



EIR Ref:2017/024

9th March 2017

REQUEST UNDER ENVIRONMENTAL INFORMATION (SCOTLAND) REGULATIONS 2004

I refer to your request for information, received by email on 27th February 2017.

We have applied the exemption under Section 39(2) of the Freedom of Information (Scotland) Act 2002 as we have determined that the information sought in your request is environmental information. We are therefore handling your request under the terms of the Environmental Information (Scotland) Regulations 2004 (EIRs). In this case the public interest in maintaining this exemption and in dealing with the request in line with the requirements of the EIRs outweighs any public interest in disclosing the information under FOISA.

Your specific request and the response from the National Park Authority are provided below.

“The Construction Method Statement attached to Planning Application reference number 2016/0183/DET.”

The Construction Method statement is attached in Appendix. Please note that personal information, namely the names and personal contact details of external staff have been redacted from this document, in accordance with Regulation 11(2) of the EIRs and Data Protection Principles.

We have considered the public interest in respect of the withholding of this personal data and have determined that the public interest in withholding this specific information outweighs the public interest in its release in to the public domain. Please note that we have not withheld complete documents which contain such personal data and have released all other information within the document which is not subject to requirements of the Data Protection Act 1998.

Yours sincerely

Governance & Legal Team
Loch Lomond & The Trossachs National Park Authority
Review Procedure

If you are dissatisfied with this response, or the way in which the Authority has dealt with your request, you are entitled to ask the Authority to review its decision. Please note that in order for a

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review to take place you must:-

- Lodge a written request for a review within 40 working days of either the date on which you received a response from the Authority or the date by which you should have received a response under the terms of the Environmental Information (Scotland) Regulations 2004, whichever is the later.
- Include your name, address for correspondence, a description of the original request, and the reasons why you are dissatisfied; and

address your review request to:

Governance & Legal Team
Loch Lomond & The Trossachs National Park Authority
National Park Headquarters
Carrochan
Carrochan Road
Balloch
G83 8EG
E-mail: info@lochlomond-trossachs.org

Please note that links provided to information available elsewhere are intended to assist you. Requests for information held by other public authorities, and any complaints regarding access to such information should be addressed to that authority. These review procedures relate only to information which is directly under the control of Loch Lomond & The Trossachs National Park Authority.

The review of your request will be handled by staff who were not involved in the original decision. You will receive notice of the result of your review within 20 working days.

If you are not satisfied with the response to your request for review, you can contact the Scottish Information Commissioner, the independent body which oversees the Environmental Information (Scotland) Regulations 2004, at:

Scottish Information Commissioner
Kinburn Castle
Doubledykes Road
St Andrews
Fife
KY16 9DS
Tel: 01344 464 610
Website: www.itspublicknowledge.info
E-mail: enquiries@itspublicknowledge.info
Online appeal portal: www.itspublicknowledge.info/Appeal

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Edinample Micro-Hydro

Detailed Construction Method Statement and Landscape Restoration plan

Client:	Edinample Energy
Prepared by:	D. Legate
Approved by:	J. Wallace
Ref:	15015R008
Version:	02
Date:	02/09/2016
Purpose of issue:	01 - Detailed mitigation methods 02 - Updated following internal review

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1. General Description

This CMS relates to the construction of Edinample run-of-river hydropower installation. This document also incorporates the restoration plan as requested by the Local Authority.

The scheme will require the excavation and construction of a new intake, a buried pipeline, pipe bridge and turbine house with tailrace. A new permanent access track will be formed to the turbine house and a new temporary access track will also be created to service the construction of the intake.

It is of utmost importance that the impact upon the landscape is kept to a minimum throughout the construction of the scheme, especially during track works and pipe laying.

The development shall be undertaken in one continuous phase, with no partial implementation. Unless otherwise agreed in writing by the Local Planning Authority, all construction activities shall be completed within a 24-month period taken from the start date provided to the Local Planning Authority in accordance with the Notice of Initiation of Development.

