

**IMPACT ASSESSMENT FOR THE PROPOSED SETTLEMENT POND DEVELOPMENT
FURTHER INFORMATION ITEM 2 (i) ABP-319457-24**

AT

**ARDKILL MORE TOWNLAND AND DRUMCROW,
CARRICKABOY
CO. CAVAN**



Prepared for

John Nulty Ltd

Prepared by

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1. Introduction

This assessment has been prepared in support of the response to An Coimisiún Pleanála's Further Information request for the proposed 20-year quarrying and extraction development at Nulty's Quarry, Ardkill More and Drumcrow Townlands, Carrickaboy, Co. Cavan. Item 2(i) of the Further Information request requires revised drawings of the greenfield site to the north of the appeal site showing existing site levels and existing features, including water/drainage features and existing ESB infrastructure, together with an assessment of the impact of the proposed development on those features.

Accordingly, this assessment considers the proposed excavation, construction and operation of the new settlement pond within the northern greenfield area and its potential interaction with the existing field drain, groundwater, existing quarry drainage infrastructure, discharge-monitoring infrastructure, septic tank and percolation area, boundary vegetation, ESB/utility infrastructure, site access and adjoining lands. The assessment should be read in conjunction with the revised planning drawings and the trial-hole/geological information submitted as part of the Further Information response.

2. Proposed Development

The proposed works comprise the construction of a new settlement pond within the greenfield area immediately north of the existing quarry. Drawing 17169-NLQ-MFA-00-ZZ-DR-A-519 P-05 identifies a pond footprint of approximately 1,701 m². The pond will be divided into ten settlement compartments, each 1 m deep, and will form part of the surface-water management system serving the proposed upper quarry extraction area.

The proposed drainage and settlement arrangement includes:

- a proposed 20 m³ inlet chamber at the southern end of the pond system;
- a hydro-brake flow-control arrangement upstream of the pond;
- a proposed outlet chamber, shut-off valve and flow meter at the northern end of the pond;
- a proposed Class 1 oil-water interceptor within the drainage arrangement;
- a 2 mm HDPE geomembrane liner to the proposed settlement pond;
- a proposed discharge point downstream of the new settlement pond, with flow continuing generally northwards along the existing drainage route; and
- proposed buffer planting together with the retention and management of existing boundary hedgerows and trees.

