

APPENDIX 6.1:

DRAFT CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (“CEMP”)

Introduction

1. This document is a draft Construction Environment Management Plan (“**CEMP**”). It includes a draft Schedule of mitigation, draft Construction Method Statements for certain activities which will be developed into a full Construction Environmental Management Plan by the Principal Contractor. The final CEMP will be produced in consultation with, and subject to approval by the appropriate authorities. At this stage this document is designed to provide adequate information to allow the examining authorities and their advisors to understand the mitigation proposed in enough detail to assess its adequacy. It is intended to be developed and refined into the final CEMP.
2. The first stage of Construction Environmental Management Process is the preparation of a Draft Schedule of Mitigation to support the mitigation highlighted in the Environmental Statement (“ES”). Draft Construction Method Statements then detail suitable methods for delivering the mitigation into a draft Construction Environmental Management Plan and eventually after consent has been given and contracts awarded the Principal Contractor will be responsible for finalising a complete Construction Environmental Management Plan. The appointment of an Environmental Clerk of Works (“ECOW”) / Site Environment Manager to manage the impacts and requirements of the CEMP and contract, through construction will also be required.

Schedule of Mitigation

3. The Schedule of Mitigation (“SM”) in **Appendix 1** brings together all the identified mitigation measures to avoid or minimise the anticipated environmental effects of the development. It sets out in broad terms how mitigation agreed at the planning stage and during preparation for construction, can be appropriately managed and implemented during construction. A sufficient level of detail regarding mitigation is provided before the application is determined so it may be possible to conclude that there would be no adverse effects on site integrity in the appropriate assessment. Similarly for European Protected Species any necessary survey information and proposed mitigation work are to be submitted by the developer prior to any planning application being determined so that any licence requirements can be considered by the planning authority prior to planning permission being granted. Any mitigation works should then be included in the updated Schedule of Mitigation.

Construction Environmental Management Plan

4. The Principal Contractor shall produce a detailed CEMP for approval prior to construction commencing. The CEMP will detail specific site / aspects of the construction work (e.g. each access track, each wind turbine tower base, each watercourse crossing, etc.) and will apply the principles of the agreed mitigation to show how the mitigation is implemented effectively. The first draft of the CEMP will be prepared prior to contract award of the main contractors. It will then be reviewed and revised, in conjunction with the client and the main contractor in collaboration if necessary with the appropriate authorities prior to construction.

Environmental Clerk of Works (ECOW)

5. An appropriately qualified Environmental Clerk of Works (ECOW) / Site Environment Manager will be appointed by the client to ensure effective control. His responsibilities include:
- monitoring, auditing, reporting and communication of environmental management on site and with the client, planning authority, contractors and other relevant parties;
 - ensuring appropriate procedures and documentation are in place and followed for all work activities where there is a risk of environmental damage;
 - ensuring all environmental commitments and requirements are followed;
 - ensuring that all relevant works are being carried out in accordance with the required permits, licenses, certificates, planning permissions and bringing to the attention of the project team any timing and legal constraints that may be imposed on the carrying out of certain tasks;
 - keeping up to date with changes in environmental legislation that may affect environmental management during the construction phase;
 - carrying out regular documented inspections/audits of the site to ensure that all work is being carried out in accordance with the CEMP;
 - ensuring that specialist environmental contractors are competent and have sufficient expertise to co-ordinate and manage environmental issues, and managing their activities on site;
 - liaise with the Contractors Environmental Representative/Manager to ensure that Environmental Induction Training is carried out for all site personnel under the Contractor;
 - ensuring the Clients Project Manager is notified of all incidents where there has been a breach of agreed environmental management procedures; where there has been a spillage of a potentially environmentally harmful substance; where there has been an unauthorised discharge to ground, water or air and where there has been damage to a protected habitat, etc;
 - be ready to assist in implementing at all times an Emergency Response Plan;
 - be responsible for notifying the relevant statutory authority of environmental incidents; and
 - for carrying out an investigation and producing a report regarding environmental incidents and non-conformances.

Consents and Licences

6. The CEMP does not negate the need for various licences and consents. The requirements for the obtained licences and consents should be included within the final CEMP.

Construction

7. Prior to start of construction, the Planning Authority in consultation with other statutory bodies as necessary will need to discharge pre construction planning conditions.
8. The final CEMP may not require the prior approval of the planning authority, but will need to be signed off by the Environmental Clerk of Works (“ECOW”), prior to construction and revised during construction, depending on changing circumstances / information.
9. The ECOW will then implement the requirements of the CEMP including monitoring, auditing etc. during construction, prior to hand over to operations.

Post Construction

10. Project environmental management may continue after the commissioning stage with any long term habitat management plans and monitoring arrangements.

Conclusion

11. The procedure and stages outlined above will ensure that necessary mitigation measures identified and agreed at early stages of a project for the safeguarding of the environment will be effectively taken through to implementation with the efficient involvement of all parties at the relevant stages.

Project Description

12. The wind farm construction comprises
 - the installation of 27 turbines (each between 3 and 3.3MW capacity);
 - the installation of a meteorological mast, with a height of up to 80m;
 - the construction of a 33kV/132kV electrical substation (approximate overall size 58m x 35m) and associated switchgear;
 - trenching and cable installation for the supply and distribution of generated electricity;
 - upgrading of 9.5km of existing tracks and laying 6.9km of new tracks crossing the site to facilitate the wind farm development;
 - the construction of a temporary site compound with associated services for the duration of the construction phase;
 - the possible installation of an on-site concrete batching plant to facilitate the turbine base construction; and

- the reinstatement of areas affected by the construction of the contractor's compound and concrete batching plant (if provided).

Grid Connection

13. A grid connection application has been submitted to SP Manweb ("SPM") on 1 April 2014. A previous grid connection offer was received but not taken up by Mynydd y Gwynt Limited ("MYG") in February 2013 due to commercial issues. During the detailed discussions SPM explained their current preferred grid connection route via Carno to Cefn Coch. This is described in detail in **Chapter 17** as Option 2. A previous offer in 2011 detailed a different grid connection route via A44 and Caersws. This is referred to as Option 1 in **Chapter 17**. The grid connection will be a separate NSIP project by SPM.

