1 NON-TECHNICAL SUMMARY .............................................................................................................. 1

1.1 INTRODUCTION & PROJECT DESCRIPTION .............................................................................. 1
  1.1.1 Programme ......................................................................................................................... 2
  1.1.2 Pipeline Construction & Operation .................................................................................... 2

1.2 ENVIRONMENTAL IMPACT ASSESSMENT .............................................................................. 2
  1.2.1 Planning, Land Use & Agriculture ..................................................................................... 3
  1.2.2 Ground Conditions ............................................................................................................... 4
  1.2.3 Water Resources & Fisheries ............................................................................................. 5
  1.2.4 Ecology ............................................................................................................................... 6
  1.2.5 Archaeology & Cultural Heritage ......................................................................................... 7
  1.2.6 Landscape & Visual ............................................................................................................ 8
  1.2.7 Traffic & Transport ............................................................................................................. 9
  1.2.8 Air, Emissions & Noise ....................................................................................................... 9
  1.2.9 Socio-economic .................................................................................................................. 10
  1.2.10 Cumulative & In-combination Impacts ............................................................................ 11

1.3 CONTACTS .................................................................................................................................. 11

List of Tables

Table 1: Potential Cumulative (Residual) Impact Assessment – During Construction

List of Figures

Plate 1: Route Overview
This document is a Non Technical Summary (NTS) of an Environmental Statement (ES) that has been prepared for an application made by Wales and West Utilities Ltd (here on referred to as WWU), to the Department of Energy and Climate Change (DECC) for consent to construct a replacement 150mm and 100mm diameter gas pipeline between Pwllheli and Blaenau Ffestiniog, Gwynedd. The application has been submitted under The Public Gas Transporter Pipe-line Works (Environmental Impact Assessment) Regulations, 1999.

WWU has Permitted Development Rights and is therefore not required to obtain an express grant of planning permission from Unitary Authorities under The Town and Country Planning Act, 1990 for the installation of underground pipelines and the gas distribution system.

1.1 INTRODUCTION & PROJECT DESCRIPTION

As part of WWU’s statutory duty to develop and maintain a safe, efficient, co-ordinated and economical gas transportation system, they have identified the need to replace an existing stretch of steel pipeline between Pwllheli and Blaenau Ffestiniog.

The proposed pipeline replacement will be a buried structure, typically laid a minimum of 1.2m below ground level. It will be approximately 38km long, with a maximum operating pressure not exceeding 14barg.

Four new Above Ground Installations (AGIs) are also required to safely distribute the gas. AGIs are securely fenced compounds of varying sizes which accommodate the plant and equipment required to safely reduce the gas pressure before domestic use.

In addition, there will be some mechanical modifications to allow connection of the new pipeline to the existing AGIs and some AGIs will be removed completely.

An overview of the proposed pipeline is shown on Plate 1. The pipeline passes through the Local Authority areas of Gwynedd Council and Snowdonia National Park Authority.

Plate 1: Route Overview
To facilitate the construction of the pipeline a site office, pipe storage area and construction yard area will be required for office facilities and material storage. The location for this site has not yet been determined. All relevant Local Planning Authority consent and approvals will be sought.

A number of temporary access tracks will also need to be constructed to facilitate construction activities.

1.1.1 Programme
Main pipeline construction activities will be undertaken during the spring and summer months of 2011 to take advantage of better weather and daylight conditions and minimise soil and land damage from the trafficking of vehicles. It is anticipated that the pipeline will be complete and ready to bring into operation, by the end of October 2011.

However WWU have devised a programme of early works (much of which is construction within public highways) commencing September 2010. Early works have been scheduled to avoid the peak tourist season within this part of Wales. Some preparatory works, including specific protected species mitigation, may commence earlier than the date stated.

1.1.2 Pipeline Construction & Operation
WWU will employ a Main Works Contractor (MWC) to build, test and commission the proposed gas pipeline. The methods and procedures used by WWU and their contractors are based on well established best practice, Institute of Gas Engineers and Managers recommendations, British and International Standards and Regulations.

