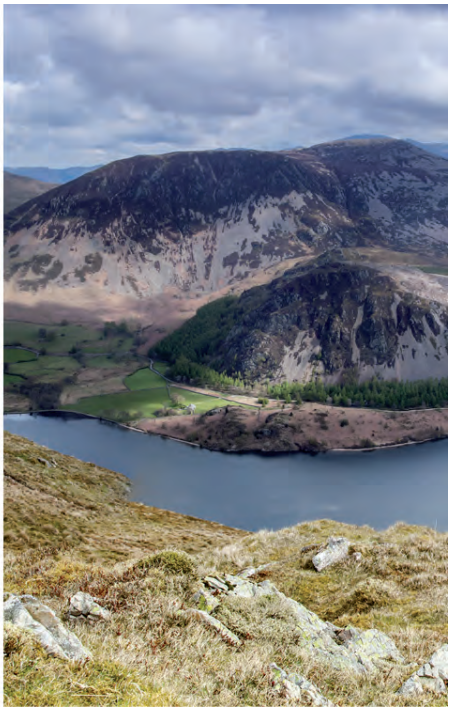
South Egremont Groundwater Scheme

Non-Technical Summary



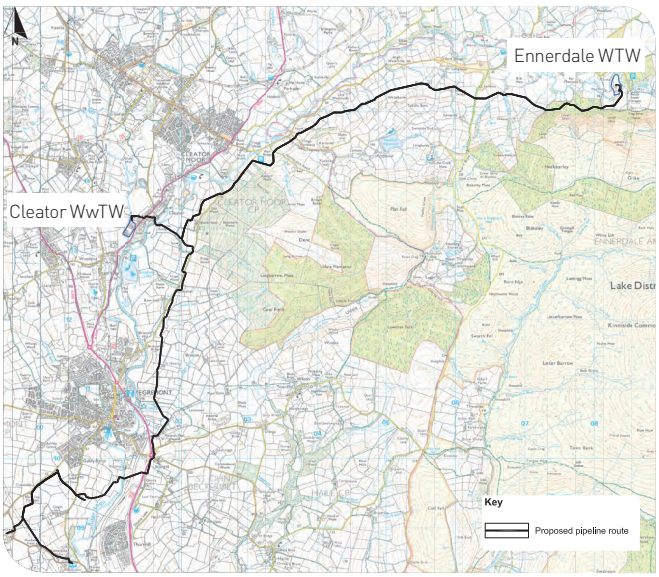
Purpose of this Non-Technical Summary

This report presents, in non-technical language, the findings of an Environmental Impact Assessment (EIA) that has been undertaken in connection with the proposed South Egremont Groundwater Scheme. The Scheme is required to ensure that United Utilities plc (UU) meets its obligations to provide water to its customers in the service area known as the 'West Cumbria Resource Zone' and involves the construction of a new pipeline and four new groundwater boreholes and associated infrastructure.

The full report, known as an Environmental Statement, has been submitted with the planning applications to Copeland Borough Council and the Lake District National Park Authority.

Location

The scheme is located around the town of Egremont in Cumbria. Merry Hill, Kell Head and Black Ling boreholes are situated approximately 2.5km to the south of the town with Gulley Flatts being just over 200m from the south western boundary of the town. In total, approximately 13km of new pipeline will be laid between Gulley Flatts borehole and Ennerdale Water Treatment Works (WTW). The pipeline will predominantly pass through open countryside and agricultural fields, although there will be shorter sections where the pipeline will be installed in existing roads. The pipelines will carry raw water from the boreholes to Ennerdale WTW and return process waste water for treatment at Cleator Wastewater Treatment Works (WwTW).



Site location

Reasons and Need for the Development

United Utilities has a statutory responsibility to provide water and waste water services to its customers. It is also subject to licenses which dictate how much water it can extract from ground and surface water sources. The Environment Agency will be further restricting the amount of water UU can take from Ennerdale Water; this is to allow more water to flow into the River Ehen than into the water supply network. This is required to protect habitats in the River Ehen catchment, which is protected at a national level as a Site of Special Scientific Interest (SSSI) and at a European level as a Special Area of Conservation (SAC. This restriction on abstraction will result in a shortfall of drinking water resources in West Cumbria.

The proposed development is therefore needed to meet UU's obligations to its customers through providing an alternative source of drinking water and will also help protect the important habitats along the River Ehen.