Quarrying / Borrow Pits

14. No borrow pits will be utilised for stone production. All quarrying onsite will cease during construction.

Draft Construction Method Statements

Access Track construction

15. New tracks will be constructed in several areas across the upland areas of the site. In total 6.9km of new tracks will be constructed over a variety of ground conditions. No new water crossings will be required. Eleven mapped water crossings currently appear under existing wind farm tracks including almost 30 existing culverts of varying sizes which will be investigated and renewed as required. Extensive peat probing and mapping has allowed a new track layout which avoids deep peat and other high sensitivity habitats. New tracks will be capable of supporting delivery of large and heavy turbine components, and the associated assembly craneage. Tracks will be designed and constructed in accordance with best practice guidelines. Detailed method statements will be written in consultation with and approved by Powys County Council, Natural Resources Wales and the client's own ECOW.

Procedure

16. Tracks will be designed to the load criteria defined by the turbine manufacturers. A turbine type has not been finalised, but similarities in requirements suggest tracks will need to be capable of supporting 20 tonne axle loads and vehicles around 50m long. The track surface will vary depending on location. Mostly the surface will be graded and crushed stone, however on steeper inclines it will include a bound surface material. This will help with traction for delivery vehicles as well as controlling scour and silt run-off. The camber and gradients will comply with manufacturers' guidelines.
17. Clean washed stone will be imported from local quarries. However the process of compacting the layers of material will inevitably create some fine material which could be a cause of sediment pollution. This material will need to be intercepted before being allowed to enter watercourses.
18. Track drainage will be designed to minimise pollution and sedimentation of watercourses. Surface water cut offs will be made to intercept water above construction features (tracks

and turbines) and to transfer it around or piped under these features. Natural surface runoff water will be allowed to percolate back into the vegetation below construction areas. Down slope of construction features there will be drainage ditches and swales to capture water and if necessary divert it to silt traps. On steeper slopes drainage channels across the tracks will divert water into roadside swales. These will incorporate check dams to reduce flow velocities, discharge will be via vegetated buffer areas / mini-settlement ponds. A new settlement pond will be used near one turbine to reduce the risk of sediment entering a watercourse. Existing settlement ponds below the compound will also be upgraded and used as part of a systematic approach.

19. Catchpits and blind ditches will be designed to accept the maximum predicted run-off. Monitoring will be by the contractor and ECOW. A site survey will inform road alignment design to minimise cut and fill. Drainage sub catchments have been calculated and ditches will be constructed to one or both sides depending on land form and drainage requirements. The steepest tracks required for the scheme will not be new tracks, but upgrading of existing, established tracks. See **Figure 14.3** - Surface Water Management Plan.

Widening Existing Tracks including bends

20. An extensive network of tracks already exists onsite, including the steeper tracks that will be required during construction. The main access track from the site entrance is on the eastern side of the River Wye and is not the track associated with the ford style river crossing that is a subject of concern to NRW.
21. None of the wind farm project tracks cross the River Wye or enter the River Wye SSSI.
22. Existing track widths and construction vary considerably onsite. 9.5km of existing tracks will be used in construction of the wind farm. Some sections of existing track are already 6m wide and constructed from well compacted material directly on the base rock with ditches either side. Some profiling and extra stone material to bind the surface may be all that is required in these areas. In other areas the tracks are only 2m wide and currently only suitable for light farm vehicles. Clean imported stone and geotextile materials will be required to upgrade the tracks in these areas. A detailed design will be made following site survey. Ecological constraints and drainage requirements will be factored into the design along with the geometric requirements of the tracks. The final designs will be pegged out onsite to allow inspection and approval prior to construction.
23. Those tracks marked as “existing not part of the scheme” will not be upgraded and will not be used by any of the construction vehicles or contractors. Signs will be displayed at junctions reminding construction staff that these tracks are out of bounds.

Culverts & Watercourse Crossings

24. There are a total of 11 watercourse crossings associated with widening existing tracks, and no new crossings associated with the construction of new tracks; although the track from T5 to T4 passes close to the head of a small ephemeral watercourse. At present the watercourses are culverted under the existing tracks, with pipe culverts of 150 - 900mm in diameter. Culverts also exist to drain some trackside ditches. In total approximately 30 culverts exist under the tracks that will be used for the wind farm. Water flow varies with seasons and rainfall, with many culverts drying out. Some existing culverts are of a poor

design and show signs of significant scouring around the pipe outfalls due to inadequate construction.

25. Many of the small watercourses flow directly or indirectly into the River Wye. Some also flow towards the River Severn and others into the Afon Bidno, which eventually re-joins the river Wye some kilometres downstream.

Culvert Upgrade Procedure

26. There are 23 culverts under the track between the site entrance and the construction compound. There is another culvert crossing before turbine 14 and a track across the head of the Nant y Crug watercourse just past turbine 22. It is envisaged that any extensions to the existing culverts that are required to accommodate the widened tracks will be installed with the same diameter as that of the existing culverts in order to maintain their current carrying capacity.
27. The existing track from Turbine 7 to Turbines 8 and 10-12 passes over a small dam across the Afon Bidno which will need to be realigned and widened to reduce the gradient and take the loads. During the construction process, the existing culverts will be temporarily stopped up and pumps provided to over-pump any water behind the dam to the channel downstream of the working area. A temporary downstream silt trap will be included if required. The existing culverts will be extended and the dam raised by building up layers of compacted stone. The top layer of track will have a bound surface.
28. All culverts to be installed will be designed by reference to the profile of the existing water channel and surrounding ground levels either side of the track crossing point, and in accordance with CIRIA guidelines (C689 Culvert Design and Operation Guide). Where necessary inlet and outlet wing walls will be constructed to retain any backfill material and reduce the risk of scouring. Wing walls will be constructed using appropriate material, details of which would be submitted for approval prior to installation.
29. Culverts will be installed during dry spells where possible. Existing channels will be dammed upstream of the working area and pumps provided to over-pump any water within them to the channel downstream of the affected area. Silt traps will be deployed if necessary. Water quality will be monitored upstream and downstream of the affected area to ensure that there is no deleterious increase in silt or the ingress of contaminants arising from the working method.

Control of Water & Sediment/Silt Control

30. Control of water is essential to ensure no adverse impact on rivers and waterways, as well as to minimise erosion. Construction works are often more susceptible to erosion than areas with vegetation in place. The project tracks and bases will be designed in accordance with best practice procedures to minimise run-off and capture water locally to where it falls. Sustainable drainage features will be incorporated to ensure silt run-off does not occur. Construction activities will be closely monitored by the ECOW.