The pipeline will be owned and operated by WWU, who will also be responsible for condition monitoring and maintenance of the pipeline. Comprehensive operating procedures are in place to ensure its efficient and safe operation.

1.2 ENVIRONMENTAL IMPACT ASSESSMENT

The effect that a pipeline may have on the environment largely depends on the route chosen. Consequently, a careful route selection process has been undertaken by environmental and engineering specialists.

An Environmental Impact Assessment (EIA) has been undertaken for the proposals made by WWU. EIA is the process by which the likely significant impacts of a development are identified and assessed. As part of the EIA measures have been identified to ensure that the pipeline is constructed and operated in a manner that will minimise any adverse environmental effects.

In order to define the existing environmental conditions, relevant organisations were contacted for baseline information. This involved organisations such as the Countryside Council for Wales (CCW), the Environment Agency Wales (EAW), the Welsh Assembly Government (WAG), Gwynedd Council, Snowdonia National Park Authority, Gwynedd Archaeological Planning Services (GAPS), Cofnod and local wildlife groups. Where relevant this was followed up with a series of meetings to discuss the proposed pipeline.

As a result of the consultations, the following key issues were identified and subsequently addressed within the EIA:

- The potential impact on the special landscape, ecological and recreational value of Snowdonia National Park;
- The potential impact on the Landscape Conservation Area (designated by the Unitary Authority);
- The potential impact on numerous watercourses and their associated flood plains, the need for pollution control measures during construction, including sediment run-off, including regard to extreme weather conditions;

- The potential impact on fisheries;

- The potential impact on three nationally protected sites (Glaslyn, Coedydd Duffryn Ffestiniogg (Gogleddol) and Morfa Harlech Sites of Special Scientific Interest).

- The potential impact on two European protected sites (Lleyn Peninsula and the Sarnau and Meirionnydd Oakwood’s and Bat Site Special Areas of Conservation).

- Potential for encountering undiscovered archaeological remains.

- The potential impact on Public Rights of Way.

- The potential impact on protected species in particular the potential impact on important bat roosts at Bron-y-Garth Hospital and where crossing the Meirionnydd Oakwood’s and Bat Site Special Areas of Conservation; and,

- The potential impact on boundary features (hedgerows, tree/woodland belts and drystone walls), and associated protected species, in particular reptiles.

A number of studies and surveys have been carried out to gather further environmental and engineering information, the results of which have been used to fully inform ES.

The data collected has been used to define the existing conditions against which likely significant impacts have been measured and predicted to help define the mitigation measures required (measures to reduce negative impacts or enhance positive impacts are termed mitigation). Any impact remaining after mitigation is termed the residual impact.

Published best practice guidelines have been used, where available and appropriate, including those published by the Institute of Landscape Architects, Institute of Environmental Management and Assessment, the Institute of Ecology and Environmental Management and the Institute of Field Archaeologists.

1.2.1 Planning, Land Use & Agriculture

Construction activities will be undertaken within a fenced strip of land, known as the working width, which will generally be 20m wide, although this will be narrowed in areas with particular constraints. A wider working width (up to 30m) will be necessary at road, rail, watercourse and service crossings. The type of fencing will be agreed with the landowner/occupier and special arrangements, such as stock proof fencing or horse fencing, will be made following consultation.

Where necessary, access points will be provided to allow landowners/occupiers passage across the pipeline working width and thereby mitigate field severance.

The majority of the land crossed by the pipeline is agricultural, comprising a mosaic of improved and semi improved pasture, and arable land. The pipeline will be buried throughout its length and has been routed through agricultural land as much as possible to minimise the overall impact in terms of landscape, ecology and human disturbance. The impacts on agricultural operations are generally short-term and confined to the construction phase.

During construction, normal agricultural usage of the land within the working width will be temporarily suspended, although it is anticipated that public rights of way will be maintained or a diversion or temporary closure will be applied for.

