GLAN LLYN DEVELOPMENT SITE
LLANWERN
NEWPORT

CELTIC ENGLOBE WASTEWATER TREATMENT PLANT

ENVIRONMENTAL RISK ASSESSMENT

AUGUST 2021

R1815/21/5129/ERA

Table 1 – Conceptual Site Model Risk Assessment

SOURCES	PATHWAYS	POTENTIAL RECEPTORS	NOTES (Including Control Measures)	RISK AFTER CONTROL
Operational water treatment system (Surface water and groundwater influent potentially impacted by organic & inorganic contaminants) Potential vapour generated from water treatment system (if NAPL present in influent)	▪ Direct Contact ▪ Leakage / spillage ▪ Vapour inhalation	▪ Site workers ▪ Site visitors ▪ Groundwater beneath the site ▪ Gwent Levels SSSI (70m to south) ▪ Surface Soils	▪ **Potentially Complete Pollutant Linkage:** Workers inspecting the treatment system may come into contact with Contaminants. Controlled by information, inductions, good working practices, wearing appropriate PPE and RPE, signage, Site monitoring, Site welfare facilities and by following Method Statements. ▪ The water treatment systems will be contained within bunds of capacity of 110% volume or more of the total system components capacity. High level float switches will ensure that the system is automatically switched off should any leakage occur within the system. Regular inspections of the treatment system and pipework will also be carried out by a competent engineer. Any impacted waters will undergo treatment prior to discharge. Weekly sampling of effluent will ensure only water acceptable to the discharge consent is discharged.	**Low**
Effluent discharge	▪ Direct Contact ▪ Leakage / spillage	▪ Site Staff ▪ Groundwater beneath the site ▪ Surface Soils ▪ Gwent Levels SSSI (70m to south)	▪ **Potentially Complete Pollutant Linkage:** Effluent for discharge will be monitored continuously by in-situ sensors and by sampling on a weekly basis to ensure compliance with the discharge consent. All pumped surface water requiring treatment will be treated via the on site treatment plant prior to discharge to the MEWD. The treated water will be of high quality posing negligible human health and environmental risk. ▪ Staff will be trained, inducted and have suitable PPE to minimise risk of exposure.	**Negligible**

SOURCES	PATHWAYS	POTENTIAL RECEPTORS	NOTES (Including Control Measures)	RISK AFTER CONTROL
Chemical reagents used in the treatment process (acid/alkali solutions and coagulant)	▪ Direct contact ▪ Leakage / spillage	▪ Site Staff ▪ Groundwater beneath the site ▪ Surface Soils ▪ Gwent Levels SSSI (70m to south)	▪ **Potentially Complete Pollutant Linkage:** All chemicals present on site will be appropriately stored within their proper containers and within a water treatment system bund of 110% capacity of all system items. Maximum of 1m3 of each reagent will be stored on site within the bund. ▪ Weekly inspection of all containers, dosing equipment and pipework will be carried out by a systems engineer to ensure they are in good condition with no obvious signs of leakage or loss of integrity. Any defects will be reported and addressed appropriately. ▪ Staff will be trained in the appropriate spill reporting and response procedure in addition toworking under Safe Systems of Work with suitable PPE to minimise risk of exposure. ▪ A safety shower conforming to EN15154 will be present on site in case of the unlikely event of contact with chemical reagents	**Low**

SOURCES	PATHWAYS	POTENTIAL RECEPTORS	NOTES (Including Control Measures)	RISK AFTER CONTROL
Wastes generated from the treatment process (solids, spent media, potential NAPL)	▪ Direct contact ▪ Vapour inhalation ▪ Leakage / spillage	▪ Site Staff ▪ Groundwater beneath the site ▪ Surface Soils ▪ Gwent Levels SSSI (70m to south)	▪ **Potentially Complete Pollutant Linkage:** All wastes generated through the treatment process will accumulate within water treatment system components (tanks & pressure vessels) and within a water treatment system bund of 110% capacity of all system items. IBCs, stored within the water treatment system bund, will be used to store any separated NAPL prior to off-site disposal or reuse. ▪ Water treatment system components, IBCs and their associated bunds will be subject to regular maintenance and inspection to ensure that they are in good condition with no pbvious signs of leakage or loss of integrity. ▪ Workers inspecting the treatment system may come into contact with Contaminants. Controlled by information, inductions, good working practices, wearing appropriate PPE and RPE, signage, Site monitoring, Site welfare facilities and by following Method Statements ▪ Staff will be trained in the appropriate spill reporting and response procedure and any spillage/leakage will be delt with accordingly.	**Low**