Procedures

31. During the detail design stage and prior to construction suitable locations for cut-off ditches and swales will be identified and sized as mentioned above under track construction.

Peat and Floating Roads

32. The proposed layout is such that new tracks have been carefully positioned to avoid deep peat and other high ecological constraints. Over 2500 peat mapping points have been taken in a focussed manner to inform the design process. Nevertheless, if it should prove necessary to design a floating road construction the best practice guidelines will be followed and the construction methodology agreed with PCC and NRW. The *Report into Good Practice in Design, Construction and Use of Floating Roads on Peat with particular reference to Wind Farm Developments in Scotland*: Forestry Civil Engineering and Scottish Natural Heritage, August 2010 states that the 'EIA should be sufficiently detailed and descriptive to permit planners and consultees to assess the proposal. Contributors accepted that it was not in the interests of developers to be too prescriptive in the early planning stages in detailing construction method statements as this can stifle innovation in the later construction process'.
33. If areas of peat extraction are required to make tracks or crane pads, consideration will be given to placing peat carefully around the peat islands on Esgair y maesnant to protect those islands. Access across habitats would have to be carefully planned and would probably entail use of mechanised tracked dumper vehicles and bogmats. These plans will be developed during the detail design phase post consent.

Seasonal Working

34. Due to the delayed implementation of the mid Wales grid connection there may be 2-3 years before normal construction start. This would allow specific early activities to be undertaken if considered beneficial for ecological reasons. These matters can be investigated and decided post-consent. They can be 'required' as necessary under the Development Consent Order.

Crane Hardstandings

35. Crane hardstandings are required to support the main erection crane and the smaller tailing crane during turbine erection. Crane hardstandings will be 40m by 20m areas microsituated to avoid high ecological constraints and oriented to suit. Siting will also consider the topography of the land to minimise cut and fill requirements. Topsoil and subsoils will be excavated and stored in bunds for later reinstatement. Bunds will be monitored for erosion control and if necessary covered using turf/vegetation taken from the hardstanding area. Clean imported stone and geotextile materials will be used as necessary to achieve the load bearing requirements of the turbine manufacturers. Compaction will be carried out by mechanised rollers. Plate bearing tests will be carried out to prove the load bearing capabilities. Drainage ditches with soakaways will be constructed to control silt and water run-off. Generally hardstandings will be constructed using the same methods as the new access tracks.
36. Hardstandings will also be used for tower section laydown as well as nacelle component storage prior to erection.

Reinstatement

37. Following successful commissioning and trial runs of the turbines, the crane hardstandings will be left in situ but re-covered with the soil materials excavated prior to construction to reduce the visual impact of the crane hardstandings. The hardstanding will remain in place

under the vegetation for the 25 year life of the project. Normal maintenance may not require the use of the crane pad during the life of the wind farm, however if a major component fails, the surface materials will be scraped off allowing the reuse of the hardstanding. After turbine repair the topsoils will once again be recovered over the hardstanding.

Blade laydown

38. Blade laydown will be to the side of crane hardstanding areas. Blades will be carefully placed on cradles on top of bogmats as required by the local ground conditions. Although blades are large components they weigh only 6-8 tonnes and require no preparation of the ground conditions. Inclined land can be accommodated using built up trestle supports.

Settlement Ponds

39. A settlement pond will be constructed below turbine 27 to ensure no silting of the watercourse downstream during construction. It will be designed in accordance with best practice as described in the CIRIA SUDS Manual (C697).

Turbine Bases

40. Large reinforced concrete pads are used as turbine foundations. Each base will require approximately 411m³ of concrete, and contain approximately 40 tonnes of reinforcing steel. A steel base collar section will be cast into the base onto which the turbine's lower tower sections will connect. The thickness will depend on the geological conditions under the bases, which will be subject to geotechnical survey and a detailed design approved by the turbine manufacturer. In the case of poor ground conditions it is sometimes necessary to include a piled foundation. However an initial desktop study of the geological conditions suggests piling is unlikely to be required for Mynydd y Gwynt. A micrositing allowance of 50m has been requested to ensure final turbine positioning is away from the areas of highest ecological constraints. Topsoil and subsoils will be excavated and stored locally in bunds away from watercourses. The turbine base excavation will include a suitable sump to allow pumping of water to keep the excavation dry. Water pumped out will be processed through a silt catcher and then to a suitable drainage sump or other location as agreed nearby. In some locations it may be preferable to pump back to surface discharge piping locally via suitable filter media.
41. Steel reinforcement bar and ducts for the base will be store locally and lowered into the excavation by crane. The reinforcement structure is built up and supported until the concrete pour is ready. Concrete pouring is carried out as a single continuous activity which will be carefully coordinated with local concrete production facilities. Factors such as weather, access for transport and other activities which could affect the success of the pour are all considered by the contractor before a decision to pour is made. Test samples are taken of the premixed concrete during the pour and covers will be available to cover the concrete, should they be needed after the pour. Formwork will be removed after satisfactory curing and the void around the base backfilled. Holes for cable ducts will be carefully protected. The topsoil from the stored bunds will be used to regrade around the surface of the turbine base. No washing out of concrete lorries and equipment is allowed anywhere onsite except in the designated area at the batching plant. Or, if concrete is sourced off site, vehicles will be washed once they return to the depot.

Turbine Erection

42. The main erection crane is brought to site partially disassembled. In the UK these cranes are usually self-propelled, but the choice of crane will be the responsibility of the turbine manufacturer. The counterweights and extension booms/arms are assembled onsite. As the crane moves between turbines onsite some disassembly is required to reduce the axle loadings. Alongside the main erection crane there will also be a smaller tailing crane. First the tower sections are installed. Next the nacelle is prepared and lifted into position. Some new turbines are supplied without the drivetrain pre-installed in the nacelle to reduce weight (such as the Vestas V105).
43. Next the rotor has the blades attached and the whole assembly is lifted into position. Again this is not so with all turbine manufacturers and sometimes the hub is installed without the blades attached and the blades are lifted from vertically below the hub. In all turbine erection operations wind speed is a critical factor. Wind speeds are monitored and weather forecasts studied before lifting operations commence. Each turbine takes 2-3 days to erect if weather allows.