Following the completion of all pipeline construction works, the land within the working width will be fully reinstated as near as practically possible to its former condition. Hedgerow sections removed will be replanted and field boundary and stock fences re-erected.
Normal farming operations can be resumed as soon as reinstatement has been completed and, in the case of grazing land, the reinstated pasture has re-established sufficiently to withstand grazing pressure. In certain areas fencing will provide a key tool to maximise the success of restoration e.g. on extensively grazed uplands. In these areas, fences will be maintained, until the earliest point that they no longer serve a purpose for the restoration process, subject to consultation with landowners/occupiers and CCW as appropriate.

There will therefore be no permanent loss of land, except at the AGI sites. Each proposed AGI will be situated in a 10m by 10m plot.

WWU will maintain a permanent easement within which they will have the right to construct, maintain, repair and inspect the pipeline. In most instances following construction this will not affect the existing land use although conditions will usually be attached to the Deed of Grant restricting certain activities to ensure that there is no accidental damage to the pipeline. Typically such restrictions preclude mineral extraction, the erection of buildings and the planting of deep-rooted trees. Any restrictions will be discussed fully with affected owners and occupiers during land negotiations.

1.2.2 Ground Conditions

A desk based geology and soils assessment has been undertaken for the proposed pipeline route. In addition field-based surveys were undertaken, thirty one, 200mm diameter boreholes to depths varying between 1.30m and 12.00m below the existing ground surface level to gain a better understanding of the underlying geology.

In broad terms, the solid geology consists generally of slates. Some rhyolitic tuffs are present in the western section of the route corridor, while some sandstones are present in the east. Superficial deposits along the route corridor comprise glacial till (or boulder clay), undifferentiated glacial deposits, head deposits, alluvium, peat and tidal flat deposits.

The westernmost part of the route between Pwllheli and Porthmadog is underlain by low fertility acid loamy soils of variable permeability. The soils crossed by the route corridor to the north and east of Porthmadog are wet lime rich coastal flat deposits or saltmarsh soils. Between Minfordd and Blaenau Ffestiniog the route generally crosses free draining acid loamy soils over rock except for sections in which the route passes along the base of the Vale of Ffestiniog where the route crosses wet floodplain soils of moderate fertility. Towards the town of Blaenau Ffestiniog the route crosses restored soils created by slate mining spoil.

A range of mitigation measures will be implemented to minimise potential for pipeline construction to cause damage to soil structure and/or contamination of land. The main construction requirements relating to geology will be appropriate methods of trench support and dewatering in areas where a groundwater table is identified within excavation depth. In certain locations, where the rock geology is close to the ground surface and material strength of the strata is high, rock blasting or 'breaking' may be required.

To reduce potential damage to soil structure, whenever possible, topsoil movements will only be carried out when conditions are considered suitable. This is soil type and weather dependent, but is typically between the months of April and October, when the soils are relatively dry. Agricultural Liaison Officers (ALOs) will be appointed by both WWU and their MWC and they will be responsible for ensuring that: soil handling and trafficking occurs in acceptable conditions (i.e. not on saturated soil); there is proper segregation of topsoil and subsoil; that reinstatement is to agreed standards; and that pre-existing drainage patterns and characteristics are restored through the installation of replacement land drainage, as required.

Soils will not be transferred between fields/land ownerships. The topsoil will be stripped on a field-by-field basis and stored on unstripped land in a mound running alongside the working width. Subsoil removed from the trench will be stored on the opposite side of the working width, separate from the topsoil.
If contamination is encountered during the construction phase, the EAW and the Local Authorities will be consulted and their recommendations implemented with regard to handling and disposal of excavated material and contaminated groundwater.

During reinstatement, the subsoils will be replaced in the trench over the installed pipeline, in the correct sequence to ensure that layers are compatible. Topsoil will be reinstated when in a suitable dry condition in order to reduce compaction problems.

All reinstatement measures will be discussed and agreed in advance with landowners/occupiers, and statutory and non-statutory consultees as appropriate, before being incorporated into a Project Reinstatement Plan, this will include details such as fence and boundary treatment, specifications for subsoil and topsoil reinstatement, soil preparation, post construction drainage, erosion control and re-seeding (including source and mix) requirements, soil handling, plant sources and mixes and after-care regimes. Further measures will be detailed in relation to areas subject to nature conservation designation.

