



**Appendix L – Updated Matrices**

1.0 Cultural Heritage		Ferrybank	Kilbride	Shelton Abbey
<b>1.1 Cultural Heritage - Sites</b>				
1.1.1	Potential to impact (direct/indirect) on National Monuments (designated sites)	Imperceptible	Imperceptible	Imperceptible
1.1.2	Potential to impact (direct/indirect) on RMPs (designated sites)	Imperceptible	Imperceptible	Imperceptible
1.1.3	Potential to impact (direct/indirect) on RPS/NIAH (designated sites)	Imperceptible	Imperceptible	Imperceptible
1.1.4	Potential to impact (direct/indirect) on CH sites (previously unrecorded sites)	Imperceptible	Slight - greenfield site	Imperceptible
1.1.5	Potential to impact (direct) on water courses and environs (areas of archaeological potential)	Imperceptible	Imperceptible	Imperceptible
1.1.6	Potential to impact (direct/indirect) on historic designed landscapes	Imperceptible	Imperceptible	Imperceptible
1.1.7	Potential to impact (direct) on townland boundaries (cultural heritage significance)	Imperceptible	Imperceptible	Imperceptible
<b>1.2 Cultural Heritage - Route Corridors</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
1.2.1	Potential to impact on RMPs	Imperceptible	Imperceptible	Imperceptible
1.2.2	Potential to impact on National Monuments	Imperceptible	Imperceptible	Imperceptible
1.2.3	Potential to impact on RPS/NIAH	Imperceptible	Imperceptible	Imperceptible
1.2.4	Potential to impact on CH sites	Imperceptible	Moderate - corridor thorough greenfield lands	Moderate - corridor thorough greenfield lands
1.2.5	Potential to impact on historic designed landscapes	Imperceptible	Imperceptible	Imperceptible
1.2.6	Potential to impact on ACA	Imperceptible	Imperceptible	Imperceptible
<b>1.3 Cultural Heritage - Outfalls</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
1.3.1	Potential to impact on RMPs	Imperceptible	Imperceptible	Imperceptible
1.3.2	Potential to impact on National Monuments	Imperceptible	Imperceptible	Imperceptible
1.3.3	Potential to impact on RPS/NIAH	Imperceptible	Imperceptible	Imperceptible
1.3.4	Potential to impact on CH sites	Imperceptible	Imperceptible	Imperceptible
1.3.5	Potential to impact on Recorded shipwreck sites	Imperceptible	Imperceptible	Imperceptible
1.3.6	Potential to impact on inter-tidal archaeology (previously unknown)	Imperceptible	Imperceptible	Imperceptible
<b>2.0 Landscape &amp; Visual</b>				
<b>2.1 Landscape &amp; Visual - Sites</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
2.1.1	Potential to impact on views from scenic routes (designation in Wicklow CDP)	Imperceptible	Imperceptible	Imperceptible
2.1.2	Potential to impact on areas of 'Highly Sensitive Landscape' (designation in Wicklow CDP)	Imperceptible	Imperceptible	Imperceptible
2.1.3	Potential to impact on views from heritage/tourist/amenity features	Imperceptible	Imperceptible	Imperceptible
2.1.4	Potential to impact on the character of the landscape	Imperceptible	Slight - existing 'rural' character	Imperceptible
2.1.5	Potential that landscape screening will be ineffective or contribute to landscape and visual impacts	Imperceptible	Imperceptible	Imperceptible
2.1.6	Potential to impact on views from settlements	Imperceptible	Imperceptible	Imperceptible
2.1.7	Potential to impact on views from dwellings / local roads	Moderate - Closest site to Arklow town centre	Slight - Elevated site visible form surrounds	Imperceptible
2.1.8	Potential to impact on views from M11 motorway	Imperceptible	Imperceptible	Slight - visible from M11 bridge (northbound)
2.1.9	Potential to impact on views from Dublin - Rosslare rail line	Imperceptible	Imperceptible	Slight - visible from railway line
2.1.10	Potential to impact on views from other major roads (national or regional roads)	Imperceptible	Imperceptible	Imperceptible
2.1.11	Potential to disrupt landscape structure (hedgerows / field pattern etc.)	Imperceptible	Imperceptible	Imperceptible
2.1.12	Potential to impact on historic designed landscapes	Imperceptible	Imperceptible	Imperceptible
2.1.13	Potential to impact on woodlands and significant tree groups	Imperceptible	Imperceptible	Imperceptible

<b>2.2 Landscape &amp; Visual - Route Corridors - Pipelines</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