Cable Laying

44. Underground 33kV cables will be installed from each turbine to the on-site sub station; the layout will be as shown in **Figure 6.7**. The trenches will be approximately 0.9 metres wide, the exception being that within the final 500m approach to the substation which will be 1.8 metres wide to accommodate all 4 electrical radials. All trenches will be approximately 1.5 metres deep and will generally follow the line of the access tracks. Construction will be using mechanised equipment along the access tracks. Topsoil and subsoils will be excavated and stored in bunds away from watercourses. A sand bed will be laid in the trenches and cables laid on top. Further sand bedding will be used to cover the cables and cable marking warning tapes inserted into the trenches in accordance with guidelines. After electrical integrity testing of the cables the trenches will be backfilled and compacted with suitable material and recovered with the previously excavated soils. Ducts will be used over water crossings. Cable markers will be used to mark the cable routes.

Substation

45. Substation construction will be on made up ground at the north east corner of the compound area. Excavations will be barriered off from the compound. Underground ducts and building foundations will be excavated using machines. In-situ concrete will be poured to produce the building foundation slab and transformer/equipment bases.

Meteorological Mast

46. A small reinforced concrete base will be poured and a lattice meteorological mast installed on top. Pollution prevention measures will be the same as for the turbine foundations but on a much reduced scale. The tailing crane will assist in tower erection.

Construction Compound

47. This area is currently stoned and is used as a car park and shooting range. The stone used to pave the car park was mainly extracted from the hillside of y Drum. An area will be identified and fenced off for the duration of the project. No shooting activities will be

allowed during the construction of the project. Additional stone and geotextile materials will be used if required to produce a suitable quality area for the compound. Recent site investigations have revealed recent deposition of soil materials at the lower end of the car park. This material will be cleared away as it is seen to be causing sedimentation. A suitable retaining structure, such as gabion baskets and silt fences will be installed to ensure sediment run off does not encroach the habitat below the car park.

48. A sizeable settlement pond for pollution and silt control already exists downhill from the compound area. This will be assessed during the detailed design phase post consent and any further remediation measures required will be agreed with NRW.

Stone Importation

49. Stone for the construction of the tracks will be imported from suitable local quarries. The stone will be washed to remove fines before departing the quarries. An area for stockpiling stone will be identified on the construction compound. Any potential sedimentation from rainwater run-off will be intercepted by temporary silt fences installed below the stockpiles. There will be no on-site excavation of stone for the wind farm construction.

Rally and Other Site Activities

50. Currently the site is used for rallying and shooting, amongst other leisure activities. All such activities would cease during wind farm construction.

Public Rights of Way

51. There is a network of public rights of way crossing the site within which there are five points where the footpaths cross tracks that will be used by construction traffic and two lengths of track where a footpath utilises the track in question. At track crossings, double field gates will be installed either side of the track; these will be used to close off the track to allow pedestrian access in safety.
52. Where a footpath currently utilizes a length of track, specifically between turbines Turbine 7 and Turbine 8 and in the vicinity of the sub-station, a temporary footpath diversion application will be made and a fence-protected parallel track will be created for the duration of the construction period. This will be an extension of the current practice as the rights of way are already subject to temporary closure or diversion when rally car events are scheduled across the site. Detailed plans to inform the public and ensure their safety will be developed by the principal contractor prior to construction start onsite.
53. It is intended to apply for a temporary closure to the Open Access land to the south eastern end of the site during construction. Warning signs and barriers will be deployed as required by Countryside Services. Speed limits for construction vehicles and staff briefings will also be required to ensure public safety.

Security

54. The site compound will be fenced and gated. It will be locked out of hours. The turbine bases and substation construction areas will also be fenced off to keep people and livestock out. Due to the remote location vandalism and opportunistic theft is considered

unlikely, therefore the provision of security guards will be a decision for the contractor. Security will be reviewed as necessary.

Environmental Monitoring

55. This draft document will be developed into a full CEMP by the principle contractor and submitted for information/approval by the PCC and NRW as defined in the Development Consent. An independent ECOW will oversee activities onsite and ensure the contractors comply with their own environmental plans and best practice guidelines. A draft Habitat Management Plan for post construction activities has also been provided with the ES.

Water Quality Monitoring

56. A regime of water quality monitoring will be established and implemented for any works close to a water course to monitor changes in water quality during operations within the water courses that feed into the River Wye. The purpose of the monitoring will be to establish parameters below which it can be concluded that works are not causing excessive sedimentation and work can continue or should be halted.
57. Before construction begins a monitoring regime will be agreed with NRW and will, amongst other things, establish: typical ranges of turbidity for the water courses on site; levels below which work can take place; and, the maximum increase in nephelometric turbidity units (NTU) caused by the works before the operations should be halted.
58. Monitoring will be carried out using either a turbidity meter, a Secchi disc or transparency tube. The results will be expressed in nephelometric turbidity units ("NTU"). Monitoring will be carried out by the ECOW. It will be carried out upstream and downstream of any works and will measure the increase in NTU due to the works.

Mining Activities

59. Mining activities have historically taken place on the site, with evidence of the two known mine workings being present towards the western edge of the site boundary generally away from the wind farm construction areas; see **Figure 14.1**.
60. The position of the mines and known depth of the workings are not expected to adversely influence the foundation details for the turbines, but this will be the subject of further investigation before construction begins.
61. No impacts are expected from construction activities due to the physical separation from the old mine workings. To reinforce this, the locations of the mines will be clearly marked as out of bounds to the contractors, and this will be part of the site induction information for staff.
62. Historically the northern end of the compound area was used to deposit spoil from the excavation of the ventilation shafts for the Wye Valley Mine. This stone was reportedly spread across the area many years ago. Ore was not brought up through the narrow ventilation shafts, but was pulled out along the horizontal adits for crushing and washing down in the area by the lower car park several hundred metres from the proposed wind farm compound. It is therefore thought that the stone making the compound base is clean

stone, and this has been confirmed by the recent contaminated land preliminary risk assessment requested by NRW (see **Appendix 6.2**).