Alternative Options considered

UU has considered a range of potential options for balancing water supply with the needs of its consumers in the West Cumbria Zone. These included demand management approaches such as compulsory water metering, reducing leakage and improving domestic and commercial water efficiency as well as ways to increase supply.

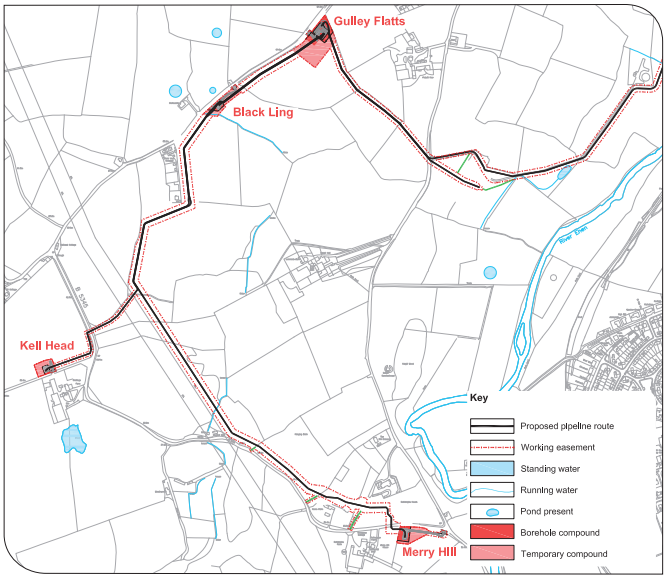
It was concluded that no single measure would safely resolve the supply–demand balance and the package of measures outlined is therefore proposed.

Development Proposals

The development comprises the following main elements:

- Conversion of four temporary groundwater boreholes to permanent boreholes at Merry Hill, Kell Head, Black Ling and Gulley Flatts;
- A new Gulley Flatts Transfer Pump House and Valve House together with borehole flush discharge pipe;
- A Raw Water Pipeline from Gulley Flatts Pumping Station to Ennerdale WTW;
- Pipeline connections and acid dosing facilities within Ennerdale WTW;
- Process Waste Water Connection from Ennerdale WTW to Cleator WwTW;
- Main temporary compound at Low Waterside; and
- Further temporary compounds at the existing sites and working areas, including a pipeline typical temporary working width of 18m (locally widened in some places) and a new pipe storage compound near Nook Farm, plus a number of temporary accesses.

Location of proposed boreholes



Planning Policy Context

The pipeline is situated mainly in Copeland District with the final short stretch to Ennerdale being within the Lake District National Park. The development plan for the scheme therefore comprises The North West Regional Spatial Strategy, The Lake District Core Strategy 2010 (LDCS); the saved policies of the Cumbria and Lake District Joint Structure Plan (CLDJSP); and the saved policies of both the Lake District National Park Local Plan (LDNPLP) and the Copeland Local Plan (CLP). The policies in the National Planning Policy Framework (NPPF) also guide development.

The scheme lies within a number of land use designations identified by the relevant development plans. These are listed below:

- Landscapes of County Importance; Kell Head and Merry Hill boreholes; east of Cleator (CLP Policy ENV 6).
- Lake District National Park (LDNPCS Policy CS06 West Distinctive Area)
- Ehen-Keekle Valley large scale tourist development CLP Policy TSM2
- Special Area of Conservation and a Site of Special Scientific Interest - River Ehen at Cleator
- Protection of River Corridors CLP Policy NE18.

There are also a range of general policies which seek to promote sustainable development and protect the environment and human health.

The proposed pipeline scheme is designed to minimise environmental harm whilst providing a supply of water which is essential for human wellbeing and the economic development of the area. In those respects the proposed scheme is compatible with the principles of sustainable development which underpin the National Planning Policy Framework and the Local development Plans.

In light of the benefit that this scheme will bring to securing water supply and the mitigation measures to be incorporated, it is considered that the proposal is in accordance with planning policies in both Copeland District and the Lake District National Park.