2.2.1	Potential to impact on views from scenic routes (designation in Wicklow CDP)	Imperceptible	Imperceptible	Imperceptible
2.2.2	Potential to impact on areas of 'Highly Sensitive Landscape' (designation in Wicklow CDP)	Imperceptible	Imperceptible	Imperceptible
2.2.3	Potential to impact on views from settlements	Imperceptible	Imperceptible	Imperceptible
2.2.4	Potential to impact on views from dwellings / local roads	Imperceptible	Imperceptible	Imperceptible
2.2.5	Potential to impact on views from motorways	Imperceptible	Imperceptible	Imperceptible
2.2.6	Potential to impact on views from other major roads (national or regional roads)	Imperceptible	Imperceptible	Imperceptible
2.2.7	Potential to impact on views from Dublin - Rosslare rail line	Imperceptible	Imperceptible	Imperceptible
2.2.8	Potential to impact on views from heritage/tourist features	Imperceptible	Imperceptible	Imperceptible
2.2.9	Potential to disrupt landscape structure (treelines / hedgerows / field pattern etc.)	Imperceptible	Slight - Changes during construction phase along route	Slight - Changes during construction phase along route
2.2.10	Potential to impact on woodlands and significant tree groups	Imperceptible	Imperceptible	Imperceptible
2.2.11	Potential to impact on rivers and streams	Imperceptible	Imperceptible	Imperceptible
2.2.12	Potential to impact on historic designed landscapes	Imperceptible	Imperceptible	Imperceptible
<b>2.3 Landscape &amp; Visual - Outfalls (Landward side)</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
2.3.1	Potential to impact on views from scenic routes (designation in Wicklow CDP)	Imperceptible	Imperceptible	Imperceptible
2.3.2	Potential to impact on 'Highly Sensitive Landscape' (designation in Wicklow CDP)	Imperceptible	Imperceptible	Imperceptible
2.3.3	Potential to impact on coastal walks (indicated in Wicklow CDP)	Imperceptible	Imperceptible	Imperceptible
2.3.4	Potential to impact on bathing locations (indicated in Wicklow CDP)	Imperceptible	Imperceptible	Imperceptible
2.3.5	Potential to impact on views from settlements	Imperceptible	Imperceptible	Imperceptible
2.3.6	Potential to impact on views from dwellings / local roads	Imperceptible	Imperceptible	Imperceptible
2.3.7	Potential to impact on views from major roads (national or regional roads)	Imperceptible	Imperceptible	Imperceptible
2.3.8	Potential to impact on views from Dublin - Rosslare rail line	Imperceptible	Imperceptible	Imperceptible
2.3.9	Potential to impact on views from heritage/tourist features	Imperceptible	Imperceptible	Imperceptible
2.3.10	Potential to Impact on Character of the Coastal Landscape	Imperceptible	Imperceptible	Imperceptible

3.0 Ecology		Ferrybank	Kilbride	Shelton Abbey
3.1 Ecology - Sites				
3.1.1	Potential to impact on Natura 2000 Sites	Imperceptible	Imperceptible	Imperceptible
3.1.2	Potential to impact on Habitats Directive Annex II listed species in freshwater	Imperceptible	Imperceptible	Slight - Disturbance of previously land-filled areas may have a potential to mobilise contaminants that could enter watercourses connected to Arklow Town Marsh and the Avoca river and may require additional geotechnical site investigation
3.1.3	Potential to impact on Habitats Directive Annex II listed species in coastal and marine waters	Imperceptible	Imperceptible	Imperceptible
3.1.4	Potential to impact on pNHAs and Conservation Zones	Imperceptible	Imperceptible	Slight - Disturbance of previously land-filled areas may have a potential to mobilise contaminants that could enter watercourses connected to Arklow Town Marsh and the Avoca river and may require additional geotechnical site investigation
3.1.5	Potential to impact upon ecological corridors, nature development area or high value habitats	Imperceptible	Slight - Arklow Town and Environs Development Plan 2011-2017 Objectives: BD1, BD2, BD3, BD4, BD5, BD6 are considered to be capable of being implemented given the size of individual field areas within the land parcel.	Imperceptible
3.1.6	Potential to impact on breeding habitat for Annex 1 bird species	Imperceptible	Imperceptible	Imperceptible
3.1.7	Potential to impact on IWeBS identified areas of importance	Imperceptible	Imperceptible	Imperceptible