Concrete batching and handling

63. Consent is being sought for a temporary onsite concrete batching plant. However no decision has been made and hence the transport assessment includes for off-site concrete production as the worst case transport scenario. If a concrete batching plant is utilised it will require its own secure, bunded fuel storage area. Cement storage will be in silos. The area surrounding the cement silos as well as the loading/unloading and wash out area will be covered, bunded and lined with an impermeable membrane and laid to fall to a sump, with any surface water run-off from that area being pumped to a containment tank. This is the only area on site where concrete activities are permitted to wash out, including mixers, barrows and rakes. Concrete mixing or delivery lorries should return for washout to the batching plant. Concrete wash water will be minimised, collected and reused wherever possible. The on-site concrete batching plant will include wash water recirculation in the mixing process. The containment tank water will be taken offsite to a licensed regulated facility for proper treatment and disposal. The concrete batching plant will be installed in accordance with *PPG and EA Regulatory Position Statement 107 guidance: Appendix 1 - Good practice guidance for dealing with concrete wash waters*.
64. Concrete for the turbine bases will be transported to the foundation sites using concrete lorries, whether the concrete is batched on- or off-site. Washing out of lorries at the end of a pour will be carried out in the lined wash-out area back at the batching plant if used. If ready mixed concrete is sourced off-site, no on-site washout will be allowed. The delivery lorries will be made to wash-out at their base.

Private Water Supplies

65. Upgrading of the site access track at the entrance to the site is the only construction activity likely to take place within several kilometres of the private water supplies for properties near to the site entrance (see **Figure 14.2**). Due to the measures that will be taken to prevent changes to the hydrological regime and reduce sedimentation, construction activity is not expected to have any detrimental effect. However liaison with the property owners will take place and water quality monitoring will be introduced if required.

Dust Management

General

66. Dust generated through construction has the potential to cause significant dust nuisance unless appropriate mitigation measures are undertaken. In contrast to noise, there are no direct legal provisions for the control of dust from construction activities. The Contractor will be under obligation to employ Best Practicable Means (“BPM”) to ensure the minimisation of the environmental impacts of dust in accordance with HSE Guideline (EH 44) for Dust Protection. The Contractor is also required under the Contract to follow the recommendations for dust control given in Health and Safety Report 73/1995: Dust and Noise in the Construction Process.

67. Under the Environmental Protection Act (“EPA”) 1990 Section 79(e) dust can be a statutory nuisance if caused by any trade, business, manufacture or process and is likely to be injurious to public health or cause a nuisance.

Dust Nuisance

General

68. The dust nuisance potential of any construction activity depends on a number of factors outlined below:
- nature, size and number of sources; effectiveness of dust suppression measures,
 - prevailing climate (e.g. wind speed and direction, rainfall and temperature), and
 - location and nature of potentially sensitive receptors and/or land uses e.g. local residences, industry, and commerce).

Potential Sources of Dust Emissions

69. Significant quantities of atmospheric dust can arise from the mechanical disturbance of granular material exposed to air. Dust generation from these open sources is termed ‘fugitive’ because it is not discharged to atmosphere in a confined stream. A number of potential sources of such fugitive emissions from construction of the Mynydd y Gwynt Windfarm are outlined below:
- vehicle movements over site tracks in dry conditions;
 - on-site earth-moving operations during construction;
 - blow-off and spillage from vehicles and the carrying of mud onto public roads during import of aggregate and any export of surplus soil material;
 - wind blowing across bare dry construction areas and stock piles.

Best Practice Dust Control Methods

70. The potential for dust generation can be significantly reduced through the adoption of appropriate preventative measures to control dust emissions both on and off-site. This section presents a series of control measures for implementation by the appointed Contractor and includes general staff responsibilities for monitoring and reporting. Implementation of these measures will help to minimise the number of complaints relating to dust nuisance.

Dust Control - Contractor and Staff Responsibilities

71. The Contractors’ appointed Health, Safety and Environmental Officer will have day-to-day responsibility for ensuring that dust mitigation measures are implemented and monitored. The Health, Safety and Environmental Officer will be permanently resident on site for the duration of the works. Notwithstanding the given duty of the Health, Safety and Environmental officer, or his approved deputy to monitor the application of the following recommendations and site regulations, the same will have the authority to ban from site

any haulier or person who wilfully or otherwise fails to comply with the dust mitigation requirements notified.

72. The Contractor will be required to take all necessary measures to avoid creating a dust nuisance and will be expected to produce and notify the authority of the following items outlined below.
73. The Contractor will issue a statement of commitment signed by the Site Manager (or equivalent) expressing the company's commitment to the avoidance of nuisance from dust and that this is a priority in the choice of construction methods.

Dust Management - Practices and Procedures

74. The following practices and procedures will be adhered to:
- Heavy goods and other construction traffic will enter and exit the site through the dedicated site entrance off the A44(T).
 - A suitable wheel-wash facility will be installed and maintained on site during the construction period. All drivers will be required to inspect their vehicles and use this facility prior to their exit from the site if required.
 - The use of the wheel cleansing facility shall be monitored by the Health Safety and Environmental Officer.
 - An alternative, subject to approval from the Highway Authority, would be to use vacuum sweeper brushes and other specialised road cleansing equipment, as required, and as appropriate.
 - All construction vehicles leaving the site with loads likely to generate dust will be adequately sheeted to prevent dust emissions.
 - Unsurfaced site tracks will be regularly damped down as required using bowsers provided by the Contractor and shall be adequately maintained to prevent ponding and accumulation of dirt. These spray bowsers will be deployed as a regular routine circuit of the site tracks as required to avoid dust generation.
 - All materials stockpiles will be located away from the site boundary and dusty materials will be damped down using suitable and sufficient water sprays during dry weather.
 - Only short term stockpiles are likely to be used, however the surfaces of any long term stockpiles found necessary will be sealed or covered.
 - All handling areas will be maintained in a dust free state as far as is practicable. Bowsers and hand held hoses/sprinklers will be employed to prevent dust escape.
 - Procedures will be established so that the site is regularly inspected for spillage or dusty or potentially dusty materials and any such spillage dealt with promptly.

- Cutting and grinding operations on site will be conducted using equipment and techniques which reduce dust emissions to a minimum, incorporating any dust suppression measures where practicable.
- A telephone number for complaints regarding dust will be published local to the site. The Site Health, Safety and Environmental Officer will have the appropriate authority to act to resolve any problems that may occur. The Health, Safety and Environmental officer and the site managers 'out of hours' telephone numbers will be available.
- Completed earthworks should be sealed and/or re-vegetated as soon as reasonably possible
- The site may be monitored by the local authority for compliance with these conditions, both through visual inspection and analytical monitoring. The main contractor will set up its own monitoring programme to evaluate compliance with the measures outlined above.