Works will be carried out in line with any conditions stipulated in the CAR license and planning permission documents as granted.

Works shall consist of the following activities:

- Site Compound construction
- Site preparation including scrub clearance and pre-construction drainage where necessary.
- Installation of temporary access track to intake and lay-down area [LD1]
- In-river works de-watering - Temporary cofferdam construction [CD1]
- Intake concrete works/construction
- Removal of [CD1]
- Intake landscaping - reinstatement of stone wall adjacent to intake
- Pipe bridge construction and cladding
- Pipe laying
- In-river works de-watering - cofferdam [CD2] construction
- Turbine house foundation excavation
- Turbine house concrete works/construction
- Installation of outflow screening
- Cofferdam [CD2] removal
- Powerhouse construction and cladding
- Turbine and generator installation
- Final reinstatement and landscaping

2. Associated Documents

Drawing number	Description
15015D001	Component details
15015D002	Site plan
15015R007	Traffic management plan
	Protected species mitigation plan
	Tree protection plan
15015T001	Construction timeline

3. Responsible Persons

All parties will be briefed with regards to restrictions and duty-of-care under planning permission conditions, CAR licence conditions, and relevant general regulations regarding construction works and plant operations in or near watercourses.

Responsible Person

Name: [REDACTED]
 Company: Edinample Energy Ltd
 E-mail: [REDACTED]
 Telephone: [REDACTED]

Project Manager

Name: [REDACTED]
 Company: Highland Eco-Design Ltd
 E-mail: [REDACTED]
 Telephone: [REDACTED]

Primary Contractor

Highland Eco-Design Ltd

Sub-Contractors

Site preparation/pre-construction drainage: TBC
 Excavation: TBC
 Concrete works: TBC
 Electro-mechanical works: Highland Eco-Design Ltd/Cink

SEPA

Local officer: [REDACTED]
 Office: Perth
 E-mail: [REDACTED]@SEPA.org.uk
 Telephone: [REDACTED]

Planning Authority

Local officer: Julie Gray
 Office: Loch Lomond and Trossachs National Park Authority
 E-mail: Julie.Gray@lochlomond-trossachs.org
 Telephone: [REDACTED]

4. Environmental Hazard Identification

	Hazard	Mitigation
1	Silt making the water turbid and causing damage to aquatic plants and fish populations	<ul style="list-style-type: none"> • Install geotextile material below areas of excavation to filter out suspended solids in the water • Install silt traps and service on a regular basis where siltation is likely to be a problem
2	Cement entering the watercourse	<ul style="list-style-type: none"> • Pour cement used in the construction of project structures in accordance with SEPA pollution prevention guidelines 5 & 6 • Wash contaminated tools, materials and vehicles in a dedicated, water-tight wash-out bay • Treat contaminated wash-out water and dispose away from watercourses/groundwater or tanker off-site to a licensed disposal facility
3	Spilled / leaked vehicle fuel and hydraulic oil entering watercourses, affecting water quality and fish populations	<ul style="list-style-type: none"> • Store diesel in double skinned or bunded tanks with 110% required capacity away from watercourses • Check construction vehicles for leaks and supply spill kits • Adequately maintain vehicles <p>Any diesel or oil should be stored at least 10 metres away from any watercourse. Refuelling to take place 10m away from any watercourses also and drip trays to be used.</p>
4	Oil and fuel contaminating soil	<ul style="list-style-type: none"> • Keep pollution spill kits on site • Move soils contaminated with fuel or oil to a suitable landfill site
5	Chemicals entering the watercourse	<ul style="list-style-type: none"> • Keep chemicals and oils in a locked container • Avoid using polluting substances • Advise workers of importance of avoiding spillage
6	Protected mammals such as otters becoming trapped within open pipe runs	<ul style="list-style-type: none"> • Adopt a cut and fill strategy such that the length of open pipe run is minimised • Install ramps at frequent intervals within open pipe runs at the end of each working day • Cap the open ends of stored and installed pipes to prevent access to animals
7	Trampling and vehicle damage during the construction phase	<ul style="list-style-type: none"> • Confine the pipeline corridor to a width of 5m • Use vehicles designed to spread load and excavators with wide tracks • Wherever possible route vehicles to avoid flushes, streams and soaks