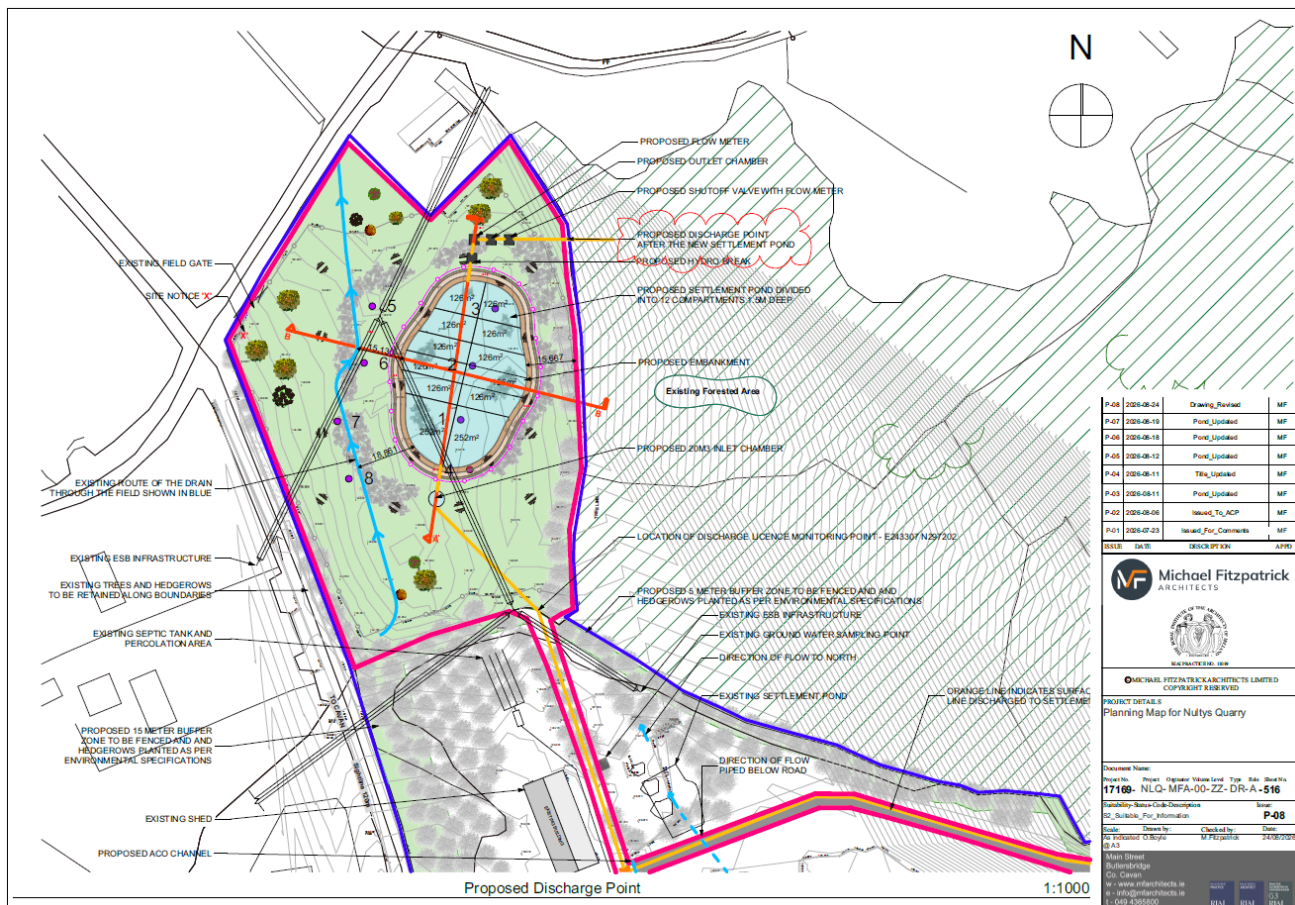
These elements form part of the overall surface-water management strategy for the proposed development. This assessment is concerned primarily with the potential local impacts arising from the construction and operation of the new settlement pond within the northern greenfield area and its interaction with the existing features identified on the revised drawings.

3. Existing Environment and Features

- The proposed settlement-pond site is located within the greenfield area immediately north of the existing quarry operations. The revised site layout submitted with the ACP response identifies the existing surveyed site levels throughout the northern greenfield area and within and surrounding the proposed settlement pond footprint. These levels establish the existing topography of the site and provide the baseline against which the proposed pond excavation and associated works have been assessed.

- The revised drawings and supporting site information identify the following existing features within or adjoining the assessment area:
 - an existing field drain crossing the greenfield area and continuing northwards;
 - an existing groundwater sampling point close to the southern/eastern part of the greenfield area;
 - the existing discharge-licence monitoring point at E243307 N297202;
 - an existing settlement pond and quarry drainage route to the south of the proposed pond area;
 - an existing septic tank and percolation area to the south-west of the proposed pond site;
 - existing trees and hedgerows along the site boundaries, together with an adjoining forested area to the east;
 - existing field access and road infrastructure;
 - existing ESB poles and associated utility infrastructure shown on the site survey; and
 - eight trial-hole locations around the proposed pond area used to record groundwater conditions.
- These existing features, together with the surveyed site levels, form the baseline for the assessment of potential interactions and impacts associated with the construction and operation of the proposed settlement pond.

Figure 1 - Revised Site Layout showing all existing features.



4. Groundwater and Excavation Relationship

The proposed settlement pond will have an excavation depth of 1 m and will incorporate a 2 mm HDPE geomembrane liner. Groundwater observations recorded during the site investigation at the trial-hole locations surrounding the proposed pond are summarised below.