Pollution Prevention and Control

Prevention of Contamination to Watercourses

Oil Storage Tanks

75. All oil tanks will be fully bunded. Water from bunds of tanks containing other chemicals will not be disposed of via surface water drains or soakaways. In the rare event of an oil spillage into the bund the oil will be pumped out to a road tanker for re-use or disposed of in accordance with relevant legislative requirements.
76. No tanks or pipework containing liquids such as fuel oils or chemicals will be below ground.
77. Storage tanks will be located where they can be inspected externally for corrosion or leaks. They will be provided with sound foundations to avoid settling. Vessels will be protected internally and externally against corrosion and marked with the product type and tank capacity. Every part of the tanks, including valves and filters, will be within a bund as described below.
78. Prior to filling the fuel oil tank, containing fuel for the diesel generators, the tanker unloading equipment will be checked for leaks. There will be a clear level indicator and delivery will not be started until personnel are sure that there is room in the tank for the delivery. The tanker driver or operating technician will remain with the tanker throughout the offloading.
79. Normally, rainwater will be allowed to evaporate from within a bund. Should there be a need to removed accumulated rainwater, it will be removed by a manually operated pump discharging through an approved design oil separator.
80. Drip trays will be utilised in conjunction with items of temporary plant such as generators to prevent contamination of surface soils and run-off. The drip trays will be inspected daily and emptied as required.

Foul Sewage

81. All foul sewage from the development during construction will be store in tanks for offsite disposal. The tanks will be sized to suit the site and emptied at intervals as required for disposal at an approved treatment works.

Pollution Emergency Response

82. The Contractor will ensure a state of preparedness for the eventuality of an accident or emergency. The steps to be taken are discussed below.
83. The Site Manager will be responsible for implementing emergency contingency plans in liaison with other appropriate persons utilising detailed procedures held at site derived from those utilised successfully on other wind farm sites elsewhere.
84. Emergency equipment will be made available during construction at the central stores. This will include oil absorbent granules, floating booms, pumps and disposal skips.
85. Any small spillages of fuel, oil or other contaminant to soil or water shall be immediately cleaned-up using absorbent material which shall then be disposed of off-site as directed by the Waste Regulation Authority. In the event of a larger spillage described above, the Site Manager shall ensure that the necessary authorities are informed. The location of the incident and details of the nearest access point shall be advised together with the nature and scale of the incident.

Temporary Site Illumination

86. Artificial lighting used during construction has the potential to cause nuisance to nearby residences and sensitive receptors, unless appropriate mitigation measures are undertaken. To minimise obtrusive lighting the general principles of the Institute of Lighting Engineers, Guidance Notes for the Reduction of Light Pollution, Bats and Lighting in the UK, Bats and the Built Environment Series by the Bat Conservation Trust and Guide for Lighting Exterior Working Areas, (CIE, 1998) have been referred to.
87. The guidance notes above outlines practice to reduce the problems of unnecessary, obtrusive light. This includes:
- Do not 'over' light. The guidelines outline that this is a major cause of light pollution.
 - Switch off lights when not required for safety, security or enhancement of the night time scene.
 - Use specifically designed lighting equipment that minimises the upward spread of light near to, or above the horizontal. Care should be taken when selecting luminaires to ensure that the units chosen will reduce spill light and glare to a minimum.
 - Keep glare to a minimum by ensuring that the main beam angle of all lights directed towards any potential observer is kept below 70 degrees. Higher mounting heights allow lower main beam angles, which can assist in reducing glare.

- In areas with low ambient lighting levels, glare can be very obtrusive and extra care should be taken when positioning and aiming lighting equipment. However, if there is no alternative to up lighting, then the use of shields, baffles and louvers will help reduce spill light around and over the structure to a minimum.
- Bats are particularly sensitive to UV light emitted by certain types of lamp.
- Artificial lighting is thought to increase the chances of bats being preyed upon. Many avian predators will hunt bats which may be one reason why bats avoid flying in the day.
- Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats.

Light Sensitive Receptors

88. The area for development comprises of upland farmland situated on rolling hills. Sensitive receptors are considered to be adjacent properties but due to the topography and distance of the site nuisance from artificial light is considered to be minimal.
89. Ecologically sensitive receptors include foraging bats and fish in the River Wye. The physical separation between the River and construction areas for the windfarm ensures the windfarm will have a negligible effect on fish in the River Wye. There are no fish in the upper reaches of the Afon Bidno and thus no effect.
90. Construction compound lighting will be specified as a low UV type and directed away from the Nant y Gwrddy valley to avoid disruption to bat foraging routes.
91. The potential for pollution from artificial lighting can be significantly reduced through the adoption of appropriate preventative measures to control light emissions both on and off site. This section presents a series of control measures for implementation by the Appointed Contractor and includes general staff responsibilities for monitoring and reporting. Implementation of these measures will help to minimise the impacts relating to lighting nuisance.
92. Working close to sensitive receptors will be limited to natural daylight hours where possible.

Hours of work

93. The hours of work associated with the development is stated as being between the following times (unless it is associated with an emergency or is carried out with the prior approval of the Council):
- Monday to Friday 0800-1800
- Saturday 0800-1300
94. The construction phase will span a continuous period of about 56 weeks. Artificial lighting will be required for different periods of the day during this phase, depending on the time of year. From October to approximately April, it is anticipated that hours of use of artificial

lighting will range from approximately 0800 – 0900 on mornings from Monday to Saturday and on afternoons, 1530 to 1800, Monday to Friday. From April to October it is anticipated that no artificial lighting will be required. There may be instances when these periods will vary because of poor weather or the lighting levels required for individual construction activities.