		<ul style="list-style-type: none"> • Ensure that culverts used are made out of a neutral pH material and are large enough to carry heavy flow • Culvert all burns alongside tracks to avoid erosion of track sides • Take care to avoid disturbing the soil around the streams enabling the groundwater to seep naturally through the ground • Minimise the number of journeys made across unprotected ground • Mark out areas which should not be touched • Advise all staff as to where important habitats are and provide alternative routes to avoid crossing them
8	Changes to drainage regime during construction	<ul style="list-style-type: none"> • Avoid drains as far as possible but, where necessary dig around the contour rather than down slope • Do not use drains to transfer large volumes of water laterally • Make culverts from a material with a neutral pH • Ensure that culverts preserve natural drainage continuity • Ensure that culverts do not lead to erosion, scouring or spread of sediment
9	Damage to vegetation and habitat	<ul style="list-style-type: none"> • Cut turves leaving the vegetation intact and replace as soon as possible • Avoid all linear features, for example, pile excavated peat in heaps rather than as a continuous strip-pile • After back filling, spread excess peat thinly over the peat surface • Pile excavated mineral subsoil and return mineral soil • Keep all excavated peat soil separate from mineral soil • Place all excavated mineral soil at bottom of trench • Excavated soils should not be stored on sensitive habitats • Soils will be replaced in the shortest period possible (max. 3 days) and reinstated to mimic the original layering with groundwater flows maintained where applicable • Ensure that turves are irregular in shape and replaced as soon as possible • Return the peat within the trench to as near natural structure as possible • Consolidate mineral soil and peat round pipe to exclude air and avoid water following the pipeline • Restore vegetation cover to as it was before construction • Any areas identified as wetlands or sensitive habitats should not be used to treat contaminated water

		<ul style="list-style-type: none"> • Mitigation will be required so that any adjacent habitats are not drained by the pipe or track route. Where the pipeline trench or track pass through or near sensitive GWDTE habitats construction will include impermeable barriers and/or clay plugs to avoid the trench/track bed acting as a preferential/cross slope conduit of groundwater • The soils removed from the site compound are likely to be wet and risk becoming anaerobic, the stock-piled soil should be stored in mounds no greater than 1.5m to 2m deep. The majority of removed turves should be placed on the surface of the stock-pile mounds to reduce rainwater infiltration, soil erosion and weed growth. The turves stored in this way will be less prone to breaking up and will re-establish more quickly post restoration. The approach means double-handling but only of the first turves to be removed. In addition the stock-piles should be fenced to prevent livestock access.
10	Damage/ disturbance to fish populations	<ul style="list-style-type: none"> • Halt in-river works during fish migration periods as per CAR licence conditions. • Monitor depleted stretch during de-watering activities. Rescue stranded fish with net and bucket and convey immediately downstream beyond de-watered area

5. Protected Species Protection

Protected mammal surveys have been carried out to determine the presence of these species. Detailed species specific mitigation plans are appended to this document, these cover Otter, Breeding Birds, Red Squirrel and Badger.

Prior to construction Toolbox talks for contractors covering otter, bats, badgers, red squirrel and breeding birds will be provided by a qualified ecologist.