Environmental Impact Assessment

Due of the scale and nature of the development, an Environmental Impact Assessment (EIA) has been undertaken in respect of the proposed development. The purpose of the EIA is to identify how people and environmental resources (collectively known as receptors) could be affected by the proposals and to put forward measures (often referred to as mitigation) that will avoid, minimise or offset any negative effects. To achieve this, an Environmental Statement (ES) has been prepared following a consultation (or scoping) exercise, involving the planning department of Copeland Borough Council, the Lake District National Park Authority and other key organisations. Details of the proposals were widely circulated to these bodies and their responses used to inform the scope and content of the EIA. Experts in a wide range of disciplines carried out the environmental studies, and the findings are summarised below.

Hydrology and Hydrogeology

The assessment of the development site's surface water and groundwater has identified the receptors – environmental features or people with potential to be affected by the scheme – as the River Ehen, other watercourses, groundwater, and people and property. The planning applications are also accompanied by a Flood Risk Assessment which considers the risks to people, existing property and infrastructure from flooding by surface water from the borehole sites and the pipeline easement.

The River Ehen is a SSSI and SAC, designated for its freshwater pearl mussel and Atlantic salmon populations. A Principal Aquifer in the bedrock south of Egremont could also potentially be affected.

The construction of the pipeline crossings of the River Ehen and its tributaries has the potential for effects on water quality given the very high sensitivity of the receptors. Measures will be taken to minimise these effects as far as possible.

The proposed South Egremont Groundwater Scheme has been designed to minimise effects on the water environment, and this combined with the adoption of the proposed mitigation measures, will ensure that the surface water and groundwater receptors are protected from potential adverse effects as far as possible. These include measures to minimise the risk of flooding, the risk of contamination and the risk of changing morphology on the River Ehen and its tributaries.

Land Quality and Soils

Land Quality and soil conditions at the site of proposed development were established by means of a desk study review of information and an intrusive site investigation involving the collection and analysis of soil and water samples from the site.

The pertinent historical features identified by the desk study along the proposed route are summarised below:

- Historical iron ore, lead and copper mining, specifically at Florence, Cleator Moor WwTW , Hazelholme and Kinniside (all abandoned);
- Historical railways, specifically mineral railways for local mining around Florence mine, Mere Beck passing a historical lead mine at Hazelholme on the west bank and to north of Cleator Moor WwTW (all abandoned);
- Areas of infilled ground associated with road construction.

The analysis of samples taken from the site revealed certain areas of contamination due to the former uses identified above. As a result, a number of potential negative effects on / from land quality have been identified in both the construction and operational phases of the proposed development. However, all of these are capable of being reduced to an acceptable level by appropriate mitigation, such as:

- Management of stockpiles of excavated materials to prevent runoff and/or dust blown release;
- Ensuring that all site personnel are wearing the appropriate Personal Protection Equipment (PPE);
- The prevention of water paths being created between fields and watercourses to prevent runoff of potentially contaminated materials;
- Checks to ensure only suitable, uncontaminated materials are re-used onsite;
- The removal and/or treatment of excavated materials not suitable for re-use on site or recycling.

The conclusion of the effects evaluation for land quality is that, following the implementation of suitable mitigation measures, all predicted effects will be 'not significant'

Biodiversity

Desk-based and site surveys identified the biodiversity receptors which could potentially be affected by the Scheme. The biodiversity assessment focussed on these, as follows:

- Potential effects on River Ehen SAC/SSSI, including populations of freshwater pearl mussels and Atlantic salmon and supporting watercourses/tributaries;
- Potential effects on great crested newt populations located within the area of proposed development;
- Temporary loss of Lowland Meadow habitat during the construction phase; and
- Potential loss and/or severance of hedgerow habitat, including species-rich hedgerows.

The proposed groundwater scheme will alleviate pressure on Ennerdale Water, allowing compensation releases into the River Ehen to be increased. This is proposed specifically to safeguard the Ehen's pearl mussel population, but is also likely to have a limited positive effect on salmon spawning habitats, which will be better protected during any spring periods of low flow or dry spring periods.

Pearl Mussels

Mitigation measures will ensure effects on the River Ehen SAC are minimised. Watercourse crossing works will be completed outside the period when salmonids spawn and their larvae develop (June to September). Only where necessary, crossings may be constructed during this period and the pipe connected at a later date. Standard pollution prevention measures such as those listed below will be utilised, including:

- locating refuelling areas away from watercourses;
- the use of fuel bunds/booms;
- emergency spill kits/procedures during soil stripping, pipe-laying and construction;
- silt control measures including the use of straw bales and settlement tanks;
- limiting the number of water crossings constructed at any one time to minimise sediment input;
- ecologist supervision at watercourse crossings to monitor turbidity levels.