Construction Noise

95. The noise assessment suggests, due to the distance of most construction activities from sensitive noise receptors, noise during construction should not be a significant hazard. However best practice construction management of noise will be carried out. Contact will be made with neighbours to agree a process for notification where an event which will raise normal noise levels is planned or expected.
96. During the construction phase of the works, the Contractor shall employ machinery and methods of work so as to limit, as far as is reasonably practicable, the disturbance to residences and industries in the locality caused by construction noise.
97. All noise measurements will be made under normal environmental conditions, with equipment and at positions that comply with a protocol agreed with the local authority unless otherwise stated.
98. No HGV traffic, plant machinery or earth moving equipment associated with the construction of the Development shall enter or leave the site outside of normal working hours unless one of the following exceptions is applicable:
- i) an abnormal load delivery; or
 - ii) the movement is associated with an emergency on the Site; or
 - iii) the movement is with the prior written approval of Powys County Council
99. Where appropriate the Contractor shall follow the advice given the following standards to control noise emission from the site:
- *BS5228: Parts 1-3: Noise Control on Construction and Open Sites 1997, BSI*
 - *BS5228: Part 4: Code of Practice for Noise Control Applicable to Piling Operations 1997, BSI*
100. No impact pile driving in connection with the construction of the Development shall take place on the site outside of normal working hours.
101. It may be necessary to limit the use of certain items of plant which give rise to high noise levels to certain times during the normal working hours shown above.
102. Work outside these times will be required for certain activities. Where work is required outside of the hours above, the construction contractor will immediately advise the local authority in advance of the details of the work that will be carried out. This information will include:

- anticipated noise levels;
- plant details;
- proposed working hours and duration; and
- type of activity and reasons for variation to working hours.

103. The above discussion will only apply where the activity may be audible at the sensitive receptors.

Silencing of Plant and Equipment

104. It will be a requirement that all plant brought onto site within these periods is silenced using equipment that meets the appropriate British Standards. Plant will be silenced in accordance with the measures in BS 5228.

105. In particular, static plant in continuous use will be monitored immediately after installation to determine if further mitigation is required to reduce noise levels from the site.

Noise Monitoring during Construction

106. The following sections describe a provisional programme for noise monitoring. A final programme will be developed when construction methods have been finalised. It is proposed to establish a noise monitoring system to demonstrate and ensure that noise levels fall below the agreed levels.

107. Monitoring points will be installed at 'critical' locations including the sensitive receptors listed above. The location and number of monitoring points will be subject to agreement with local authority.

108. Sound levels will be monitored by the Contractor according to the methods set out in Appendix 'B' of BS 5228: Part 1. Measurements will include, but not be limited to samples after significant changes in the works, or as with the local authority.

Noise Reporting Requirements

109. The Contractors Health, Safety and Environmental Officer will be responsible for day-to-day monitoring activities and will complete a Noise Survey Report at suitable intervals, giving an account of recorded noise levels, exceedences of agreed limits and corrective actions taken.

110. In the event of a complaint being made by a local resident an investigation will be carried out by the Contractor's Health, Safety and Environmental Officer to establish the justification, or otherwise, of the complaint, the likely cause and possible remedial measures. A report will be written and filed with the noise monitoring reports, and will be made available to MYG and to the local authority on request.

Noise Complaints Procedure

111. MYG commits to carry out an investigation should a complaint regarding noise be received and shall identify necessary remedial measures to prevent reoccurrence. The local authority shall be informed of any complaint and the remedial measures which will be implemented within two working days of receipt of such complaint.

Disposal of Surplus Materials and Litter

112. Any surplus materials arising during the construction of the development will be disposed of in accordance with the Waste Regulations.
113. The Contractor will be required to make provision for the disposal from the works and temporary works of all waste products and litter. Soil and inert materials will be reused on site for example, for landscaping purposes and as road cover material.
114. Metal containers for inflammable waste will be used by the Contractor and arrangements made for regular collection and disposal off the site. The Contractor shall ensure that all such waste arising from his own or his sub-contractors activities is promptly disposed of into these containers and not left lying on the site.
115. All waste products shall be removed off site to a suitable location for disposal to the approval of the Engineer and the relevant authority.
116. Contaminated or hazardous material, uncovered during construction or brought onto site, will be disposed of by the Contractor.

Invasive Species

117. The Contractor will discuss with NRW any precautions necessary to avoid propagation of invasive species as listed on the NRW website.

References

CIRIA, (2010). C692 – Environmental Good Practice on Site. 3rd Ed.

CIRIA, (2001). C532 – Control of Water Pollution from Construction Sites.

CIRIA, (2010) C689 – Culvert Design and Operation guide

CIRIA, (1997). C697 - The SUDS Manual.

Environment Agency, (1999). Environment Agency Policy Regarding Culverts: Policy Statement.

Environment Agency, (2004). Pollution Prevention Guidelines: Above Ground Oil Storage Tanks: PPG 2.

Environment Agency, (2006). Pollution Prevention Guidelines: Treatment and Disposal of Sewage Where no Foul Sewer is Available: PPG 4.

Environment Agency, (no date). Pollution Prevention Guidelines: Works in, Near or Liable to Affect Watercourses: PPG 5

Environment Agency, (no date). Pollution Prevention Guidelines: Working at Construction and Demolition Sites: PPG 6.

Environment Agency, (2004). Pollution Prevention Guidelines: Refuelling Facilities: PPG 7.

Environment Agency, (2007). Pollution Prevention Guidelines: Vehicle Washing and Cleaning: PPG 13.

Environment Agency, (2004). Pollution Prevention Guidelines: Pollution Incident Response Planning: PPG 21.

EA Regulatory Position Statement 107 Guidance: Appendix 1 - Good practice guidance for dealing with concrete wash waters

Appendix 1 Construction Environmental management Plan - Schedule of Mitigation

Issue	Environmental Effect	Mitigation	Implementation	Timing	Residual Impact
Noise During Construction	The highest community noise levels are likely to be created during the soil movements and construction of the trenches when they are close to exposed site boundaries. This would be well within the level of noise normally found to be acceptable for an activity of this type and duration.	In accordance with BS5228, best practical means would be employed to control the noise generation. See Construction Noise Control at Paragraphs 95-103 of this CEMP for more details.	Construction method Statements /Planning Requirement	Construction	Not Significant
Dust during Construction	Dust from construction (vehicles on tracks, excavations) leading to pollution/sedimentation	Best practice Dust Management techniques will be implemented in accordance with HSE guidance. See Paragraphs 70-74 of this CEMP for more details.	Construction method Statements	Construction	Not Significant
Ecology	Pollution/ sedimentation of designated Sites and aquatic systems	The hydrological design of the project includes water management features designed to maintain the hydrological regime and reduce sediment runoff from the existing track network. Chemicals, oils and hazardous materials will be stored securely away from watercourses and the Environment Agency Pollution Prevention Guidelines will be followed. See this CEMP and the Hydrology Chapter 14 for more details.	Construction method Statements /Planning Requirement	Construction	Not Significant
	Loss of unmodified blanket bog and wet heath	Scheme designed to avoid high sensitivity areas. Prior to construction, an ecological surveyor will mark with surveying posts which side of the track to widen in areas of ecological concern, to avoid higher value habitats. Material stockpiled for reinstatement would not be stored on areas of better quality habitat. The hydrological design of the project includes water management features designed to maintain the hydrological regime and reduce sediment runoff from the existing track network. See Site design Chapter 5 and the Hydrology Chapter 14 for more details.	Construction method Statements /Planning Requirement	Construction	Not Significant
	Indirect effect of alteration of hydrology, pH, peat stability and localised drying.	The hydrological design of the project includes water management features designed to maintain the hydrological regime and reduce sediment runoff from the existing track network. See this CEMP and Hydrology Chapter 14 for more details.	Construction method Statements /Planning Requirement	Construction	Not Significant

