed of at sea. Samples tested from the CW switchgear building excavations (Area D) were found to be mixed with top soil and as such were designated as being used for planted areas around the site, but not suitable for disposal at sea. None of the sampling carried out on site was found to contain any elevated levels of contamination in accordance with the existing Enemalta IPPC Permit.

The heavily loaded structures (eg CCGT Power Plant, regasification plant, BOG compressors, LNG facility jetty, jetty access arm and mooring and berthing dolphins) will all have piled foundations

extending through the fill material, used to reclaim the land, as this is determined to have a variable compaction and low Allowable Bearing Capacity[2,3&4]. In the case of the offshore LNG facility jetty, piling will extend through the seabed sediments to the bedrock, which is at a depth of up to 33m. Outline strength parameters for the bedrock were determined from the preliminary ground investigation[1] which determined an Allowable Bearing Capacity on the bedrock of 2.08 MPa. The detailed geotechnical ground investigations have now been carried out and these have been used to inform the final details and lengths of the CCGT piles[4], the regasification area piles[3] and the jetty and access arm piles[2].

Piling works have the potential to introduce contamination pathways from the surface into deep aquifers, however the ground investigations[1,2,3&4] have determined that the site geology has a low permeability and no significant aquifer is identified. Also as stated above, the reclamation fill is found to be generally free from contaminants within the main areas of construction. The lightly loaded structures outside of the CCGT plot (eg regas admin and control building, DP3 GRS) and the new access roads will have shallow foundations. Currently the site of the proposed CCGT Power Plant (Area A) is approximately level and the site of the proposed regasification compound (Area B) has also been recently levelled. As stated above samples have been taken from this arisings in this area and the material deemed uncontaminated and suitable for disposal at Sea and as such a Waste Consignment Permit as discussed above was granted by MEPA. More detailed information on the Geology and Hydrology of the site can be obtained for the referenced reports below.

There are no ground water aquafers below the facility, and as such it is not considered that an additonal ground water risk assessemnt over and above the current one carried out by Enemalta for the whole site, as refenced below, is currently required.

An operational monitoring strategy shall form part of the operational phase if required under the conditions of the IPPC permit and may use the existing referenced Site Report for baseline data, supplimented by the specific sampling as attached in Appendix A of this document.

Existing Groundwater Risk Assessment

Reference is made to the existing groundwater risk assessment carried out by Enemalta as part of the existing monitoring regime and IPPC permit. Supplemented by the additional testing referenced above this existing report is proposed to be used as the baseline for any further monitoring required as part of this new IPPC permit.

The main site investigation making up this report was carried out on behalf of Enemalta in June 2011. Twenty boreholes within the current Enemalta IPPC permit limits and three outside were carried out, the sample locations were positioned to provide a general coverage of the site, including the new CCGT plant location, the CW switchgear area, the D3 GRS and cover all of the below ground CW pipe.

From the twenty three boreholes drilled a total of thirty two samples were tested for a range of determinants, including a suite of metals, total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAHs), volatile and semi-volatile organic compounds, PCBs and asbestos. All concentrations tested were below required limits with the exceptions of slightly elevated TPH levels

recorded in BH08. This borehole is located in the facility of D1 boiler 2 away from these proposed new facilities.

References:

1: Terracore 2013. Site Investigation at Delimara. Geological Subsurface Investigation Ref TERR13/IAS001/J1722. Report. May 2013.

2: Geotechnical Investigation for Offshore Marine Works – Factual Report by Terracorre, Jan 2015, ref 2779-77-CI-RE-00002 and Geotechnical Investigation for Offshore Marine Works – Evaluation Report by Caster, March 2015, ref 2779-77-CI-RE-00003.

3: Geotechnical Investigation for Regasification Plant Area – Factual Report by Terracorre, Feb 2015, ref 2779-77-CI-RE-00006 and Geotechnical Investigation for Regasification Facilities – Evaluation Report by Caster, March 2015, ref 2779-77-CI-RE-00007.

4: Ground Investigation Report for the New Combined Cycle Power Plant by Solid Base, August 2014, ref J1057-GIR-Rev 0.

5: Geotechnical Investigation for Offshore Marine Works – Evaluation Report by Caster, March 2015, ref 2779-77-CI-RE-00003.

6: Geotechnical Investigation for Regasification Facilities – Evaluation Report by Caster, March 2015, ref 2779-77-CI-RE-00007

7: Enemalta Site Condition Report, August 2014, ref UK22-20354

APPENDIX A - On Site Material Sampling and Waste Consignment Permits


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sampling plan power station.pdf


Waste Consignment Permit No CP 8027.pc