As well as the mitigation described in Section 4, the following protection measures should be implemented:

- Pre-construction surveys for otter, red squirrel and badger will be conducted.
- Chemicals, oils and hazardous materials will be securely stored on suitable bunds.
- All persons involved with construction and drivers using the access routes will be made aware of the potential presence of wildcats and otters
- No construction materials or machinery which could pose a danger to wildcat or otter should be left on site (e.g. pipe should be capped to prevent entrapment, sharp or pointed tools should be removed)
- Construction work will be limited to between 0800 and 1800 hours, or at least 1 hour after sunrise to 1 hour before sunset, whichever is the later.
- In steeper sections geotextile debris netting will be securely pinned with tree stakes along the line of the works to prevent rock-fall in the direction of the watercourse

Furthermore, in the event of discovering signs of otter presence during construction:

- All activity within 200m of this site will be stopped immediately and the Project Manager will be contacted to investigate.
- If appropriate, SNH will be contacted. Work in the vicinity of the site will not commence until SNH advice has been sought.
- Any fish trapped by the works, for example, during isolation of the intake area, will be removed with a plastic bucket and released into the watercourse downstream.

6. Pollution Control Procedures

- The works will be carried out in accordance with the principles within SEPA's Guidelines on Above Ground Oil Storage Tanks, Working in Watercourses, Construction and Demolition Sites (PPG2, PPG5 and PPG6) and The Water Environment (Oil Storage) (Scotland) Regulations 2006.
- In the event of heavy rain work will be halted at the discretion of the project manager if he deems it necessary to prevent pollution from the works.
- The contractor will fill in a daily checklist (Site Sheet 3)
- Operatives will be briefed in the form of a toolbox talk on this Method Statement, Risk Assessment and the spill response procedures (Site Sheet 1)
- Fuel storage tanks will be stored at least 10m from watercourses and away from areas where collision with vehicles is likely.
- All plant will be re-fuelled at least 10m from any watercourse or drain which leads to a watercourse
- All plant operating within 10m of a watercourse will be operating on a drip tray if feasible. If not feasible the plant will be checked for oil leaks before undertaking such work and a log kept of these checks (Site Sheet 2)
- Where deployed within 10m of a watercourse small plant, i.e. generators and pumps will be kept in an impervious drip tray with capacity equal to or greater than 110% of the capacity of the fuel tank at all times.
- Chemicals and oils (shuttering release oil, concrete additives, grease, sealants, and resin) will either be kept in a locked container or locked in the site office.
- The spill response procedures will be updated during the Site Preparation stage to identify likely drainage routes from plant at each work stage and appropriate locations for deployment of spill kit materials. This will be used as the basis of the toolbox talk.
- In the event of a pollution incident then SEPA shall be notified immediately or as soon as is practicable after the event
- River bank works such as restoration or the application of rock armour will be carried out operating from the bank rather than the watercourse.
- Concrete will not be poured if there is a forecast for heavy rain within 24 hours to avoid the risk of alkaline run-off
- In-river works will not proceed if there is a forecast for heavy rain within 72 hours to avoid the risk of a site wash-out.
- The project manager will assess the risk and assess the pollution mitigation measures at the following key stages:

- Immediately before excavation works begin in a given area
- Immediately before cofferdam construction or removal
- Immediately before concrete works preparation (shuttering etc)
- Immediately before concrete pours
- Immediately before electro-mechanical installation
- A high capacity 2-inch dirty water pump will be available on site at all times in case of emergencies.
- Any pumped dirty water will either be pumped into drainage channels before the sediment traps or pumped onto agricultural land
- Cementitious material will not be placed in the water
- Cleaning of tools and shuttering will be carried out in water not draining directly to the watercourse. This will be carried out in temporary wash out bays [CW1] and [CW2] constructed with an excavator and lined with a double layer of sheet plastic.
- Any cement stored on site will be properly packaged, and any part used bags will be removed at the end of the working day into the site office.
- Waste metal and timber will be stored in potato boxes (or similar) before collection for recycling.
- Contaminated waste such as used cement bags will be stored in an impermeable container such as a wheelie bin or skip before being disposed of to landfill.
- All waste to be cleared from site and stored at the site compound in the appropriate containers at the end of each working day.