Issue	Environmental Effect	Mitigation	Implementation	Timing	Residual Impact
	Disturbance to Curlew, Snipe,	A Pre-construction survey will be undertaken, marking breeding areas and micro-siting turbines to avoid breeding areas. If breeding Curlew are present, NRW will be consulted and work will not commence in the relevant areas until an approach has been agreed with NRW. Ensure timing of construction activities to avoid disturbance.	Construction method Statements /Planning Requirement	Construction	Not Significant
	Disturbance to red kite	A Pre-construction survey will be undertaken where works are scheduled to commence within 400m of 'mature' woodland (including conifer plantation) within the period February to August.			
	Disturbance to Otter, Water Vole, reptiles, Badger	A Pre-construction survey will be undertaken, marking holts/shelters/setts and micro-siting turbines to avoid these areas. Ensure timing of construction activities to avoid disturbance. A speed limit of 19mph for all construction traffic will be strictly adhered to, particularly during hours of darkness. Work on culverts will only take place during the day and at the end of each working day the watercourse will be cleared of any construction material so the Otters can pass through unobstructed. All open excavations will be ramped to enable easy exit by mammal species. Culvert pipes stored on site will be capped or if caps are not available, stored vertically, to prevent entrapment. See also EPS licence application form for Otter	Construction method Statements /Planning Requirement	Construction	Not Significant
	Destruction and Disturbance to bat habitats	Micro-siting turbines to ensure 50m distance from hedges and trees. No construction activities near mine adits. No nighttime working. Design of any permanent or temporary lighting such that it will be directed away from watercourses or bat roost exits.	Construction method Statements /Planning Requirement	Construction	Not Significant
	Invasive species	See Paragraph 117 of this CEMP for more details.	Construction method Statements /Planning Requirement	Construction	Not Significant
Archaeology	Possible loss of undiscovered archaeological remains and rich environmental data within peat deposits.	A watching brief will be carried out during the construction works in areas on or adjacent to the identified peat areas as well as a programme of sampling in areas of peat over 0.5m.	Construction method Statements /Planning Requirement	Construction	Not Significant

Issue	Environmental Effect	Mitigation	Implementation	Timing	Residual Impact
Hydrology	Change to hydrological regime Increase of impermeable surfaces resulting in increase in volume of surface water runoff.	The hydrological design of the project includes water management features designed to maintain the hydrological regime and reduce sediment runoff from the existing track network. See this CEMP and the Hydrology Chapter 14 for more details.	Construction method Statements/Planning Requirement	Construction	Not Significant
	River levels reduced	No abstraction from rivers onsite.	Planning Requirement	Construction	Not Significant
	Potential to redirect flow paths and block minor watercourses and drains, leading to localised flooding.	The hydrological design of the project includes water management features designed to maintain the hydrological regime and reduce sediment runoff from the existing track network. See this CEMP and the Hydrology Chapter 14 for more details.	Construction method Statements /Planning Requirement	Construction	Not Significant
	Erosion of peat and soils causing suspended sediment	The hydrological design of the project includes water management features designed to maintain the hydrological regime and reduce sediment runoff from the existing track network. See this CEMP and the Hydrology Chapter 14 for more details. Water Quality Monitoring Regime – see CEMP for details	Construction method Statements	Construction	Not Significant
	Risk of pollution of a watercourse through spillage and/or leakage of oils and chemicals into the soil and groundwater, or directly into watercourses. Potential contamination from concrete.	Best practice Pollution prevention and control measures will be implemented. See Paragraphs 75-85 of this CEMP and the Hydrology Chapter 14 for more details.	Construction method Statements	Construction	Not Significant
	Risk to Private water supplies	Best practice Pollution prevention and control measures will be implemented. See Paragraphs 65 and 75-85 of this CEMP and the Hydrology Chapter 14 for more details.	Construction method Statements	Construction	Not Significant
	Waste Materials Concrete construction waste litter	Waste will be disposed of in accordance with the waste regulations. See Paragraphs 63-64 and 112-116 of this CEMP and Chapter 6 construction for more details.	Construction method Statements	Construction	Not Significant
	Fuel and Oil spill	Control measures for storage and use of oils will be implemented, along with emergency plans. See Paragraphs 75-85 of this CEMP for more details.	Construction method Statements	Construction	Not Significant
Archaeology	Risk to Geological Mine SSSI	Construction activity remote from mine area. Tracks will be marked out of bounds to construction vehicles.	Construction method Statements	Construction	Not Significant

Issue	Environmental Effect	Mitigation	Implementation	Timing	Residual Impact
Socio-economic	Opportunities for local/regional contractors, potential for 20-30% of the capital cost to be awarded to local and regional companies.	MYG will seek to ensure maximum local supply of materials and minimise transportation to provide incentive for the principal contractor to source materials, plant and labour from within the local area.	Construction method Statements	Construction	Not Significant
Construction Traffic	Construction traffic causes local transport problems	Less than 2% increase in 12 hour traffic flow during peak traffic flows. Further details are available in the Traffic Management Plan	Traffic management Plan	Construction	Not Significant
Turbine Delivery	Possible delays due to convoys of abnormal loads.	AIL deliveries will be managed in accordance with the Traffic Management Plan	Traffic Management plan	Construction	Not Significant
Public Safety	Access management Public Safety	Permission to temporarily close access land around the turbine and track area will be sought. Appropriate warning signs and barriers will be installed to warn public. In the areas where the PROW is adjacent to the tracks, the PROW will be fenced to segregate construction traffic from PROW users. See Paragraphs 51-53 of this CEMP and Chapter 6 Construction for more details.	Construction method Statements /Planning Requirement	Construction	Not Significant