



## BALLINAFAD WASTEWATER TREATMENT WORKS

Temporary wastewater treatment works for the village of Ballinafad, Sligo

**Client: Sligo County Council**

### SUMMARY:

**Value:** €20, 000  
**Population Served:** 200 p.e.  
**Status:** Complete

**Services Provided:**  
Detailed Design Project Management

Nicholas O'Dwyer Ltd. were appointed by Sligo County Council as Client's Representative for the Tubbercurry, Grange and Strandhill DBO Bundle. The scheme also included for the construction of a new WwTP for the village of Ballinafad.

Under this appointment, Nicholas O'Dwyer Ltd. were requested to assess the performance of the existing wastewater treatment works and, if necessary, to design and procure a temporary wastewater treatment plant (WwTP) for the village of Ballinafad in January 2008.

The examination of the existing wastewater treatment system in the village, which comprised of a septic tank and peat filter followed by a discharge to groundwater, concluded that the system was not performing satisfactorily. Due to the proximity of the Ballinafad Stream (a tributary of Lough Arrow) and an emergency drinking water abstraction point on Lough Arrow it was concluded that an interim solution would be required to reduce the risk of surface water pollution and the risk to public health. Mindful of the future upgrading of the works under a DBO contract, the solution was required to have a low capital cost.

Through a review of developments in wastewater treatment technology, the Anaerobic Baffled Reactor (ABR) was flagged as a potential solution. An ABR consists of:

- a settlement section, and
- a section comprising of a series of baffles, used to direct the flow of wastewater in an upflow mode through the sludge blanket, ensuring increased contact between anaerobic biomass and wastewater, to improve treatment performance.

An initial design was prepared in-house, using the existing septic tank as the settlement section, and two proposed 36m<sup>3</sup> precast concrete tanks with baffles as the reactor. Treated effluent would discharge to the existing peat filter, with subsequent discharge to the Ballinafad Stream. A cost assessment of the design concluded that the ABR had a low capital cost relative to other technologies and had no running costs.



Following approval of the design, the production of the precast tanks and baffles was fast-tracked, with the on-site installation, which was overseen by Nicholas O'Dwyer Ltd. and Sligo County Council, completed by February 2008. The installation was the first known ABR to be installed in the Republic of Ireland.



**Nicholas O'Dwyer**  
CONSULTING ENGINEERS