The Scheme will result in limited temporary loss of some great crested newt habitats. This will be fully restored following completion of the pipeline. Additional measures, such as the trapping and relocation of newts within the area of works and the installation of fencing to exclude newts from this area, will also minimise the risk of harming newts.

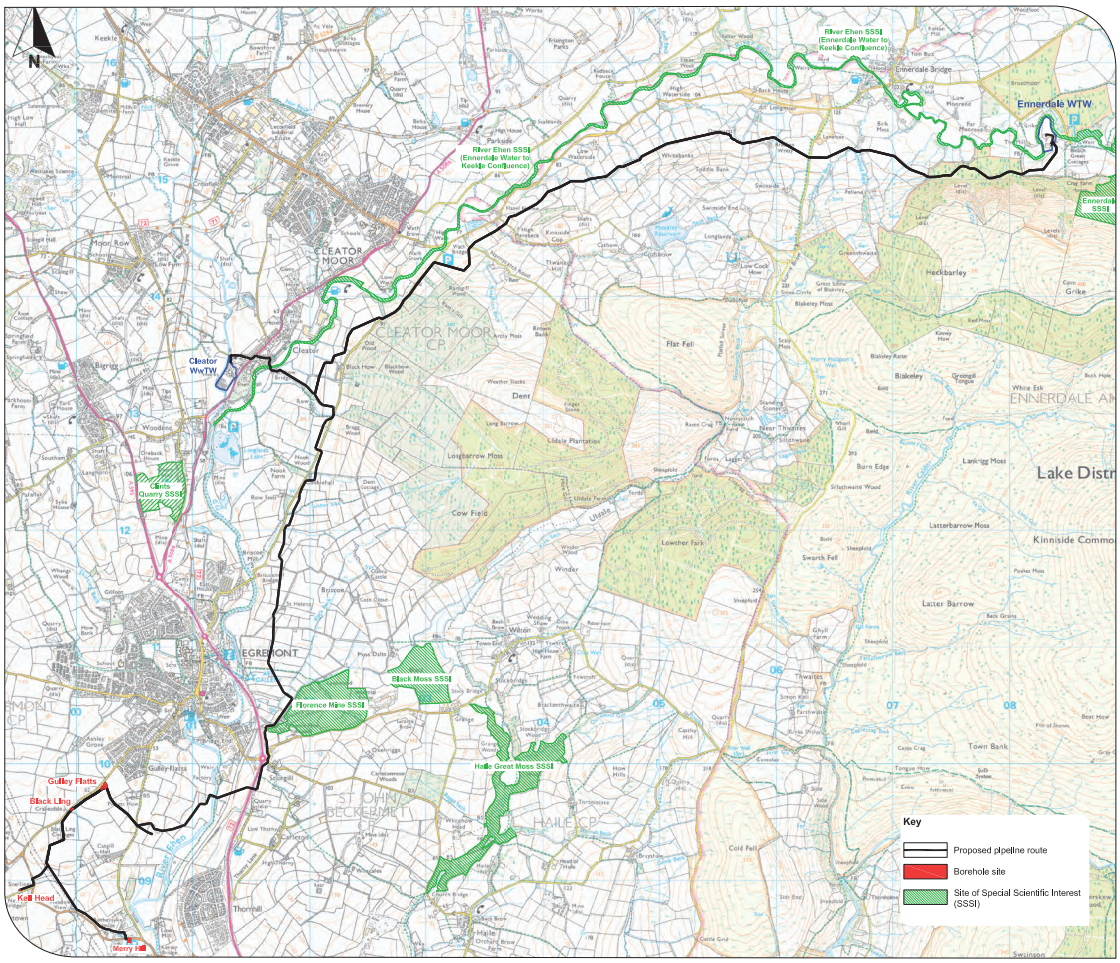
Although some lowland meadow habitat will be lost due to construction works, measures will be implemented to ensure this loss is minimised, and these habitats will be reinstated following completion of the works.

Many of the hedgerows that are crossed by the route of the proposed pipeline are species poor or defunct. However the route crosses 63 hedgerows that are species-rich. Where possible existing gaps in hedgerows will be used for laying the pipeline. Where removal is required this will be limited to approximately 6m where possible. All hedgerows will be reinstated using native locally occurring species, planted in a double row and will be protected within plastic sleeves and stock-proof fences.