7. Sensitive Habitats

Sensitive areas of Ground Water Dependent Terrestrial Ecosystems including flushes, springs and soaks as well as areas to maintain flows to these are highlighted during the marking of the pipeline. The locations will be verified by an Ecologist prior to construction during the micro-siting of the works as per condition 11 of the planning consent.

Where the penstock or tracks must unavoidably pass through areas of groundwater dependant terrestrial ecosystems and where the groundwater continuity should be maintained:

- The time between excavating and backfilling of individual sections of pipeline is minimised. SEPA advise backfilling within three days to minimise drying and disturbance.
- With regard to the excavation of turf and arising's, these should be stock-piled on impervious sheeting, away from any watercourses and not on any wetlands, before being backfilled into the trench and not allowed to dry out.
- Turfs should be cut in a random fashion to prevent the surface, on reinstatement, becoming preferential pathways for water.
- Reinstatement should replace the soils in the original layering.
- Movement of vehicles across sensitive areas should be kept to a minimum.

- Impermeable barriers and/or clay plugs should be installed to prevent the trench or track acting as a preferential conduit of groundwater within areas identified as GWDTE.
- Any areas identified as wetlands should not be used to treat contaminated water.

8. Site Preparation and Compound

Refer to site plan 15015D002 for locations and extents.

- Geotextile silt traps will be constructed across any drainage lines between the working area and the watercourse as identified on site.
- The soils are likely to be wet and risk becoming anaerobic, the stock-piled soil should be stored in mounds no greater than 1.5m to 2m deep. The majority of removed turves should be placed on the surface of the stock-pile mounds to reduce rainwater infiltration, soil erosion and weed growth. The turves stored in this way will be less prone to breaking up and will re-establish more quickly post restoration. The approach means double-handling but only of the first turves to be removed. In addition, the stock-piles should be fenced to prevent livestock access.
- The compound will be secured by a perimeter of fencing using heras fencing.
- The working corridor will be marked out and mitigation put in place to protect retained trees adjacent to the working corridor as per the Tree Protection Plan.
- A site office [SO] will be established as will welfare and secure storage facilities will be established.
- Concrete wash-out pits will be constructed next to the hard standings [CW1] and [CW2].
- Noise from any mobile generators associated with the development shall not give rise to a noise level in excess of that equivalent to NR curve 30 between 0700 and 2200 and NR 20 curve at all other times when assessed with windows open 50mm for ventilation within any habitable room within a dwelling or noise sensitive building.
- The noise from the development shall not exceed 50 dB(A) Leq (1 hour) when measured within the external amenity space of any dwelling.
- There shall be no access to or egress from the site compound by delivery vehicles other than between the hours of 0700 to 1900 (Monday to Friday) and 0700 to 1300 (Saturday). For the avoidance of doubt there shall be no access to or egress from the site by delivery vehicles on Sundays.

Works sequence for Compound construction:

- The tracked excavator will remove complete turves where possible and set them aside for later reinstatement
- The tracked excavator will strip the topsoil and set it aside for later reinstatement
- Compound surface will be formed of crushed rock – this will be source from an existing borrow pit available to the estate

The compound will be reinstated 12 months from start of construction as described in section 4.9 and 15

Materials for all hardstanding's and tracks will be sourced from an existing borrow pit on the neighbouring estate. The location of this pit is shown on the site plan.

9. Lay-down areas

Lay-down areas will be set up at two locations on the site as shown on drawing 15015D002. There will also be a Site Compound and delivery area at the existing hardsanding on Glen Ample Estatee.

For reference the lay-down areas are numbered LD1 and LD2. Precise dimensions for each compound can be measured from the plans. LD1 is located adjacent to the turbine house and LD2 at the intake. There will be parking for one vehicle at LD2.

The intake lay-down area should be reinstated as described in section 4.9 and 14.