There are no anticipated potential impacts on ground conditions from the normal operation of the pipeline.

1.2.3 Water Resources & Fisheries

A desk-based assessment of the potential impact of the proposed development on water resources and fisheries interest has been undertaken.

The pipeline route crosses approximately 111 watercourses, the majority of which are small ditches and streams. 19 main rivers will be crossed by the pipeline (however a number of these are of the same watercourse i.e. 7 crossings of Afon Dwyryd). Main rivers are designated by EAW, and are usually larger rivers and streams, but can include smaller watercourses of strategic drainage importance. Approximately 12.27km of the pipeline route lies within Flood Zone 3 (1%, 100 year flood event) while 0.6km falls within Flood Zone 2 (0.1%, 1000 year flood event).

The pipeline passes through three watercourses designated as Special Areas of Conservation (SACs) – the Afon Glaslyn, Afon Dwyryd (four crossings of the designation) and an unnamed watercourse north of Llan Ffestiniog. SACs are protected sites designated under the EC Directive on Conservation of Natural Habitats and of Wild Fauna and Flora, 1992 (The ‘Habitats Directive’), implemented in the UK through the Conservation (Natural Habitats, &c.) Regulations, 1994.

There are a number of local fishing clubs using the Dwyfor, Glaslyn, and Dwyryd rivers. The primary fishing interest is Sea Trout (Salmo trutta trutta) for which the fishing season spans from 20th March to 17th October.

A range of mitigation measures will be implemented to minimise potential impacts of pipeline construction on surface water quality, groundwater quality, flood risk and fisheries interests. A Project Environmental Management Plan will be produced and pollution prevention measures will be vigorously enforced by WWU. This will identify and set out ways of managing risks to sensitive water receptors including:

- the management of surface water run off, including potential for erosion;
- identification of the locations where dewatering by well-point or similar systems is likely to be needed; and
- the management of flood risk, with regard to top soil and material storage locations.

This will be used to provide site-specific guidance on the location of sediment control measures and pollution response equipment, and the most appropriate locations at which to deploy these.

Detailed mitigation measures regarding fisheries interest will be agreed with EAW before work commences, however it is likely to include the following at open cut watercourse crossings...
(mitigation measures are not proposed for trenchless construction techniques i.e. drilling the pipeline beneath the watercourse):

- crossing points will be chosen to minimise impacts and preserve valuable features as far as possible;
- works will, as far as possible, be timed to avoid the critical period for salmonid and trout migration and spawning;
- measures to minimise impacts due to sediment release or pollution will be implemented;
- open-cut crossings will be completed in the shortest time possible;
- location-specific limits to the timing of activities will be implemented in agreement with CCW and EAW particularly with regard to migrating salmon and trout;
- at designated Salmonid Fisheries under the EC fisheries Directive (78/659/EEC) there will be no in river works between 17th October and 17th April (Spawning Season). If construction is to take place in this time then rivers will need to be crossed by means of non-open cut technique and construction access obtained by temporary bridges;
- full passage of fish will be maintained as far as possible; and
- where intensive in-river works are planned a fish rescue may be required by the EAW. Further consultation should be undertaken with EAW and local anglers to determine fish rescue methodologies and consents.

The EAW (and CCW where affected by statutory nature conservation designation) will be consulted with regard to any land drainage, discharge or abstraction consents that may be required for works affecting watercourses or groundwater. All works in or adjacent to watercourses will comply with EAW requirements.

There are no anticipated potential impacts on water resources from the normal operation of the pipeline.

1.2.4 Ecology

The proposed pipeline route crosses two European protected sites (Lleyn Peninsula and the Sarnau and Meirionnydd Oakwood’s and Bat Site Special Areas of Conservation) and three nationally protected sites (Glaslyn, Coedydd Duffryn Ffestiniogg (Gogleddol) and Morfa Harlech Sites of Special Scientific Interest).