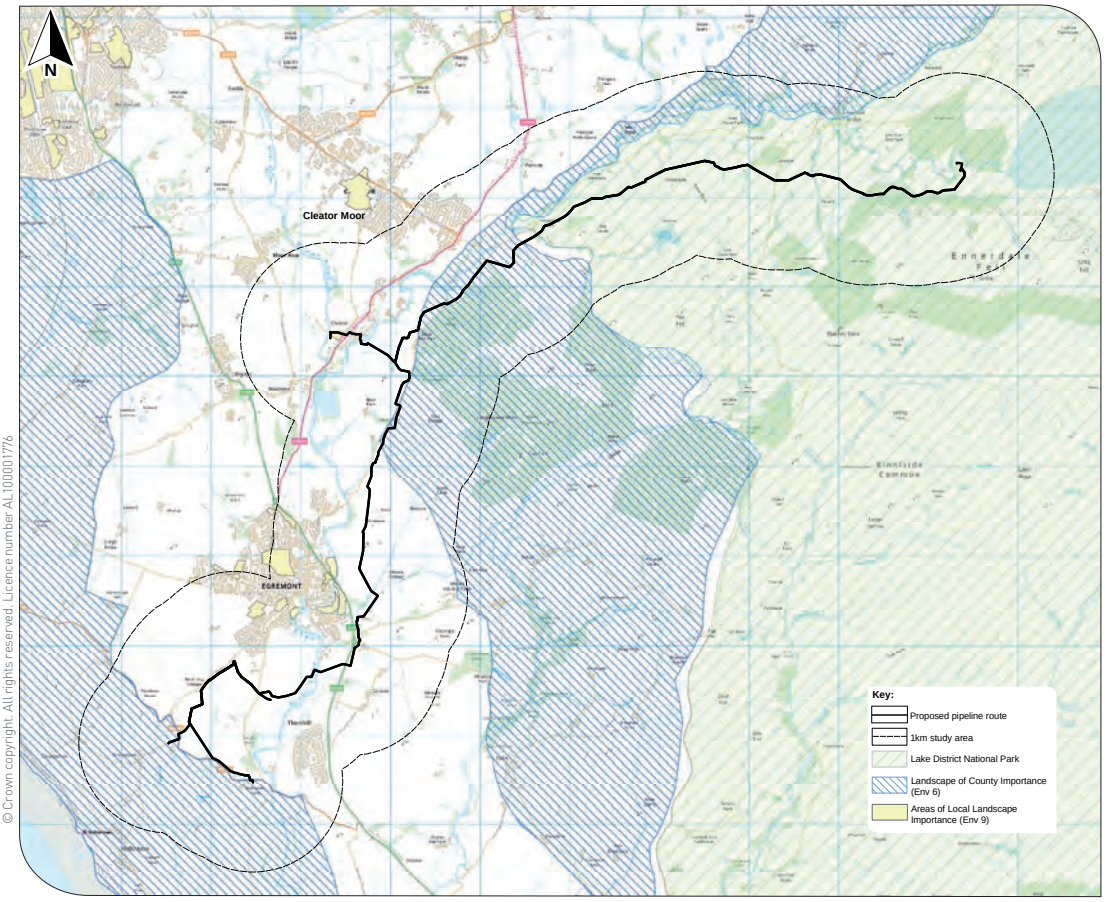
The development is predicted to have no significant negative effects on biodiversity. Furthermore the scheme is intended to alleviate pressure on water resources in Ennerdale Water, which will enable compensation flows into the River Ehen to be increased. This will improve protection of lower flows and will have a limited positive effect on freshwater pearl mussels, Atlantic salmon and other fish species.

Historic Environment

There are no Scheduled Monuments, Conservation Areas, Registered Parks and Gardens or Registered Battlefields along the route or within the 200m search area. There are no listed buildings along the route but three Grade II buildings are recorded within the search area: the Church of St Leonard; Lych Gate and Quadrant Walls and Old Hall and Forecourt. There are also a number of known non-designated heritage assets within the search area. The



SSSIs near the Proposed Scheme



Landscape Designations

Western Fell Edge from Ennerdale Bridge to Cleator Moor is a designated Historic Landscape.