10. Access tracks

A new access track is proposed from the C106 to facilitate the construction of the intake. The new access is shown in drawing 15015D005-01 and document 15015R007-01 Traffic management plan details construction vehicle movements

Tracks will be constructed in accordance with SEPA's Guide to hydropower construction best practice and the SNH publication 'Constructed tracks in the Scottish Uplands.'

Upon completion of construction works the intake track will be retained to facilitate ATV access for maintenance but will be downgraded (narrowed and covered with topsoil). The turbine house track will be narrowed and a thin layer of topsoil spread down the middle of the track so that the track blends into the landscape while remaining accessible to service vehicles.

Where tracks are to be narrowed post construction, the downhill side of the road surface will be broken up to relieve compaction and top soil / top peat material stockpiled adjacent to the tracks will be used to narrow the track to the agreed width. Soil will be placed to a rough uneven profile.

Where tracks are to be cut into steep cross slopes, consideration will be given to widening the construction corridor to avoid side slopes that are too steep to allow soiling and re-establishment of vegetation and to allow integration of slopes into the adjoining landform.

Works sequence:

- The tracked excavator will remove complete turves where possible and set them aside for later reinstatement
- The tracked excavator will strip the topsoil and set it aside for later reinstatement
- Access track banking to be excavated back and, if necessary, a new road-side ditch formed on the uphill side of the track and silt traps installed as required.

- Track surface will be formed of crushed rock

Reinstatement works:

- De-compaction of road and working surfaces prior to soiling over.
- Careful reinstatement of undulating / rough landform over construction corridor using re-spread till, rock and deep peat prior to final shaping with top peat.
- The track is to be narrowed to a width of 2m with a central vegetated strip, the surface should be restored using previously excavated turf which has been appropriately stored, not soil or peat.
- Top peat will, in preference, be placed by digger bucket, loosely graded with bucket teeth and left rough, open and undulating. Where intact turfs are being placed these will be lifted in as large a unit as feasible and placed right side up, lightly compacted and all roots buried.

General mitigation:

- Contractors adhere to the good practice restoration methods detailed in section 4.9 and 13
- The excess of turf produced during construction is carefully excavated, stored and reinstated
- Drainage ditches are only installed where necessary (soils supporting dry heath are often sufficiently free draining to eliminate the need for drainage)
- The centre of the new track is re-turfed with previously excavated dry heath, leaving two wheel running surfaces approximately 0.5m wide
- On the steeper section of the intake track debris netting will be securely pinned with tree stakes along the line of the works to prevent rockfall in the direction of the watercourse. Silt traps will be installed along this fence at 10m intervals to catch runoff from the track. Sized to cope with 15mm runoff from the track and batters this will require a silt trap of 1.5m³.

11. Intake weir

The intake will be constructed at the locations shown on drawing 15015D001. The intake will consist of a low concrete structure with fine screening to keep debris and fish out of the pipeline. The abstracted water will pass through the screen and collect in the intake chamber or sump prior to entering the pipeline.

Works sequence:

- Remove old wier
- Build near-side weir
- Move cofferdam, diverting water over wier
- Build far-side weir (scaffold bridge for access)
- Remove cofferdam
- Build header chamber while gully isolated from river
- Place cofferdam, diverting water to far side
- Remove wall
- Dig out sediment
- Rebuild wall and landscape