3.2	Ecology - Route Corridors/Pipelines	Ferrybank	Kilbride	Shelton Abbey
3.2.1	Potential to impact on Natura 2000 sites	Imperceptible	Imperceptible	Imperceptible
3.2.2	Potential to impact on Habitats Directive Annex II listed species in freshwater	Imperceptible	Imperceptible	Slight - Disturbance of previously land-filled areas may have a potential to mobilise contaminants that could enter watercourses connected to Arklow Town Marsh and the Avoca river and may require additional geotechnical site investigation
3.2.3	Potential to impact on Habitats Directive Annex II listed species in coastal and marine waters	Imperceptible	Imperceptible	Imperceptible
3.2.4	Potential to impact on pNHAs and Conservation Zones	Imperceptible	Slight - Arklow Town and Environs Development Plan 2011-2017 Objectives BD2, WS2 require avoidance of construction within Arklow Town Marsh, and avoidance of hydrological impacts on the Marsh. Disturbance of previously land-filled areas may have a potential to mobilise contaminants that could enter watercourses connected to Arklow Town Marsh and the Avoca river and may require additional geotechnical site investigation	Slight - Arklow Town and Environs Development Plan 2011-2017 Objectives BD2, WS2 require avoidance of construction within Arklow Town Marsh, and avoidance of hydrological impacts on the Marsh. Disturbance of previously land-filled areas may have a potential to mobilise contaminants that could enter watercourses connected to Arklow Town Marsh and the Avoca river and may require additional geotechnical site investigation
3.2.5	Potential to impact upon ecological corridors, nature development area or high value habitats	Imperceptible	Imperceptible - Arklow Town and Environs Development Plan 2011-2017 Objectives: BD1, BD2, BD3, BD4, BD5, BD6 are considered to be capable of being implemented in the context of a revised pipeline corridor	Imperceptible
3.2.6	Potential to impact on breeding habitat for Annex 1 bird species	Imperceptible	Imperceptible	Imperceptible
3.2.7	Potential to impact on IWeBS identified areas of importance	Imperceptible	Imperceptible	Imperceptible

3.3 Ecology - Outfalls		Ferrybank	Kilbride	Shelton Abbey
3.3.1	Marine Outfall; Coastal Natura 2000 sites	Slight - Potential impacts on the coastal SACs Magharabeg Dunes SAC, Buckronev – Brittas Dunes and Fen SAC, and Kilpatrick Sandhills SAC and their conservation interests	Slight - Potential impacts on the coastal SACs Magharabeg Dunes SAC, Buckronev – Brittas Dunes and Fen SAC, and Kilpatrick Sandhills SAC and their conservation interests	Slight - Potential impacts on the coastal SACs Magharabeg Dunes SAC, Buckronev – Brittas Dunes and Fen SAC, and Kilpatrick Sandhills SAC and their conservation interests
3.3.2	Marine Outfall; Marine Natura 2000 sites	Imperceptible	Imperceptible	Imperceptible
3.3.3	Marine Outfall; Habitats Directive Annex II listed species	Imperceptible - Marine Mammal Observer (MMO) is to be employed during any geophysical survey or piling operations for the protection of individual marine mammals from noise-related injury or disturbance	Imperceptible	Imperceptible
3.3.4	Marine Outfall; Birds Directive Annex 1 listed species	Imperceptible	Imperceptible	Imperceptible
3.3.5	Potential to impact on IWeBS identified areas of importance	Imperceptible	Imperceptible	Imperceptible
3.3.6	River outfall; Habitats Directive Annex II listed species in freshwater	Imperceptible	Imperceptible - A river outfall option from the Kilbride land parcel will be required to be subject to appropriate treatment levels and licencing requirements in order to maintain or improve the conservation status of Habitats Directive Annex II listed fish species that occur in the Avoca river and its estuary; Salmon, Sea lamprey and River lamprey.	Imperceptible - A river outfall option from the Shelton Abbey land parcel will be required to be subject to appropriate treatment levels and licencing requirements in order to maintain or improve the conservation status of Habitats Directive Annex II listed fish species that occur in the Avoca river and its estuary; Salmon, Sea lamprey and River lamprey.
