CONSTANT ENERGY LIMITED

TIRAWLEY WIND FARM

CO. MAYO

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

MANAGEMENT PLAN 2

WATER QUALITY MANAGEMENT PLAN

April 2026

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DOCUMENT APPROVAL

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1 INTRODUCTION

1.1 Scope and Requirements

The Contractor is responsible for pollution prevention for the duration of the contract and until such time as permanent measures, such as permanent drainage and silt mitigation controls, are deemed to be adequate and appropriately constructed.

In order to verify the efficacy of pollution prevention and mitigation works during construction, Water Quality Monitoring is required to be undertaken by a suitably qualified Environmental Consultant(s), prior to, during and post completion of construction works. This will include all watercourses within the catchment of the construction area. The monitoring will comprise visual, hydrochemistry and grab sample monitoring.

The approved plan will be coordinated and implemented on site by the Environmental Consultant appointed by the Contractor.

1.2 Reference Documentation

Construction works have the potential to cause pollution of the water environment. All construction works onsite, and specifically construction works to be undertaken within and within 50 m of any main watercourses and 10 m to main drains, will be completed in compliance with current legislation and best practice as detailed within the CEMP and in particular the Peat and Spoil Management Plan (**Management Plan No. 4**) and the Surface Water Management Plan (**Management Plan No. 3**)

The following reports (along with any further surveys conducted) will be used to inform the scope of the construction phase Water Quality Management Plan.

- Tirawley Wind Farm, Co. Mayo Environmental Impact Assessment Report (EIAR), April 2026.
- Tirawley Wind Farm, Co. Mayo Natura Impact Statement (NIS), April 2026.
- Tirawley Wind Farm, Co. Mayo CEMP, April 2026.

2 RESPONSIBILITIES

2.1 General

Responsibility for the water quality monitoring programme, and coordination thereof, will lie with the independent Ecological Clerk of Works appointed at the start of the programme

Prior to works commencing, the Ecological Clerk of Works or a suitably qualified person will be appointed by Constant Energy Limited with a responsibility to implement this Water Quality Management Plan. Among other requirements, the Water Quality Management Plan requires a full baseline water quality survey to be undertaken prior to the commencement of construction and requires the contractor to provide a 'schedule of work' to the Ecological Clerk of Works or water specialist at the beginning of each week.

Field monitoring (as described in **Section 3**) of water quality parameters and collection of samples will be undertaken by a suitably appointed person(s) (qualified to degree level with at least 5 years' experience in a similar role) based at the site. The Ecological Clerk of Works or nominated site person(s) will be appropriately trained on the required monitoring methods and the use, calibration and maintenance of all monitoring equipment used. Training will be provided by the water specialist appointed to undertake the Water Quality Monitoring programme. Undertake specific monitoring activities and reporting as defined in agreed documentation prepared as part of the planning process.

Monitoring will include:

- Daily visual inspection of Site Access Tracks for signs of ground damage or solids escape to nearby watercourses in vicinity of construction works
- The ground between the structure under construction and the nearest downslope watercourse for signs of solids escape or ground damage
- Surface water features in vicinity of construction works
- Any pollution control measures at structures and along Site Access Tracks (e.g., silt fences, drain or stream crossings etc.) for evidence of contaminated run-off or mitigation failure
- Attendance at the critical work phases including: Site Access Tracks construction, foundation excavation, watercourse crossings, concrete pouring and back-filling.

- Collection and analysis of water samples at a number of monitoring locations (i.e., upstream & downstream of the seven onsite water crossing locations) before, during (if potential pollution visually identified) and after construction works at that location
- EPA Q Value Biological Monitoring at ten water crossing locations (**Figure 2.1**) (i.e., upstream & downstream of instream construction work locations) before and after construction works.

Collection and analysis of water samples at a number of monitoring locations (i.e., upstream and downstream of construction work locations) before, during (if potential pollution visually identified) and after construction works.