A number of studies and surveys have been carried out to gather ecological information, the results of which have been used to fully inform the EIA including:

- Extended Phase 1 Habitat Survey, including preliminary protected species survey;
- Phase 2 botanical surveys of selected areas including grasslands, NVC, river corridor, hedgerow;
- Specialist bryophyte surveys (undertaken by Martha Newton) at sensitive locations (including the Meirionnydd Oakwoods SAC);
- A walkover to assess the potential of trees along the route to support bats;
- Bat activity surveys around the Meirionnydd Oakwoods Special Areas of Conservation;
- Otter surveys;
- Water Vole surveys;
• Breeding bird surveys with the Glaslyn Sites of Special Scientific Interest; and,
• Reptile surveys.

Potential impacts on nature conservation resources are generally temporary including:
• temporary loss of habitat due to construction land-take;
• temporary displacement of species;
• fragmentation of habitats or severance of ecological corridors during construction; and
• temporary impacts on adjacent habitats (and the species that use them) for example through noise and visual disturbance.

Longer term impacts, though more likely to be avoided, might include:
• modification of habitats and introduction of undesirable species (such as injurious weeds or invasive alien species) as a result of traffic movements, reinstatement works and landscaping;
• changes in soil conditions through stockpiling, re-grading etc.;
• physical damage to watercourses and downstream impacts as a result of sediment release and pollution;
• alterations to drainage affecting wetland habitats in adjacent areas; and
• degradation of habitats that cannot be easily recreated (e.g. mature hedgerows).

Where such impacts occur mitigation measures will be adopted to avoid, minimise or offset impacts.

To minimise impacts on designated sites, a pipeline route has been chosen which will require the least amount of land-take within the designation and which will avoid the most sensitive locations, standard construction practices have also been amended to reduce impact. Where possible the timing of construction activities has been programmed to further reduce impact.

A mitigation strategy has been developed in areas where protected species have been identified; this strategy will be implemented prior to construction. Once mitigation measures have been implemented no residual impacts are predicted.

No impacts are predicted to occur during operation of the pipeline.

1.2.5 Archaeology & Cultural Heritage

A number of studies and surveys have been carried out to gather archaeological and cultural heritage information for the project, the results of which have been used to fully inform the ES including:
• an archaeological desk-based assessment;
• field reconnaissance survey; and,
• archaeological geophysical survey.

The following pipeline construction activities have the potential to impact on archaeological and cultural heritage remains:
• preparation of the working width, particularly temporary fencing and the installation of land drains;
- topsoil stripping, including the creation of access points and temporary compounds, as well as the strip for the pipeline working width;
- excavation of the pipe trench, including any launch or reception pits for non open-cut crossings, and benching of areas of side slope; and
- reinstatement of the working width, particularly ripping of subsoil during re-instatement.

The proposed pipeline crosses two Registered Historic Parks and also crosses a number of field boundaries. Three Landscapes of Outstanding Historic Interest are crossed by the proposed pipeline: the Llyn and Bardsey Island Landscape, the Landscape of Aberglaslyn and the Landscape of Blaenau Ffestiniog. The pipeline has been selected to use existing gaps between trees and in hedgerows to minimise impact, and crosses these landscapes at the point where they are already impacted on, in terms of current land use. A range of mitigation measures will be implemented to address impacts on landscape features including the recording buried features associated with the historic landscape during the archaeological watching brief.

An assessment strategy is proposed to allow for further information to be obtained for proposed sites where an archaeological impact is probable or possible. The strategy will primarily be undertaken by archaeological trial trenching. After the programme of staged assessment and mitigation has been implemented the vast majority of the known archaeological and cultural heritage features will remain unaffected by the proposed pipeline.

There are no anticipated potential impacts on the archaeological and cultural heritage resource from the normal operation of the pipeline.