Trial Hole	Recorded groundwater	Indicative separation below pond base	Comment
1	Groundwater at 2.0 m below ground level	Approx. 0.67m	Groundwater encountered
2	Groundwater at 2.0 m below ground level	Approx. 0.55 m	Groundwater encountered
3	No groundwater recorded	Not established	No groundwater recorded in trial hole
4	No groundwater recorded	Not established	No groundwater recorded in trial hole
5	No groundwater recorded	Not established	No groundwater recorded in trial hole
6	No groundwater recorded	Not established	No groundwater recorded in trial hole
7	GW at 2.5 m	Approx. 1.1 m	Groundwater encountered
8	GW at 2.5 m	Approx. 1.3 m	Groundwater encountered

Groundwater was recorded at 2.0 m below ground level at Trial Holes 1 and 2 and at 2.5 m below ground level at Trial Holes 7 and 8. No groundwater was recorded at Trial Holes 3,4,5 & 6. On the basis of these observations, the proposed 1 m excavation depth is above the groundwater levels encountered during the site investigation.

The indicative separations presented above are based on the recorded groundwater depths relative to local ground level and the proposed 1 m excavation depth. They should not be interpreted as the final demonstrated groundwater freeboard. The groundwater freeboard between the proposed pond base and the established groundwater level is addressed separately in response to Item 2(ii) of the Commission's Further Information request using the relevant surveyed levels and settlement-pond detail.

In relation to Item 2(i), the potential interaction with groundwater arises principally from excavation reducing the separation between the ground surface and groundwater and from the potential creation of an infiltration pathway between the proposed pond and underlying soils and groundwater. The proposed excavation depth will be limited to 1 m, and the pond will incorporate a 2 mm HDPE geomembrane liner providing an impermeable barrier between the pond contents and the underlying ground.

Based on the available trial-hole information and proposed pond design, the proposed works are not expected to intercept the groundwater levels encountered during the site investigation. Subject to confirmation of the groundwater freeboard required under Item 2(ii), installation and integrity testing of the HDPE liner, and implementation of the identified construction controls, no significant adverse effect on the existing groundwater level or local groundwater flow regime is anticipated.

5. Surface Water and Water Quality

The principal potential surface-water impact during construction is the generation of sediment-laden runoff from exposed soils and the potential for its entry into the existing field drain and downstream drainage network. There is also potential for accidental releases of fuel, oil or other hydrocarbons from construction plant. In the absence of appropriate controls, these activities could temporarily affect water quality within the receiving drainage system.

The operational purpose of the proposed settlement pond is to provide controlled treatment of runoff from the proposed upper quarry extraction area prior to discharge. The pond will comprise ten 1 m-deep settlement compartments, together with a 20 m³ inlet chamber, hydro-brake flow control, oil-water interceptor, outlet chamber, shut-off valve and flow meter. These measures will provide staged settlement, flow control and pollution protection within the proposed drainage system.

The following measures will be implemented to protect surface-water quality:

- Temporary clean-water diversion and appropriate silt-control measures will be installed before excavation or soil stripping commences.
- Drainage continuity will be maintained throughout construction and the existing downstream field-drain route will be protected from obstruction, erosion and siltation.
- Excavated material and temporary stockpiles will be located away from the existing field drain, septic tank/percolation area and proposed pond outlet route.
- Fuels and oils will be stored and handled within controlled areas, and appropriate spill-response measures will be maintained during construction.

- The proposed bunded refuelling and oil-interceptor arrangements will be operational before relevant quarry drainage is connected to the new drainage system.
- The settlement pond will not receive quarry runoff until the HDPE liner, inlet chamber, settlement compartments, outlet chamber, shut-off valve, flow meter and associated flow-control arrangements have been completed, inspected and confirmed operational.
- The outlet, flow meter and relevant monitoring and sampling locations will remain accessible for inspection and sampling.
- Accumulated sediment will be removed as required to maintain the effective settlement capacity and performance of the pond.

The supplied drainage information shows quarry-floor runoff being directed through the settlement system, with the general direction of drainage continuing northwards. The separate sampling-point drawing identifies the field-drain sampling point at E243275 N297378 and the Ballinagh Stream sampling point at E242408 N297875. These locations provide an established basis for monitoring water quality within the receiving drainage system.

Subject to implementation of the proposed drainage, sediment-control and pollution-prevention measures, no significant adverse effect on the existing field drain, downstream drainage network or receiving surface-water environment is anticipated.

6. Biodiversity, Vegetation and Landscape

Construction of the proposed settlement pond will permanently replace a limited portion of the existing northern greenfield area with a water-management feature. Existing boundary hedgerows and trees are shown to be retained and managed, while the revised layout provides landscaped buffer zones around the proposed development.