3.3.7	Potential to impact on breeding habitat for Annex 1 bird species	Imperceptible	Slight - Kingfisher survey of river banks near outfall location required at detailed design stage	Slight - Kingfisher survey of river banks near outfall location required at detailed design stage
4.0 Hydrology		Ferrybank	Kilbride	Shelton Abbey
4.1 Hydrology - Sites		Ferrybank	Kilbride	Shelton Abbey
4.1.1	Proximity to water bodies in terms of flooding and as an indicator of sensitive surface water receptors	Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference
4.1.2	Culverting requirement - used to indicate impact on flood-prone watercourses due to reduced conveyance.	Imperceptible - no culverting requirement envisaged	Imperceptible - no culverting requirement envisaged	Imperceptible - no culverting requirement envisaged
4.1.3	Area prone to flooding (based on historical data and predicted flood extents adjacent to the site as well as up and downstream locations)	Imperceptible. No recorded instance of flooding	Imperceptible. No recorded instance of flooding	Imperceptible. No recorded instance of flooding
4.1.4	Potential Impact on ecologically important and designated sites.	Imperceptible	Imperceptible	Imperceptible
4.2 Hydrology - Route Corridors		Ferrybank	Kilbride	Shelton Abbey
4.2.1	Proximity to water bodies in terms of flooding and as an indicator of sensitive surface water receptors	Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference
4.2.2	Culverting requirement - used to indicate impact on flood-prone watercourses due to reduced conveyance.	Imperceptible - no culverting requirement envisaged	Imperceptible - no culverting requirement envisaged	Imperceptible - no culverting requirement envisaged
4.2.3	Area prone to flooding (based on historical data and predicted flood extents adjacent to the site as well as up and downstream locations)	Slight - historic instances of flooding along route of pipeline corridor	Slight - historic instances of flooding along route of pipeline corridor	Slight - historic instances of flooding along route of pipeline corridor
4.2.4	Potential Impact on ecologically important and designated sites.	Imperceptible	Slight - Arklow Marsh - pNHA	Slight - Arklow Marsh - pNHA

<b>4.3 Hydrology - Outfalls</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
4.3.1	Proximity to water bodies in terms of flooding and as an indicator of sensitive surface water receptors	Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference
4.3.2	Potential to impact Shellfish Waters	Imperceptible. Study Area is not located within the designated shellfish waters	Imperceptible. Study Area is not located within the designated shellfish waters	Imperceptible. Study Area is not located within the designated shellfish waters
4.3.3	Area prone to flooding (based on historical data and predicted flood extents adjacent to the site as well as up and downstream locations)	Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference
4.3.4	Potential Impact on ecologically important and designated sites	Imperceptible	Imperceptible	Imperceptible
<b>5.0 Hydrogeology</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
<b>5.1 Hydrogeology - Sites</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
5.1.1	Aquifer Classification - importance of the groundwater resource to a given area	Slight - Locally Important Bedrock Aquifer	Slight - Locally Important Bedrock Aquifer	Slight - Locally Important Bedrock Aquifer & Locally Important Gravel Aquifer
5.1.2	Vulnerability Classification - potential for groundwater contamination	Imperceptible - "Low"	Moderate - "High" to "Extreme" to "Rock at near Surface or Karst"	Slight - "Moderate"
5.1.3	Groundwater Supplies - identification of water supply springs and bored wells based on GSI & EPA records.	Imperceptible - 1 no. well - ID:3217SWW051 Accuracy: 2km	Imperceptible - 1 no. well - ID:3217SWW043 Accuracy: 100m	Imperceptible - No wells
5.1.4	Groundwater Source Protection Area's and Zones of Contribution as per available GSI & EPA data	Imperceptible - No SPA's of ZOC's in close proximity	Imperceptible - No SPA's of ZOC's in close proximity	Imperceptible - No SPA's of ZOC's in close proximity
5.1.5	Identification of hydrogeological features from the GSI karst database	Imperceptible - No karst feature within 2 km	Imperceptible - No karst feature within 2 km	Imperceptible - No karst feature within 2 km
<b>5.2 Hydrogeology - Route Corridors</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