1.2.6 Landscape & Visual

A landscape and visual assessment has been carried out for the project. Approximately 10.8km of pipeline is routed through Snowdonia National Park mainly through pasture fields. The pipeline route within this section of the National Park meanders between areas of ‘woodland’ within the Vale of Ffestiniog, which are of particular importance for conservation. The pipeline also passes through two Landscapes of Outstanding Historic Interest. The development will have an impact on three sections of Landscape Conservation Area; Pwllheli-Criccieth-Porthmadog, Porthmadog-Penhyndeudraeth and Cwm Bowydd, Blaenau Ffestiniog. The proposed pipeline will directly impact all of these areas during construction; in particular Cloddiau, coppices and watercourses. All of these areas are considered to be of local importance.

The potential landscape and visual impacts of constructing a pipeline may be broadly defined as follows:

Landscape Impacts:
- direct impacts upon specific landscape elements within and adjacent to the pipeline route, e.g. grasslands, field boundaries, trees, woodlands, and watercourses;
- effects on the overall pattern of the landscape elements which give rise to the landscape character of the site and its surroundings; and
- impacts upon any special interests in and around the site such as designated landscapes.

Visual Impacts:
- direct impacts of the development upon views in the landscape; and
- overall impact on visual amenity.

One of the objectives of reinstatement of the pipeline route is to return the visual and physical integrity of the landscape, as closely as possible, to its previous condition. Therefore, the impacts on landscape character are assessed as being temporary and indirect.
After construction, the degree and duration of any landscape or visual impact will be determined by the nature of the landscape crossed. For example, arable land, grasslands, hedgerows and woodlands, respectively, take an increasing length of time to re-establish following reinstatement. Once construction is complete the pipeline will be buried and the land will be reinstated to the original land use and boundaries replaced. The visibility of the pipeline route will reduce over time as vegetation becomes established and replacement boundaries weather.

A Project Reinstatement Plan will be developed jointly by WWU and the MWC, taking into account the specific characteristics of the features affected based on survey results and discussions with consultees and landowners/occupiers.

1.2.7 Traffic & Transport

Since the area is principally rural, the majority of roads are minor. The pipeline crosses a number of ‘A’ roads as follows: the A487 (on four occasions), the A496 (on two occasions), the A497 (on two occasions and another on the prior route of the A497), the A4085 and the A498.

These A Roads are supplemented by an extensive network of minor roads. The proposed pipeline route crosses one B road (B4411) and 12 other minor roads. A number of farm access roads and private tracks are also crossed by the proposed pipeline.

The proposed pipeline route crosses a disused railway line and operational railway lines in three locations, however it is anticipated that these crossings will be constructed using trenchless techniques.

Traffic generated will be associated almost exclusively with pipeline construction as there will be little traffic generated during the pipeline operation and maintenance period. The construction of the pipeline will result in a temporary increase in traffic flow in order to enable personnel, materials and equipment to be delivered to various points along the route. Pipeline construction will therefore have a localised temporary impact on road users on roads which are used to access the pipeline working width.

Early works have been scheduled in a number of areas including 2.2km of pipe within the A487 from Bron-y-Garth Hospital, through Porthmadog to the entrance of the campsite to avoid the peak tourist season within this part of Wales.

A Traffic Management Plan (TMP) will be prepared to control and minimise the impacts of construction traffic on roads and other road users. The draft TMP will be agreed with the relevant Highways Authorities and the emergency services. The TMP will aim to:

- establish the type of construction traffic permitted to use access routes to the working areas and indicate areas of limited or no access to construction traffic;
- for each road crossing point identify any restrictions on traffic crossing or entering and leaving the working width;
- indicate where additional accesses have been arranged other than where the pipeline crosses a public highway;
- detail the traffic control measures (e.g. stop-go boards, traffic lights) and signage required taking account of major tourist traffic flows; and,
- take account of major sources of materials and waste sites, as appropriate.

1.2.8 Air, Emissions & Noise

Solid wastes, liquid effluent, discharges to watercourses, emissions to air, light and radiation and unplanned emissions and spillages that may arise from the construction, commissioning and
operational phases of the proposed pipeline are described in the ES and any significant impacts assessed and where relevant mitigation measures proposed.