The proposed landscaping incorporates aquatic and marginal planting, including water plantain, brooklime, water mint, common water-crowfoot, common spike-rush, marsh marigold and yellow flag iris. Existing boundary vegetation will be retained where shown, supplemented by the proposed buffer planting and protected during construction.

The principal potential ecological effect associated with the proposed works is indirect and relates to the potential mobilisation of sediment or accidental pollutants into the existing field drain and downstream receiving waters during construction. The surface-water and pollution-prevention measures identified in Section 5 will therefore also provide the principal protection against indirect effects on downstream aquatic habitats.

Construction activity may also result in localised disturbance of vegetation and exposed ground around the pond footprint. Retained trees and hedgerows will be protected during the works, construction activity will be confined to the required working area, and disturbed ground and pond margins will be revegetated as soon as practicable following completion.

The proposed pond will result in a localised change to the existing greenfield character of the site. However, the retention of existing boundary trees and hedgerows, together with the proposed buffer and pond-edge planting, will maintain and supplement screening of the development as the planting becomes established.

Subject to implementation of the identified water-quality controls, protection of retained vegetation and establishment of the proposed landscaping, the residual effects on biodiversity, vegetation and the local landscape are expected to be localised and not significant.

7. Assessment of Impacts on Existing Features

Existing feature	Potential interaction / impact	Mitigation / design response	Residual effect
Existing field drains	The proposed pond and associated pipework will alter the local drainage arrangement and intercept surface-water flow presently conveyed through the field. Uncontrolled construction works could temporarily mobilise sediment, cause erosion or obstruct the existing drainage route.	Maintain drainage continuity throughout construction; install temporary sediment-control measures before earthworks commence; connect the completed pond to the controlled inlet/outlet arrangement; and protect the existing downstream drainage route from erosion and siltation.	The proposal will modify the local drainage arrangement and the manner in which surface water is treated prior to discharge. The existing field drain will, however, be retained as the downstream drainage pathway and drainage continuity will be maintained during and following construction. Subject to the proposed sediment-control, erosion-protection and controlled inlet/outlet measures, no significant adverse effect on the existing field drain or downstream drainage function is anticipated.
Groundwater	Excavation has the potential to reduce the separation between the proposed pond base and groundwater or create a pathway for infiltration if the pond is not appropriately lined.	Limit excavation to the proposed 1 m design depth; verify pond-base levels against the available groundwater information; install and integrity-check the specified 2 mm HDPE geomembrane liner; and avoid uncontrolled dewatering or discharge.	Not significant, subject to confirmation of the required groundwater freeboard and installation and integrity testing of the HDPE liner.
Use of fuels/hydrocarbons	Accidental fuel, oil or hydraulic-fluid spills from construction plant, particularly during refuelling or maintenance, could result in localised soil and/or water contamination.	Implement the proposed bunded refuelling arrangements, oil-water interception and appropriate construction-phase fuel-handling and spill-control measures. Refuelling and maintenance should be undertaken within designated controlled areas.	Low and temporary, subject to implementation of the proposed pollution-prevention and spill-control measures.

Existing feature	Potential interaction / impact	Mitigation / design response	Residual effect
Existing settlement ponds and quarry drainage	Construction and operation of the new pond will introduce an additional treatment system serving the proposed upper quarry extraction area and will modify the associated discharge arrangement.	Keep the existing/lower QY7 quarry drainage system operational; commission the new pond, inlet/outlet controls, hydro-brake and flow meter before routing runoff from the proposed upper quarry area to the new system; and maintain access for inspection, maintenance and sediment removal.	No significant adverse effect anticipated. The proposed pond will provide additional controlled treatment capacity for runoff from the proposed upper quarry extraction area.
Discharge licence monitoring point / proposed discharge point	The proposed drainage arrangement includes a new discharge point downstream of the proposed settlement pond. The works must maintain access to the existing discharge-licence monitoring point and provide appropriate flow control and monitoring of the new system.	Maintain access to the existing monitoring point at E243307 N297202; provide the proposed shut-off valve and flow meter; ensure the outlet remains accessible for inspection and sampling; and establish the proposed discharge point with the identified mitigation and control measures in place.	Not significant, subject to maintenance of monitoring access and implementation of the proposed flow-control and pollution-prevention measures.
Trees, hedgerows and adjoining forested area	Localised vegetation disturbance during construction could temporarily reduce screening, disturb exposed ground and increase the potential for erosion at disturbed margins.	Retain and manage existing boundary hedgerows and trees as shown on the revised drawings; establish the proposed 5 m and 15 m buffer planting; protect retained vegetation during construction; and revegetate disturbed ground promptly following completion of the works.	Minor, localised and temporary during construction. Long-term screening will be maintained and supplemented by the proposed buffer planting.
Utility / ESB infrastructure	Excavation and construction-plant operations could conflict with existing ESB poles or associated services if appropriate safe operating clearances are not maintained.	Set out and protect existing ESB poles and associated services before excavation commences; establish appropriate exclusion zones and maintain required safe operating clearances; and undertake no relocation or interference with existing infrastructure without prior	No relocation or direct interference is proposed. The residual effect is therefore considered low and not significant, provided the identified protection measures and safe