5.2.1	Aquifer Classification - importance of the groundwater resource to a given area	Slight - Locally Important Bedrock Aquifer	Slight - Locally Important Bedrock Aquifer & Locally Important Gravel Aquifer	Slight - Locally Important Bedrock Aquifer & Locally Important Gravel Aquifer
5.2.2	Vulnerability Classification - potential for groundwater contamination	Imperceptible - "Low"	Imperceptible - "Low"	Imperceptible - "Moderate" to "Low"
5.2.3	Groundwater Supplies - identification of water supply springs and bored wells based on GSI records.	Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference
5.2.4	Groundwater Source Protection Area's and Zones of Contribution as per available GSI data	Imperceptible - No SPA's of ZOC's in close proximity	Imperceptible - No SPA's of ZOC's in close proximity	Imperceptible - No SPA's of ZOC's in close proximity
5.2.5	Identification of hydrogeological features from the GSI karst database	Imperceptible - No karst feature within 2 km	Imperceptible - No karst feature within 2 km	Imperceptible - No karst feature within 2 km
<b>5.3 Hydrogeology - Outfalls</b>		<b>Ferrybank</b>	<b>Kilbride</b>	<b>Shelton Abbey</b>
5.3.1	Aquifer Classification - importance of the groundwater resource to a given area	Slight - Locally Important Bedrock Aquifer	Slight - Locally Important Bedrock Aquifer & Locally Important Gravel Aquifer	Slight - Locally Important Bedrock Aquifer & Locally Important Gravel Aquifer
5.3.2	Vulnerability Classification - potential for groundwater contamination	Imperceptible - "Low" rating	Imperceptible - "Moderate" rating	Imperceptible - "Moderate" rating
5.3.3	Groundwater Supplies - identification of water supply springs and bored wells based on GSI records.	Imperceptible - No groundwater supplies	Imperceptible - No groundwater supplies	Imperceptible - No groundwater supplies
5.3.4	Groundwater Source Protection Area's and Zones of Contribution as per available GSI data	Imperceptible - No SPA's of ZOC's in close proximity	Imperceptible - No SPA's of ZOC's in close proximity	Imperceptible - No SPA's of ZOC's in close proximity
5.3.5	Identification of hydrogeological features from the GSI karst database	Imperceptible - No karst feature within 2 km	Imperceptible - No karst feature within 2 km	Imperceptible - No karst feature within 2 km

6.0 Soils and Geology		Ferrybank	Kilbride	Shelton Abbey
6.1 Soils and Geology - Sites				
6.1.1	Potential to impact on Geological Heritage Sites / County Geological Sites	Imperceptible - No such sites in close proximity	Imperceptible - No such sites in close proximity	Imperceptible - No such sites in close proximity
6.1.2	Potential to interact with contaminated land	Moderate - Chance of encountering heavy metals & PAH Compounds	Imperceptible - Greenfield Site	Slight - Brownfield Site. History of industrial activities.
6.1.3	Potential to sterilise mineral resource	Imperceptible - No known mineral sources or registered quarries in close proximity	Imperceptible - No known mineral sources or registered quarries in close proximity	Imperceptible - No known mineral sources or registered quarries in close proximity
6.1.4	Potential to encounter shallow bedrock during construction (interactions with other disciplines during construction - noise, dust etc)	Imperceptible- Bedrock estimated at 10m bgl	Moderate - Outcrop in western portion of the site	Imperceptible- Bedrock estimated at 10m bgl
6.1.5	Potential impact on karst features	Imperceptible	Imperceptible	Imperceptible
6.1.6	Potential to encounter soft ground	Moderate - Quaternary mapping has noted the subsoil to be an alluvium gravel deposit consistent with the nature of soils located near rivers	Imperceptible - No alluvial deposits mapped within Site	Imperceptible - No alluvial deposits mapped within Site
6.1.7	Soils Types	Made Ground	Acidic deep poorly drained mineral	Made Ground
6.1.8	Sub Soil Types	Made Ground/Alluvial Gravel Deposits	Sandstone and shale till	Made Ground
6.1.9	Depth to rock	~10m	0 - 10m	5-10m
6.2 Soils and Geology - Route Corridors		Ferrybank	Kilbride	Shelton Abbey
6.2.1	Potential to impact on Geological Heritage Sites / County Geological Sites	Imperceptible	Imperceptible	Imperceptible
6.2.2	Potential to interact with contaminated land	Slight - Chance of encountering heavy metals & PAH Compounds (associated with made ground)	Significant - Pipeline route near existing EPA landfill site	Significant - Pipeline route near existing EPA landfill site
6.2.3	Potential to sterilize mineral resource	Imperceptible - No known mineral sources or registered quarries in close proximity	Imperceptible - No known mineral sources or registered quarries in close proximity	Imperceptible - No known mineral sources or registered quarries in close proximity