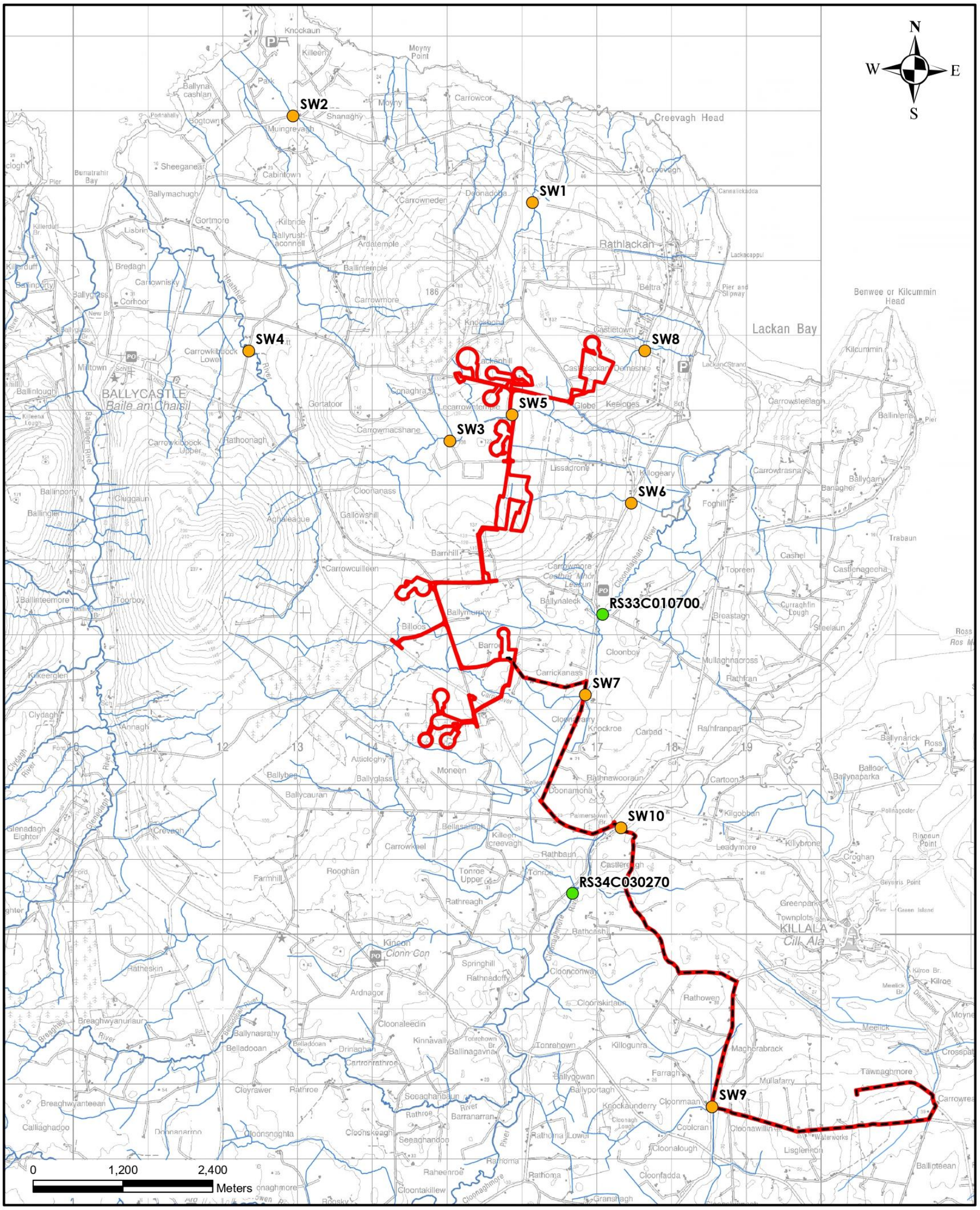

Figure 2.1: EPA Monitoring Stations and Surface Water Sample Locations

2.2 Hydrochemistry Monitoring

2.2.1 Field Monitoring

Field monitoring of water quality parameters and collection of samples will be undertaken by the Ecological Clerk of Works or water specialist. The person undertaking the water monitoring will be appropriately qualified to third level education and experienced in the field for no less than 5 years on the required monitoring methods and the use, calibration and maintenance of all monitoring equipment used. Sampling will be in accordance with International Standards of Operation. The chosen laboratory will be accredited.

2.2.2 Laboratory Analysis

Laboratory analysis of water samples will also be undertaken as part of the monitoring programme by an independent and appropriately certified laboratory to be appointed by the Ecological Clerk of Works or water specialist. ISO 17025 Accreditation proves a laboratory has an acceptable quality management system in place, and it has the ability and competence to provide testing and calibration results.

Coordination of the laboratory sampling and analytical programme will be undertaken by the person undertaking the water monitoring or the Environmental Manager. Samples will be dispatched for analysis under chain of custody procedures. Laboratory analytical results will be sent directly to the Ecological Clerk of Works/ water specialist and the Environmental Manager.

Interpretation and reporting of both the field and laboratory data will be the responsibility of the Ecological Clerk of Works.

2.3 Reporting

2.3.1 Monthly Water Quality Reporting

Results of water quality monitoring will assist in determining requirements for improvements in drainage and pollution prevention measures implemented on site. A monthly report on water quality will be prepared by the site Environmental Manager.

It will be the responsibility of the Ecological Clerk of Works to present the ongoing results of water quality and weather monitoring at site meetings and with outside bodies. This will be done at weekly meetings and reported within the overall Monthly Environmental Report to be prepared by the Ecological Clerk of Works.

The monthly reports on water quality will consider all visual, field monitoring and results of laboratory analysis received that month. Reports will describe how the results compare with baseline data as well as previous monthly reports on water quality. The reports will also describe whether any deterioration or improvement in water quality has been observed and whether any effects are attributable to construction activities and what remedial measures or corrective actions have been implemented.

Monthly reports on water quality will be provided to the Client Project Manager and will be made available to the Planning Authority.

2.3.2 Final Report on Water Quality

Upon completion of all post-construction monitoring, the Ecological Clerk of Works will prepare a final report on water quality. This final report will cover the overall performance against baseline data, details on any effects attributed to construction works and recommendations for remedial works if required.