Existing feature	Potential interaction / impact	Mitigation / design response	Residual effect
		agreement with the relevant utility provider.	operating clearances are maintained.
Existing field gate and access	Construction traffic could temporarily affect access to the northern greenfield area.	Use the existing access in a controlled manner; keep the field gate and adjoining road clear; prevent the deposition of mud and construction material; and maintain emergency, inspection and maintenance access to the proposed pond.	Temporary, minor and not significant.
Boundary land / visual setting	Formation of the approximately 1,701 m ² settlement pond will permanently alter the existing greenfield character of a limited portion of the site.	The pond will be predominantly formed below existing ground level; retain existing boundary hedgerows and trees; implement the proposed buffer and pond-edge planting; revegetate disturbed areas; and provide appropriate safety fencing.	Localised and not significant following establishment of the proposed landscaping and buffer planting.

8. Construction Phase Controls

The following measures shall be implemented during construction to protect the existing site features and surrounding environment:

- Set out the proposed pond footprint, existing field drain, existing utility/ESB infrastructure and retained vegetation before works commence.
- Maintain the continuity of the existing field drainage system throughout the construction works and ensure that the downstream drainage route is not obstructed.
- Install temporary silt fencing and/or appropriate settlement and sediment-control measures before vegetation stripping, soil removal or excavation commences.
- Excavate the pond in controlled stages and do not exceed the proposed 1 m design depth without review of the groundwater conditions.
- Keep excavated material, construction plant and temporary stockpiles away from the existing field drain, septic tank/percolation area and retained hedgerows.
- If groundwater is unexpectedly encountered above the predicted level, cease excavation locally and refer the matter to the project engineer/geologist before further excavation is undertaken.
- Install and integrity-check the proposed 2 mm HDPE geomembrane liner before the settlement pond is placed into service.
- Protect existing ESB poles and associated utility infrastructure during construction and maintain appropriate exclusion zones and safe operating clearances for excavators, lifting plant and other construction machinery.
- Ensure appropriate fuel, oil and spill-control measures are in place during construction, with refuelling and maintenance undertaken only within designated controlled areas.
- Complete and inspect the pond liner, inlet chamber, settlement compartments, outlet chamber, shut-off valve, flow meter and associated flow-control arrangements before quarry runoff is directed to the new settlement pond.
- Protect retained trees and hedgerows during construction and reinstate/revegetate disturbed ground as soon as practicable following completion of the works.
- Provide secure safety fencing around the completed pond and maintain safe access to the pond, outlet, flow meter and monitoring locations for future inspection, sampling, maintenance and sediment removal.

9. Cumulative and Operational Considerations

The proposed settlement pond forms part of the surface-water management system serving the proposed upper quarry extraction area. Under the revised drainage arrangement, runoff from the proposed upper quarry area will be directed to the new settlement pond system for controlled treatment prior to discharge.

The existing settlement ponds will continue to serve the existing/lower QY7 quarry drainage system. The proposed upper quarry drainage system and the existing/lower quarry drainage system will therefore operate as separate treatment arrangements serving their respective catchments, with the new settlement pond providing additional treatment capacity specifically for runoff arising from the proposed upper quarry extraction area.