The assessment has concluded that the proposed development would not result in any significant adverse effects on cultural heritage resources. Any potential noise and dust effects during construction will be temporary and short-term and minimised through mitigation measures as far as possible. No designated heritage assets will be affected by the Scheme.

Landscape and Visual

The assessment has looked at the character of the landscape, landscape designations in the area and landscape elements within the site boundary and the surrounding area. Part of the scheme lies with the Lake District National Park, whilst other elements of the development are located within locally-designated Landscapes of County Importance.

The nature of the proposed pipeline is that during its operational period there would be no requirement for above ground elements apart from the borehole kiosks and the pumping station at the southern end of the route close to Egremont. Re-establishment of crops and pasture along the reinstated pipeline route is likely to be complete within one or two growing seasons. Any landscape elements lost during construction, such as trees and hedgerows, will be replaced. The above ground facilities would be screened by native vegetation where appropriate, or designed to fit in with local buildings.

The evaluation of the landscape effects likely to be generated during the construction period concludes that there will be no significant landscape effects as a result of the construction activities. This conclusion is based upon factors including:

- The short-lived nature and small-scale of the construction works, temporary access routes and temporary compound areas;
- The limited losses of existing landscape elements that will be required by the construction works. Lost elements would be either abundant in the local landscape i.e. pasture, or widespread i.e. short sections of hedgerow;
- The reinstatement of close to all lost landscape features such as hedgerows, trees and pasture or arable land.

The visual assessment has assessed potential construction period effects for 13 settlements, 90 individual properties or small groups of properties, 22 public rights of way, four long distance footpaths, two cycle routes, six Recreational and Public Amenity Areas, four prominent or elevated viewpoint locations, ten transport routes and three business and employment locations. Of these, only two are likely to experience significant visual effects, these being residents of East Dent Cottages and Cobblehall due to construction works passing adjacent to the properties. At Cobblehall, the presence of Nook Farm temporary construction compound relatively close to its front is also a factor.

The limited above ground components during the operational phase (borehole and pumping station sites) will not generate any significant visual effects due to their relatively small scale in comparison to other structures and buildings typical of the area.

Photo of existing view for Gulley Flatts

Photomontage of view from Gulley Flatts (Year 10)

Noise

The proposed development may introduce new, albeit temporary, noise sources into the area (e.g. plant and equipment used for construction) and may lead to temporary increases in existing noise sources (e.g. traffic noise). The assessment of construction noise impacts has concentrated on noise from fixed and mobile plant at existing receptors close to the proposed pumping station, borehole and pipeline route) and construction traffic noise (potential increases in ambient road traffic noise at existing sensitive receptors due to construction HGV). It has focussed on the likely impacts at the closest sensitive receptors.

The noise sensitive receptors which have the potential to experience significant noise effects are primarily residential dwellings located in proximity to the development site. Six locations were identified which were considered representative of the closest sensitive receptors:

1. Cop Lane (B5345) – representative of receptors close to the proposed Merry Hill borehole such as Rothersyke Farm and Rothersyke House;

2. Snellings Farm – representative of receptors close to the proposed Kell Head borehole such as Brook Cottage;

3. Kings Drive – representative of receptors close to the proposed Black Ling borehole and Gulley Flatts borehole and Pumping Station such as Picket How Farm, Crakesdale, Black Ling Cottages and dwellings on Royal Drive;

4. Scurgill Terrace – representative of receptors close to the proposed pipeline route such as those at Scurgill Terrace;

5. Millers Walk – representative of receptors close to the proposed pipeline route such as those at Millers Walk; and

6. Nannycatch Road – representative of receptors close to the proposed pipeline route such as those at Hazel Holme.

Ambient and background noise surveys were undertaken in order to assess the impact of construction noise resulting from the development. The dominant noise source at each site was road traffic.