6.2.4	Potential to encounter shallow bedrock during construction (interactions with other disciplines during construction - noise, dust etc)	Imperceptible	Moderate - Outcrop shown on GSI Mapping in the vicinity of M11 motorway	Moderate - Outcrop shown on GSI Mapping in the vicinity of M11 motorway
6.2.5	Potential impact on karst features	Imperceptible	Imperceptible	Imperceptible
6.2.6	Potential to encounter soft ground	Slight - Quaternary mapping has noted the subsoil to be an alluvium gravel deposit consistent with the nature of soils located near rivers	Moderate - Quaternary mapping has noted the subsoil to be an alluvium gravel deposit consistent with the nature of soils located near rivers/marsh	Moderate - Quaternary mapping has noted the subsoil to be an alluvium gravel deposit consistent with the nature of soils located near rivers/marsh



6.3 Soils and Geology - Outfalls			Kilbride	Shelton Abbey
6.3.1	Potential to impact on Geological Heritage Sites / County Geological Sites		Imperceptible	Imperceptible
6.3.2	Potential to interact with contaminated land	Imperceptible - Ensure avoidance of river dredge dump site offshore	Imperceptible - Negotiate exact location away from gypsum/carbon ponds	Imperceptible - Negotiate exact location away from gypsum/carbon ponds
6.3.3	Potential to sterilize mineral resource	Imperceptible	Imperceptible	Imperceptible
6.3.4	Potential to encounter shallow bedrock during construction (interactions with other disciplines during construction - noise, dust etc)	Imperceptible	Imperceptible	Imperceptible
6.3.5	Potential impact on karst features	Imperceptible	Imperceptible	Imperceptible
6.3.6	Potential to encounter soft ground	Moderate - Banks of Avoca River/ Coastal Location	Moderate - Banks of Avoca River	Moderate - Banks of Avoca River
7.0 Agronomy & Landuse - Sites		Ferrybank	Kilbride	Shelton Abbey
7.1	Approximate % Reduction in overall farm holding	Imperceptible	Slight - approx. 6.5% reduction	Imperceptible
7.2	Farming Enterprise	Imperceptible - no farming enterprise	Moderate - farming enterprise	Imperceptible - no farming enterprise
7.3	Number of landowners impacted within site boundary	Slight - 1	Slight - 1	Slight - 1
7.4	Land Quality	Imperceptible - Poor Land Quality	Slight - Good Land Quality	Imperceptible - Poor Land Quality
7.5	Severance based on site location within overall land holdings	Imperceptible	Slight	Imperceptible
7.6	Potential Impacts on landholdings	Imperceptible	Reduction in farm size	Imperceptible
7.7	Crop rotation practiced	No	Yes	No
7.8	Overall Impact	Imperceptible	Moderate	Imperceptible
8.0 Noise & Vibration		Ferrybank	Kilbride	Shelton Abbey
8.1	Potential for Construction phase noise impact at Sensitive receptors	Moderate - 90 dwellings (PIR Weighted) within 300 m	Imperceptible - 0 dwellings (PIR Weighted) within 300 m	Slight - 6 dwellings (PIR Weighted) within 300 m
8.2	Potential for Operational phase noise impact at Sensitive receptors	Slight - Facility shall reach 55db(A) Daytime and 45 db(A) night at closest receptor	Slight - Facility shall reach 55db(A) Daytime and 45 db(A) night at closest receptor	Slight - Facility shall reach 55db(A) Daytime and 45 db(A) night at closest receptor
8.3	Existing Ambient Noise Climate in the Area (significant noise sources)	Close to Arklow Town Centre	Relatively rural farmland area. Borders M11 motorway	Relatively rural farmland area. Borders M11 motorway
8.4	Construction Phase Impact rating	Imperceptible	Imperceptible	Imperceptible
8.5	Operational Phase Impact rating	Imperceptible	Imperceptible	Imperceptible

9.0 Air and Odour		Ferrybank	Kilbride	Shelton Abbey
9.1	Potential for Construction Phase Air Quality Impact at Sensitive Receptors	Moderate - Approx. 339 Dwellings within 500m of Site Boundary	Slight - Approx. 5 Dwellings within 500m of Site Boundary	Slight - Approx. 10 Dwellings within 500m of Site Boundary
9.2	Potential for Operational Phase Air Quality Impact at Sensitive Receptors	Facility shall reach Appropriate Air Quality Standards at Emission Points	Facility shall reach Appropriate Air Quality Standards at Emission Points	Facility shall reach Appropriate Air Quality Standards at Emission Points
9.3	Potential for Odour Impacts at Operational phase	Moderate - Approx. 339 Dwellings within 500m of Site Boundary	Slight - Approx. 5 Dwellings within 500m of Site Boundary	Slight - Approx. 10 Dwellings within 500m of Site Boundary
9.4	Potential for Odour impacts at Construction phase	Slight – Potential to cause odour during plant commissioning	Slight – Potential to cause odour during plant commissioning	Slight – Potential to cause odour during plant commissioning