During operation, the new settlement pond will provide staged settlement through its ten compartments, together with the proposed inlet chamber, flow-control arrangements, oil-water interceptor, outlet chamber, shut-off valve and flow meter. The pond and associated drainage infrastructure will be subject to ongoing inspection and maintenance, including removal of accumulated sediment as required to maintain effective settlement capacity and continued access to the relevant monitoring and sampling locations.

Having regard to the separation of the respective drainage catchments, the continued operation of the existing QY7 drainage system and the additional controlled treatment provided by the proposed settlement pond, no significant adverse cumulative effect on the existing drainage network or receiving surface-water environment is anticipated.

10. Conclusion

The proposed settlement pond will result in the permanent alteration of a limited portion of the northern greenfield area. The revised layout has, however, been developed having regard to the existing surveyed site levels and the existing environmental and infrastructural features within and adjoining the proposed pond area, as identified on the revised site layout submitted with the ACP response.

The assessment demonstrates that the proposed works can be undertaken without significant adverse effects on the existing site features. The existing field drain will be retained as the downstream drainage pathway and drainage continuity will be maintained. Existing boundary trees and hedgerows will be retained, protected and supplemented by the proposed buffer planting. Existing ESB infrastructure will remain in situ and will be protected during construction through appropriate set-out, exclusion zones and safe operating clearances. The existing groundwater sampling and discharge-monitoring infrastructure will also remain accessible for ongoing inspection and monitoring.

Based on the available trial-hole information, groundwater was encountered at depths of 2.0 m and 2.5 m below existing ground level at the relevant trial-hole locations, while the proposed settlement pond will have an excavation depth of 1 m. The proposed pond will therefore be constructed above the groundwater levels encountered during the site investigation. The incorporation of a 2 mm HDPE geomembrane liner will provide additional protection to the underlying soils and groundwater. On this basis, no significant adverse interaction with the existing groundwater regime is anticipated.

Potential construction-phase effects are principally associated with sediment-laden runoff, accidental pollution, temporary disturbance of drainage and vegetation, and the operation of plant in proximity to existing infrastructure. These effects can be appropriately controlled through the identified sediment and pollution-control measures, protection of retained vegetation and utilities, controlled excavation, installation and integrity testing of the pond liner, and completion of the inlet, outlet and flow-control arrangements prior to commissioning.

Accordingly, subject to the implementation of the mitigation measures, construction controls and design safeguards identified in this assessment, the proposed settlement pond is not expected to result in significant adverse effects on the existing drainage network, groundwater, ESB/utility infrastructure, monitoring infrastructure, boundary vegetation, adjoining lands or the surrounding environment. The overall residual effect of the proposed development is therefore considered to be low and not significant.

11. Drawings and Documents Referenced

Reference	Relevance
FI Request ABP-319457-24	An Coimisiún Pleanála Further Information notice dated 23 April 2026.
17169-NLQ-MFA-00-ZZ-DR-A-515 P-02	Drainage Map – showing the existing settlement ponds, quarry-floor runoff and direction of surface-water flow.
17169-NLQ-MFA-00-ZZ-DR-A-516 P-05	Proposed Discharge Point – showing the proposed settlement pond, inlet and outlet arrangements, flow controls, buffer areas, monitoring infrastructure and existing site features.
17169-NLQ-MFA-00-ZZ-DR-A-517 P-02	Sampling Points – identifying the field-drain sampling point and Ballinagh Stream sampling point.
17169-NLQ-MFA-00-ZZ-DR-A-518 P-03	Existing Site Plan / Trial Hole Locations – showing existing site features, trial-hole locations and recorded groundwater observations.
17169-NLQ-MFA-00-ZZ-DR-A-519 P-05	Proposed Site Plan / Landscaping Plan and Pond Section A-A – showing existing surveyed site levels and existing features within and adjoining the northern greenfield area, together with the proposed 1,701 m ² settlement pond, ten 1 m-deep compartments, existing and proposed drainage arrangements, ESB infrastructure, groundwater sampling point, discharge-licence monitoring point, septic tank and percolation area, retained trees and hedgerows, buffer planting and associated works.
17169-NLQ-MFA-00-ZZ-DR-A-520 P-02	Overall Proposed Drainage and Quarry Plan – showing the proposed surface-water drainage arrangement, settlement pond, attenuation sump, refuelling area and oil-interceptor measures.