- The header chamber will be constructed behind the existing wall (protected from the river)
- Temporary cofferdams [CD1] will be constructed across the watercourse to isolate works from the main river. Bulk bags filled with washed gravel will be placed and wrapped with visqueen to form a temporary dam.
- Leakage through the dam will be diverted using sand bags into 4" pipes and piped through the works. Any runoff into the work area will be pumped by a pump operating from the bank in a drip tray. The outflow from the pump will direct the water to silt traps more than 10m from the watercourse.
- The existing stone wall will be dismantled with care with all stone stored at LD1
- A machine mounted breaker will be used to prepare the river bed for weirs. The machine will access the dry river channel from the access road where the bank is at its lowest. The excavator will evacuate the river bed at the end of each day.
- Drill and fit anchors into bedrock. No lubricants used.
- Fit concrete shutters and pour base.
- Fit reinforcing and pour walls and wing walls.
- Shutter removal.
- Fit intake screens and sluice.
- The stone from the old wall will be used to reinstate the wall around the intake structure
- Reinstatement, working away from the structure. Once reinstatement is complete, pumping from the working area cease to allow leakage to fill the area and equalise water levels either side of the cofferdam.
- Removal of [CD1]. To remove, an excavator will work from the bank to extract the 1-ton bags.

In the event of a flood warning being given during this phase of works, work will cease and vulnerable excavations will be protected with geotextile where deemed necessary by the project manager. This work will only be commenced when the Met Office predict a clear forecast.

12. Pipe Bridge

The pipe bridge will be constructed in the location shown on drawing 15015D001. The structure will consist of two stone-clad concrete abutments. Parallel steel beams are laid across the abutments and pier, clad and decked with timber. The pipe is concealed underneath the deck.

Works sequence:

- A machine mounted breaker will be used to prepare the ground for the pier.
- Drill and fit anchors into bedrock. No lubricants used.
- Fit stone effect concrete shutters and pour pier and abutments.
- Shutter removal.
- Fit steel beams
- Lay pipe between beams

- Clad and deck bridge.

13. Pipe laying

Water will be transferred from the intake to the turbine house via a pressurised pipeline. The pipeline will adhere to the alignment set out in the plans, but may deviate within the site boundary to suit topographical and ground conditions.

The pipe will be laid based on this the precise route of the pipe and dig depth profile will be laid out by the engineer and main contractor.

Works sequence:

- Offloaded
- Transported to pipeline
- Excavated, laid and back filled in approx. 6m reaches
- The pipes will be offloaded directly from delivery lorries at the site compound.
- Pipes will be transported by tractor and trailer to the pipeline as required.
- Excavation will be undertaken according to the principals outlined in Section 4 – Item 9
- Pipe backfilled to manufacturers standards with minimum 800mm cover and reinstated with track surfacing material.

Pipe termination will be covered in the Section 13. Once the installation is complete the pipeline will be flushed and tested as required.

14. Turbine house works

The turbine house structure will involve the construction of a concrete foundation capable of withstanding the thrust from the pipeline. The turbine foundation will be constructed as detailed in drawing 15015D001. The building will house the turbine, generator and control system.

An open channel will carry the water back to the burn.

The location and size of the turbine house will be surveyed and laid out by the project manager and contractor.

Works sequence:

- The turbine foundation will be excavated with machine.
- Excavated soil will be stockpiled above flood levels. Excavated rock will be stockpiled as required to be reused as rock armour.
- All excavations sides to be safely stepped or battered back. Excavation to be monitored and inspected daily.
- Drill and fit anchors into bedrock if required. No lubricants will be used.
- Fit concrete shutters for foundation and thrust block.
- Install reinforcing.
- Mass-pour concrete. Concrete wash out area next to hard standing.
- Removal of shuttering.

- Construction concrete block work turbine house, install lifting beam and roof framework.
- In-river works - Bulk bags, filled with washed gravel will be placed by the excavator (operating from the bank) wrapped and lined with visqueen to form a temporary cofferdam [CD3]. This will isolate the working area from the main river.
- Any surface runoff from the trench excavation will be intercepted by a silt trap.
- Excavate outflow trench and lay pipe.
- Form outfall structure working from behind the coffer dam.
- Rock armour will be placed at the tailrace exit if required to prevent river bank erosion.
- Fit outflow screening
- Stone clad and slate roof external finish with stone laid random with quoins shown on all corners. The roof shall be finished with slate.
- Reinstatement including backfilling and landscaping around turbine house
- Remove coffer dam

In the event of a flood warning being given during this phase of works, work will cease and vulnerable excavations will be protected with geotextile where deemed necessary by the project manager.