The final report will be provided to Mayo City and County Council and Inland Fisheries Ireland.

2.4 Contingency Sampling & Emergency Response

In the event that a pollution incident arises which threatens to enter or has entered a watercourse from the construction works, additional sampling and analysis of surface water samples will be undertaken. Examples of such incidents include a spill or accidental release of chemicals, oils and fuels or concrete. Additional sampling and analysis will determine the level of impact to the surface water receptor and remedial requirements, where necessary.

Where a pollution incident has occurred as a result of construction works, the Ecological Clerk of Works/water specialist and Mayo County Council will be consulted to determine sampling requirements and any additional survey requirements where potentially significant impacts are identified. This will be done following the implementation of appropriate mitigation measures as per the **Emergency Response Plan** (Management Plan 1 of this CEMP).

The results of any monitoring or survey work undertaken by the Contractor will be made available to the Ecological Clerk of Works and the Local Authority. Copies of all correspondence and test certificates will be retained onsite.

3 WATER QUALITY MONITORING: OUTLINE SCOPE

3.1 General

Construction-stage details of monitoring and precise monitoring locations will be agreed in writing with the Local Authority prior to commencement of construction works and following consultation with Inland Fisheries Ireland. The Baseline water quality monitoring stations are outlined in **Figure 2.1**.

Water Quality Monitoring locations will be identified through grid reference, photographic record and indicated on a plan. For repeat sampling locations, each location will also be marked on the ground (stake/post) to ensure that the correct location is sampled each time.

Sample locations will be labelled consistently for the duration of the monitoring period. Where any additional locations are sampled during the works, the location (grid reference) of the sampling point will be recorded, and a photograph will be taken at time of sampling.

'Control' sample locations will also be included in the scope of any monitoring.

A water sampling location map will be developed and included in the detailed method statements for precise locations at water crossings within this development.

3.2 Monitoring Frequency

Monitoring frequency will be specified and agreed with Inland Fisheries Ireland and Mayo County Council prior to commencement of construction.

As a minimum, the monitoring programme will include:

- Daily visual checks across the construction works area;
- Weekly grab sampling for suspended solids and turbidity in catchments where construction is on-going and monthly monitoring for all other parameters;
- Event based sampling, e.g. after heavy rainfall (at least 4 no. event-based monitoring rounds per year);
- Additional sampling in the event of trigger level exceedance, e.g. after heavy rainfall; and,
- Post construction sampling programme (monthly sampling for 3 months).

3.3 Hydrochemistry Monitoring

Sample locations, monitoring frequency and precise hydrochemistry parameters will be agreed in writing with Mayo County Council, prior to commencement of construction, and following consultation with Inland Fisheries Ireland.

As a minimum, the monitoring programme will include:

- During the construction phase, daily visual inspections of excavations, dewatering procedure, settlement ponds, silt traps, buffered outfalls and drainage channels etc. will be carried out by a suitably qualified person. Any excess build-up of sediment at settlement ponds, drains or at any other drainage features that may decrease the effectiveness of the drainage feature will be promptly removed;
- During the construction phase of the Proposed Development, all development areas will be monitored on a daily basis for evidence of groundwater seepage, water ponding and wetting of previously dry spots;
- Following the completion of the construction phase, silt traps, buffered outfalls and drainage channels will be periodically inspected during maintenance visits to the Site when the operational phase water quality monitoring will also be carried out;
- Any proposed crossings of small unmapped drains will be monitored daily during construction and during each Site visit during the operational phase. These small culvert crossings will be monitored in terms of their impacts (if any) on the receiving watercourses and in terms of their structural integrity to identify any signs of erosion or potential for sediment release;
- It is proposed that a handheld turbidity meter is available at the Site to accurately measure the quality of water discharging from the Site. The meter will be maintained and calibrated before each use by a qualified site Environmental Manager; and,
- Any discharges of sediment treated water should meet the requirements of the *Surface Water Regulations 2009*, as amended.

Daily visual observation in areas of high construction activity or during high rainfall periods to identify any evidence of siltation, oil or silt. Visual inspections will include details of the colour of the water at the time of inspection.

Weekly visual inspections and monthly field hydrochemistry monitoring.

One round of post construction monitoring, to be agreed with Mayo County Council. Post construction will be defined as when the reinstatement phase is completed.

Monthly analysis of water parameters will be carried out. Construction-stage analytical determinants (including limits of detection and frequency of analysis) will be specified and agreed with the Local Authority and third parties for each sample location. The agreed suite of grab sample determinants will include the following:

Parameters for hydrochemistry analysis

- pH
- Temperature
- Total Suspended Solids (TSS)
- Dissolved Organic Carbon (DOC)
- Conductivity
- Dissolved Oxygen (DO)
- Total Oxidized Nitrogen (TON)
- Ammoniacal Nitrogen
- Ammonia
- Potassium
- Phosphate
- Biological Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)
- Total Petroleum Hydrocarbons (TPH)*

* Only during construction phase