9.5	Proximity to EPA Waste Licensed facility	Imperceptible - No EPA Waste Licensed Facility within 1km of the Site	Imperceptible - No EPA Waste Licensed Facility within 1km of the Site	Imperceptible - No EPA Waste Licensed Facility within 1km of the Site
9.6	Proximity to EPA IPPC Licensed Intensive Agriculture Facility	Imperceptible - No EPA Licensed Intensive Agricultural Facilities within 1km of the Site	Imperceptible - No EPA Licensed Intensive Agricultural Facilities within 1km of the Site	Imperceptible - No EPA Licensed Intensive Agricultural Facilities within 1km of the Site
9.7	EPA Air Quality Zone Classification	Zone D Rest of the Country (Rural Air Quality Classification)	Zone D Rest of the Country (Rural Air Quality Classification)	Zone D Rest of the Country (Rural Air Quality Classification)
9.8	Wind Rose Assessment	Given the Small Area, the Wind Rose Assessment is considered to be the same for all 3 Shortlisted Sites	Given the Small Area, the Wind Rose Assessment is considered to be the same for all 3 Shortlisted Sites	Given the Small Area, the Wind Rose Assessment is considered to be the same for all 3 Shortlisted Sites
10.0 People and Communities - Sites		Ferrybank	Kilbride	Shelton Abbey
10.1	Number of residential & commercial buildings 100-200m from site boundary	Slight - Approx. 13	Imperceptible - 0	Slight - 1
10.1	Number of residential & commercial buildings within 500m from site boundary	Moderate - Approx. 339	Slight - Approx. 5	Slight - Approx. 10
10.1	Potential to impact on known community amenities and facilities within 1km from site boundary.	Moderate - Arklow leisure centre, skate park/BMX, running track & playing pitches is c. 200 m to the north and the golf links c. 500 m to the south. Bridgewater shopping centre is located c. 520 m from the boundary of the site while the Marina Village residential development lies 200 m from the site boundary	Slight - The Kilbride historic graveyard is within 500m of this site and the Arklow Town Marsh is c. 600 m to the south.	Slight - The Kilbride historic graveyard lies c. 750 m North East of this site and the Arklow Town Marsh is c. 750 m to the East.
10.1	Potential to impact on areas of Significant Population Densities	Slight	Imperceptible	Imperceptible
11.0 Traffic - Sites		Ferrybank	Kilbride	Shelton Abbey
11.1	Length of access road required	Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference
11.2	Number of crossings required	0	1- R772	2 - M11 Motorway & R772
11.3	Potential Impact on landowners	Moderate - Construction Phase	Slight - Construction Stage	Slight - Construction Stage
11.4	Works required to provide safe access entrance	Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference
11.5	Potential impact on surrounding local road network	Imperceptible	Imperceptible	Imperceptible
11.7	Frequency of accidents near entrance	Low	Low	Low
11.8	Frequency of accidents on surrounding network (indication of general road safety issues)	Low	Low	Low
11.9	Road link impacted upon by all construction traffic (excluding major routes)	Moderate	Moderate	Moderate

12.0 Planning Policy - Sites		Ferrybank	Kilbride	Shelton Abbey
12.1	Existing Land Use on site	Derelict	Agricultural	Commercial/Landfill
12.2	Site zoning	Waterfront Zone	Action Area	Employment
12.3	Local Objectives/Constraints on site	Imperceptible - No Objectives/Constraints	Imperceptible - No Objectives/Constraints	Significant - Zone B – Flood Plain. Justification Test Required
12.4	Land Uses present within 100m of site boundary	Imperceptible Impact: Varied - No Significant Difference	Imperceptible Impact: Varied - No Significant Difference	Imperceptible Impact: Varied - No Significant Difference
12.5	Zoning present within 100m of site boundary	Commercial Uses	Agricultural Uses	Agricultural Uses
12.6	Zoning present within 1km of site boundary	Active Open Space/Existing Residential	Conservation Zone / Employment (E2) / Existing Residential	Amenity/Existing Residential/Conservation Zone
12.7	Other Local Objectives present within 1km of site boundary	Imperceptible - None	Slight - SEVESO II – Inside 1000m buffer. Consultation required	Slight - SEVESO II – Inside 1000m buffer. Consultation required
13.0 Engineering Design - Pipelines		Ferrybank	Kilbride	Shelton Abbey
13.1 Pipeline Length		Ferrybank	Kilbride	Shelton Abbey
	Total Length as Open Cut	510 m	2530 m	3250 m
	Total Length as Tunnel	0 m	0 m	0 m
	Total Length in Marine Outfall	900 m	0 m	0 m
	Total Length in River Outfall	0 m	340 m	125 m