15. Landscaping and Reinstatement

In addition to the elements/methods detailed in section 4.9 (Table) the following best practise should be employed to ensure good restoration:

- All approved landscape restoration works shall be completed in the first planting season following the commissioning of development and any plants/trees that, within a period of 5 years thereafter, die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of similar sizes and species.
- The existing stone intake wall will be restored and reinstated around the new intake structure as per drawing 15015D001-04
- Replacement tree planting will be carried out as per the Tree Replacement Plan.
- Native tree species will be used, said species will be agreed with the Loch Lomond and Trossachs National Park
- Restoration should be carried out when soils are wet but not waterlogged because it is likely to be more successful.
- Restoration should be carried out in spring or summer to give the greatest time for the restored habitat to grow and re-establish before winter.
- Restoration should be carried out as soon as possible after excavation. For example penstock restoration should be carried out in sections to minimise the time between excavation and restoration.
- Excavated materials, rock, till, peat etc (where present), should be stored separately and replaced in their previous relationships, with the top surface being restored turf.

- Turves should be stored vegetation side up and should be watered as necessary in dry weather.
- The height of the piles should not be so great that it causes compression of the peat or soil at the base. The shape of stored peat and soil heaps is less important.
- Following restoration, surfaces should not be higher than the surrounding ground surfaces.
- Excess soil and peat should not be spread over the surrounding vegetation. This may mean excess materials require removal from the site.
- The concrete wash-out bay will be pumped out into a tanker and the contaminated water disposed of by a licensed waste disposal contractor.
- The concrete wash-out bay will then be back-filled and compacted to ground level before topsoil is reinstated.
- Lay down areas will be returned to original condition

16. Equipment Installation

- A digger will lift the turbine and generator into position from the hard standing in front of the turbine house.
- Turbine and generator fitted in place and secured to turbine frame mount.
- Flood events are not anticipated to affect this stage of the works.

Site Sheet 1: Spill Response Procedures

In the event of a fuel or oil spill

Operations should cease and the spill should be treated in accordance with PPG 22 "Dealing with spills":

- A temporary bund (from the spill kit) should be put in place to contain the spill at source.
- The source of the spill should be identified and stopped if possible, i.e. leaks plugged or plant moved to spill tray if possible.
- Spilt oil or fuel should be soaked up with the spill kit pads and any contaminated material should be removed and disposed of by a local suitably certified waste contractor.
- In the event that a spill enters a site ditch or drain, the next opportunity for containment will be the drain itself or at installed silt traps. These should be dammed with sorbent pads or spill kit bunds.

Spill kits

The following pollution spill kits are to be kept on site in the site office:

1 of large spill kit to accommodate the capacity of a 13 ton digger, containing:

- Pack Sorbency: 255L
- 1 x Wheeled Bin
- 6 x Oil Only Socks (3m x 8cm)
- 140 x Oil Only Pads (Double Weight)
- 5 x Oil Only Cushions
- 1 x Drain Plug (65cm x 45cm)
- 1 x 5Kg Plugging Granules
- 1 x Caution Tape
- 5 x Disposal Bag & Tie
- 1 Instruction Sheet

2 of smaller spill kits to be carried on board smaller excavator and dumper containing:

- Pack Sorbency: 45L
- 1 x Shoulder Bag
- 2 x Oil Only Socks (3m x 8cm)
- 25 x Oil Only Pads (Double Weight)
- 1 x Drain Plug (65cm x 45cm)
- 1 x Disposal Bag & Tie
- 1 x Instruction Sheet

A spill kit and fire extinguisher must be kept in all excavators.

Spill kits should be checked monthly by the project manager and daily by excavator drivers. If a kit requires renewal please contact the project manager.