An assessment of the expected noise and vibration from construction operations has been prepared and developed using the current best estimate of activities, scheduling and plant utilisation based on experience from similar pipeline installations. The information and noise source data presented in BS 5228 forms the basis of the noise levels quoted in the ES.

The majority of potential emissions are predicted to occur during the construction phase of the pipeline. The air quality impacts generally associated with pipeline projects and of low significance. It is unlikely this project will generate any significant air quality issues.

Mitigation measures incorporate relevant statutory and non-statutory legislation and guidance, such as BS 5228, and the EAW’s Pollution Prevention Guidelines. Mitigation measures employed successfully on previous pipeline projects have been recommended, where applicable and relevant.

In order to minimise any noise impacts on local people, the MWC will be required by WWU to:

- consult Environmental Health Officers (EHOs) to identify noise sensitive areas and agree any necessary mitigation measures in advance of construction works;
- regulate noise emissions from site in accordance with the appropriate standards;
- maintain close liaison with nearby residents;
- adhere to agreed working hours; and,
- maintain plant regularly, ensure it is accurately adjusted and noise abatement measures (e.g. covers) are fully operational and used correctly on site.

Impacts are not anticipated during the normal operation of the pipeline.

1.2.9 Socio-economic

Construction of the pipeline is anticipated to require a labour peak of up to 100 personnel on site during the busiest period, including all contractors and sub-contractors. This is likely to have a temporary positive impact on workforce patterns and sources of employment. There will be temporary positive impacts on local economies arising from construction of the proposed pipeline. There will be a temporary beneficial impact on local suppliers of construction plant, fencing, reinstatement materials, fuel, consumables, aggregates, seed mixes, timber, portaloos, skip hire, office equipment etc. There will also be economic benefits arising from expenditure by the workforce on accommodation, subsistence and consumables. It is anticipated that the workforce will be on-site for a period of 14 months.

The main potential impacts on tourism and recreation will comprise the temporary loss of visual amenity and tranquillity in areas immediately adjacent to the pipeline and wider possible impacts of construction traffic on roads, particularly main tourist routes. WWU and the MWC will discuss the need for, and form of, mitigation measures to minimise any indirect impacts on tourist sites (for example, from traffic) with owners and operators of sites, centres, houses, gardens, etc open to the public. This could comprise signage and amendments to construction traffic routes and times, as appropriate.

Public Rights of Way (ROW) to be crossed by the pipeline will generally be kept open during construction, with the exception of a short period when the trench is being excavated and the pipe laid, when they will be closed or diverted for safety reasons. Any impact is likely to be temporary due to the transient nature of the pipeline construction process, and the small section of right of way to be crossed by the pipeline relative to the overall length of the right of way.

No impacts are predicted during the normal operation of the pipeline.
1.2.10 Cumulative & In-combination Impacts

While a single activity may itself result in a minor impact, it may, when combined with other impacts (minor or significant) in the same geographical area, and occurring at the same time, result in a cumulative impact that is collectively significant. Gwynedd Council and Snowdonia National Park Authority have been consulted to identify large-scale developments with the potential for cumulative effects in combination with the proposed pipeline.

The proposed A487 Porthmadog, Minffordd and Tremadog Bypass has been identified with the potential for cumulative effects in combination with the proposed pipeline. There is the potential for an overlap of construction activities associated with both proposals between September 2010 and October 2011.

Bearing in mind that the pipeline would be a buried structure and that the land would be reinstated on completion of construction activities, it is considered that the proposed pipeline will not add to any in-combination effects during its operational phase.

The table below summarise the potential residual cumulative impacts during construction i.e. those that remain after mitigation measures have been adopted. The use of shading in the tables below shows the adverse (shades of pink/red) or beneficial (shades of green) residual cumulative impacts for various aspects of the environment. As indicated in the tables, the majority of potential cumulative impacts have been assessed as of no significance.

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<tr>
<th>Aspect</th>
<th>Proposed Pipeline</th>
<th>Porthmadog, Minffordd &amp; Tremadog Bypass</th>
<th>Cumulative Impact (Residual)</th>
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1.3 CONTACTS

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