The assessment concludes that significant noise effects are likely to be experienced at a number of properties during construction. However it is based on a worst case scenario of all plant operating at the closest point to the receptor. This is unlikely to happen and as plant moves across the site the volumes experienced at receptors will be less. In addition, measures will be incorporated to ensure that noise levels at nearby properties fall within acceptable limits. Measures to be employed during construction to reduce noise emissions include:

- Use of plant fitted with effective silencers and noise insulation;
- Use of SMART reversing alarms where practicable to reduce the effect of reversing bleepers on site vehicles;
- All plant to be regularly serviced, maintained and operated in accordance with manufacturer's instructions. Machines that are intermittently used should be shut down in the intervening periods between work or throttled down to a minimum;
- Appointment of a site contact to whom complaints/ queries about construction activity can be directed. Any complaints to be investigated and action taken where appropriate;
- All construction activity to be undertaken in accordance with the noise & vibration good practices;
- Local residents should be kept informed of general site activities, including working hours. A good example of this approach would be during the initial and final stages of construction where plant would be operating close to the site boundary;
- Where possible noisier construction working to be limited to 08:00-18:00hrs (Mon-Fri);
- There should be adequate planning to ensure that lengthy operations e.g. concrete pours, can be completed within the agreed working hours;
- All reasonable steps should be taken to limit the number of vehicles waiting to deliver to the site;
- Activities close to sensitive receptors should be undertaken as efficiently and as quickly as reasonably possible; and
- With the exception of enhanced generators, pumps and electric plant, all plant and equipment should be shut down when not in use.

The magnitude of increased traffic as a result of the scheme is considered to be low because of the number of vehicles already using the local road network. This means that increased traffic volumes would not have significant noise effects.

Air Quality

The pipeline and boreholes are located in a rural area with a few residential dwellings nearby. The majority of the dwellings in the vicinity of the site are farms.

During the construction and operation of the proposed development the most likely air quality effects are likely to result from dust during the construction phase. With this in mind, measures will be put in place including:

- Damping down of unsealed surfaces and stockpiles by water bowsers;
- Ensure no run-off of water or mud from the construction site;
- Minimise unnecessary handling of materials;
- Wheel and body washing of mobile plant before they leave the site;
- Sheeting of construction material lorries and covering stockpiles of materials.

With the implementation of these measures, the proposed development would not result in any significant effects from dust.

There are no major sources of air pollution in the area (roads and industrial sources) and the local authority has not declared any air quality management areas (AQMAs). The proposed development would not result in any major sources of air pollution or any significant air quality effects.

Traffic and Transportation

The traffic and transport assessment has considered potential effects on six receptors which are considered representative of the main routes to the construction area.:

- Receptor 1 – A5086 (Frizington);
- Receptor 2 – Unnamed Road between Cleator Moor and Ennerdale Bridge;
- Receptor 3 – A5086 (Cleator Moor);
- Receptor 4 – A4086 (Cleator);
- Receptor 5 – Main Street (Egremont); and
- Receptor 6 – Greendykes (Egremont);

Only potential effects during the construction phase have been considered, due to traffic movements during the operational phase being low in volume. The construction phase is estimated to last approximately 19 months. In terms of total traffic the peak month is Month 5 where significant construction is taking place at the borehole sites and the pipelines around Egremont.

The impact of construction-related traffic on the proposed access routes for general construction traffic and staff traffic (using local roads such as A66, A5068, A595 and local rural roads) has been calculated, in percentage terms, relative to the forecast background traffic in 2013 or 2014.

The percentage impact for receptors shows that it is predicted that there will be an increase in traffic flows during the assessment period of:

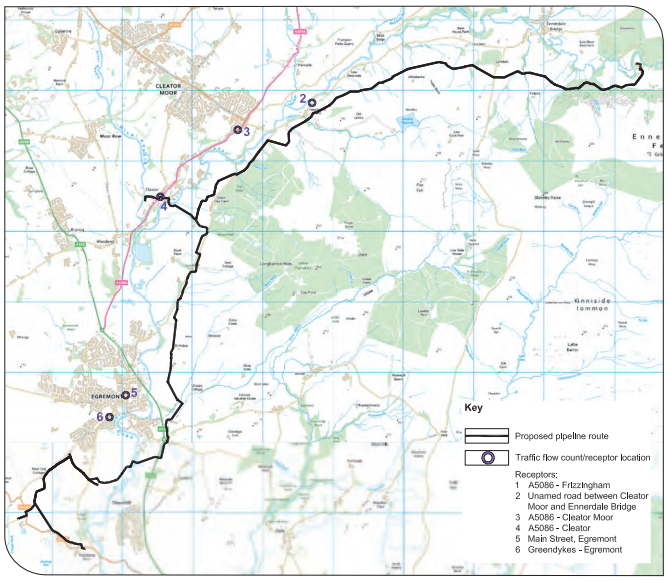
- Survey Site 1 – A5086 (Frizington): Increase in total traffic by 0.5% % and an increase in HGVs of 6.7%;
- Survey Site 2 – Unnamed Road between Cleator Moor and Ennerdale Bridge: Increase in total traffic by 15.8% and an increase in HGVs of 633.3%;
- Survey Site 3 – A5086 (Cleator Moor):Increase in total traffic by 1.8% and an increase in HGVs of 40.8%;
- Survey Site 4 – A4086 (Cleator): Increase in total traffic by 1.1% and an increase in HGVs of 32.7%;
- Survey Site 5 – Main Street (Egremont): Increase in total traffic by 1.3% and an increase in HGVs of 23.8%;
- Survey Site 6 – Greendykes (Egremont): Increase in total traffic by 3.1% and an increase in HGVs of 82.9%.