SOURCES	PATHWAYS	POTENTIAL RECEPTORS	NOTES (Including Control Measures)	RISK AFTER CONTROL
Noise emitted from system during active site works	▪ Noise emissions during water treatment operations	• Site Staff • Adjacent third-party workers • Public at site boundary.	• **Potentially Complete Pollutant Linkage:** All processes will be carried out using low intensity works, staff at the site will have limited contact with any prolonged noise emitting activity. Noise will be monitored during works using a decibel meter. Should noise levels exceed trigger levels set for the site then works will be stopped and noise reducing measures suce as construction of acoustic barriers will be employed. In addition, the potential effects of noise emitting activities will be mitigated by relevant PPE if required. • The treatment system comprises few moving parts and noise generation will be low. The impact to adjacent third-party workers will be not significant as the system is designed to be low noise, <70 dBA. Any noise emitting equipment in excess of 75 DbA will be housed to reduce noise emissions. Celtic will undertake noise monitoring to confirm levels. Any noise generating activities will be carried out during normal site operational hours, 08:00 – 18:00 Monday to Friday. No significant impact to the public at site boundary, the system is low noise - <70dBA. Celtic will undertake noise monitoring to confirm levels.	**Low**

SOURCES	PATHWAYS	POTENTIAL RECEPTORS	NOTES (Including Control Measures)	RISK AFTER CONTROL
Odorous emissions to atmosphere from water treatment system	▪ Direct Contact ▪ Leakage / spillage ▪ Vapour inhalation	▪ Site workers ▪ Site visitors ▪ Public at the site boundary	▪ **Potentially Complete Pollutant Linkage:** The water treatment system is not considered to be significantly odourous in nature. Odours will be monitored at the perimeter of the site at each operations and maintenance visit with findings recorded in the site diary. ▪ Should odours be emitted from the treatment system, the frequency of monitoring will be increased and control measures such as the use of an industrial deodoriser spray will be implemented.	**Low**
Dust	▪ Dust emissions during water treatment operations ▪	• Site Staff • Adjacent third-party workers ▪ Public at site boundary.	• **Incomplete Linkage**: The activities carried out at the site are limited to water treatment. The generation of dust is therefore considered to be not significant. • As part of operations and maintenance visits, any dust observed shall be recorded in the site diary and control measures considered and implemented according to the severity of the dust observed. ▪	**Negligible**

SOURCES	PATHWAYS	POTENTIAL RECEPTORS	NOTES (Including Control Measures)	RISK AFTER CONTROL
General amenity risks including litter releases and pests	▪ Wind blown (litter and flies) ▪ Via land (vermin and mud)	▪ Site workers ▪ Site visitors ▪ Public at the site boundary.	▪ **Incomplete Linkage:** The nature of operations at the water treatment system does not pose a risk of litter release to the site or beyond the site boundary. The proposed water treatment is unlikely to attract pests such as birds, rodents, or flies. ▪ Good housekeeping will ensure the site is operated in a hygienic manner. ▪ In the unlikely event that pests are identified on the site, a specialist pest management company will be appointed to provide advice and undertake any remedial action required. ▪ Daily monitoring checks for litter and pests will be carried out and workers will dispose of any litter generated or discovered on the site. Any instances of litter or pest discovery will be recorded in the site diary.	**Low**
Fire	▪ Release to airWind blown	▪ Site Staff ▪ Site Visitors ▪ Public at the site boundary	▪ **Potentially Complete Pollutant Linkage:** The nature of operations at the water treatment system does not pose a significant risk of fire. ▪ Preventative maintenance will be undertaken on all equipment to prevent any faults from occurring. ▪ Emergency procedures including the emergency response in the event of a fire will be implemented at the site as part of the EMS. ▪ All workers will be trained in relation to preventing fires and identifying fire risks.	**Low**
Vandalism	▪ Any of the above	▪ Any of the above	▪ **Potentially Complete Pollutant Linkage:** All water treatment systems will be secured with fencing preventing unauthorised access. ▪ Key members of staff can also attend site out of hours if required.	**Low**