	Total Pipeline Length	1410 m	2870 m	3375 m
13.2 Power Requirements		Ferrybank	Kilbride	Shelton Abbey
	Power Requirement from Load Centre to WwTP Site (18,000 pe)	22154	188262	190292
	Power Requirement from Load Centre to WwTP Site (36,000 pe)	51156	409271	423455
	Total Average Power Requirements	36655	298766.5	306873.5
13.3 Carbon Emissions		Ferrybank	Kilbride	Shelton Abbey
	Total embodied Carbon	119,975.49	244,205.43	287,175.38
	Total Lifetime Operational Carbon	780.24	6367.01	6367.01
	Total Carbon (tonnes CO <sub>2</sub> )	120755.73	250572.44	293542.39
13.4 Health and Safety		Ferrybank	Kilbride	Shelton Abbey
	Health & Safety	Moderate - Construction of long sea outfall.	Imperceptible - no significant difference	Imperceptible - no significant difference
13.5 Access / Right of Way / Wayleaves along Pipeline Corridors		Ferrybank	Kilbride	Shelton Abbey
	Restrictions Along Pipeline Corridors to WwTP Sites	2	2	2
13.6 Crossings - Waterways, Rail, etc. along Pipeline Corridors		Ferrybank	Kilbride	Shelton Abbey
	Main River Crossings	0	0	0
	Stream Crossings	0	0	1
	Canal Crossings	0	1	1
	Motorway Crossings	0	0	1
	National Road Crossings	0	0	0
	Regional Road Crossings	0	1	1
	Railway Crossings	0	0	0
	Total Crossings	0	2	4
13.7 Potential to Impact on Physical Infrastructure along Pipeline Corridors		Ferrybank	Kilbride	Shelton Abbey
		More Impact on Local Roads	More Impact on Regional Roads	More Impact on Regional Roads
13.8 Potential to Impact on Strategic Utility Services along Pipeline Corridors		Ferrybank	Kilbride	Shelton Abbey
		Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference

13.9 Presence of Public Utilities within Sites		Ferrybank	Kilbride	Shelton Abbey
	Public Utilities within the Site	38kV station & associated underground/submarine power cables in close proximity to site	No major public utilities within the site	No major public utilities within the site
13.10 Land Ownership and Titles along Pipeline Corridors		Ferrybank	Kilbride	Shelton Abbey
		Least Ownerships	Most Ownerships	Most Ownerships
13.11 Route Traffic Management		Ferrybank	Kilbride	Shelton Abbey
		No Significant Impact after Construction Stage	No Significant Impact after Construction Stage	No Significant Impact after Construction Stage
13.12 Construction Risk along Pipeline Corridors		Ferrybank	Kilbride	Shelton Abbey
		Imperceptible - tunnelling works not necessary	Imperceptible - tunnelling works not necessary	Imperceptible - tunnelling works not necessary
13.13 Operation		Ferrybank	Kilbride	Shelton Abbey
		Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference
14.0 Engineering Design - WwTP		Ferrybank	Kilbride	Shelton Abbey
14.1 Engineering Design/Treatment Processes Required - WwTP		Ferrybank	Kilbride	Shelton Abbey
		Moderate - Assumed need for further odour control	Significant - Assumed need for tertiary treatment	Profound - Assumed need for tertiary treatment & flood mitigation works
14.2 Health & Safety - WwTP Construction		Ferrybank	Kilbride	Shelton Abbey
		Imperceptible - no significant difference	Imperceptible - no significant difference	Imperceptible - no significant difference
14.3 Remediation Works -WwTP & Pipelines		Ferrybank	Kilbride	Shelton Abbey
		Moderate - asbestos removal required	Moderate - EPA landfill remediation required (outfall pipeline)	Moderate - EPA landfill remediation required (rising main)
14.4 Capital & Operational Costs		Ferrybank	Kilbride	Shelton Abbey
	Annual Energy Costs - SBR Treatment Process	€161,000.00	€319,000.00	€319,000.00
	Annual Sludge Disposal Costs - SBR Treatment Process	€364,000.00	€284,000.00	€284,000.00
	Annual Labour & Maintenance Costs - SBR Treatment Process	€289,000.00	€289,000.00	€289,000.00
	Total Annual Operational Costs	€814,000.00	€892,000.00	€892,000.00
	Capital Costs of WwTP	€7,030,000.00	€12,332,000.00	€12,332,000.00
14.5 Carbon Emissions - WwTP		Ferrybank	Kilbride	Shelton Abbey
	Annual Carbon Emissions associated with SBR Treatment Process	824,000 kg/year	1,631,000 kg/year	1,631,000 kg/year
15.0 Land Valuation		Ferrybank	Kilbride	Shelton Abbey
15.1 Land Valuation - Sites & Wayleaves		Ferrybank	Kilbride	Shelton Abbey
	Price per area - Site	Most Expensive – 4 times more than Shelton Abbey	Lower than Ferrybank, Higher than Shelton Abbey – 2 times more expensive	Least Expensive
	Price - Wayleaves Required for Pipelines	Least Expensive (Smaller pipe lengths all laid in public roads)	Higher than Ferrybank, lower than Shelton Abbey (Longer pipe lengths)	Most Expensive (Longest pipe lengths)
	Summary	Most Expensive	Higher than Shelton Abbey, Lower than Ferrybank	Least Expensive