It should be noted that at sites 2-6 the existing flows of HGVs are very low and as such the percentage impact of the HGVs is inflated significantly. Also, the effects will be temporary and will only be for the duration of the construction period.

Potential traffic and transportation effects will be reduced as far as reasonable through the development and implementation of a Traffic Management Plan (TMP). The TMP will detail environmental measures aimed at minimising adverse environmental effects associated with traffic and transport during construction and will be agreed between the developer, the contractor, the local highway authority and any other relevant parties prior to the start of construction.

The TMP will include details on car parking, measures to encourage multi-occupancy of vehicles bringing construction personnel to site, temporary road signage requirements, off-loading proposals, construction traffic routeing and timing of deliveries. It is envisaged that, during construction, deliveries will be co-ordinated by a logistics manager to prevent queuing of vehicles.

Liaison between local residents and UU will be undertaken as part of the TMP, including the scheduling of major traffic movements to reduce impact on local residents where possible.



Traffic flow/count and receptor locations

The temporary nature of the construction works, the relatively low increase in total traffic and the implementation of mitigation measures via a TMP will ensure potential effects on general road safety, including on drivers and pedestrians, will be minimised as far as possible. It is considered that the Scheme will not result in significant effects on existing road conditions either in terms of journey times or accidents rates.

Cumulative Effects

Cumulative effects are those which might occur as a result of the implementation of this scheme in combination with other projects in the locality.

A new fish pass is planned at the outflow of Ennerdale Water to the River Ehen to replace the existing fish pass in 2014. It will assist salmonid migration into Ennerdale Water and expand the area of accessible spawning habitat. Furthermore, Ben Gill is going to be restored. This watercourse was historically diverted to flow into Ennerdale Water. It will be restored to its original course and be reconnected with the upper Ehen. There is therefore potential for cumulative effects between the South Egremont Groundwater Scheme and the above on the River Ehen and Ennerdale Water.

Good Practice measures similar to those proposed for the South Egremont Groundwater Scheme will be implemented during works on reconnecting Ben Gill to the River Ehen and during works on the new fish pass to minimise sediment mobilisation; manage pollution; remove fish from the easement and avoid the salmonid spawning season. Therefore any cumulative effects of these works during the construction phase will also have no significant effects on Atlantic salmon, freshwater pearl mussels and the ecology of the River Ehen SAC/SSSI.

The Ben Gill watercourse is expected to improve delivery of gravel into the upper Ehen and increase the availability of spawning habitat for salmonids. In conjunction with improved fish passage into Ennerdale water via the new fish pass and the implementation of the Good Practice measures, this will have a positive cumulative effect on salmon recruitment and hence also on freshwater pearl mussels.

Conclusions

The South Egremont Groundwater Scheme is required to ensure that sufficient water is available to serve United Utilities customers in the area known as the 'West Cumbria Resource Zone'.

The EIA completed for thescheme has found few effects that are considered to be significant and positive effects have been identified including allowing compensation releases into the River Ehen to be increased thus safeguarding the Ehen's pearl mussel population, and salmon spawning habitats, which will be better protected during any spring periods of low flow or dry spring periods.

What Happens Next?

Prior to making a decision on the planning applications, Copeland Borough Council and the Lake District National Park Authority will seek advice from the Environment Agency, English Heritage, Natural England and other consultees and will make the full Environmental Statement available for examination by members of the public. Copies may also be purchased from United Utilities. Copies of the Non-Technical Summary are available free of charge.

For more information, please contact

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