



Comhairle Chontae Chill Mhantáin

WICKLOW COUNTY COUNCIL

Aras An Chontae
Cill Mhantáin
Telefón : (0404) 20296
Fax No : (0404) 67792
Intl VPN : 1035 2296
E-Mail: env@wicklowcoco.ie
Web: www.wicklow.ie

Your Ref:

Our Ref: PD/LOB

17th September 2010

Mr. Brian Meaney,
EPA Headquarters,
Johnstown Castle Estate,
Co. Wexford.

Environmental Protection Agency Licensing
Received
17 SEP 2010
Initials _____


RE: Ballymurtagh Landfill – Waste Licence Application and EIS – W0011-02

Dear Mr. Meaney,

I refer to your letter dated 30th July 2010 and received at these offices on 4th August 2010, requesting further information by way of notice in accordance with Article 14(2)(b)(ii) of the Waste Management (Licensing) Regulations with respect to our application for a Waste Licence at Ballymurtagh Landfill facility.

I now enclose Wicklow County Council's reply to your letter.

Yours sincerely,


Philip Duffy,
Senior Executive Officer,
Water & Environmental Services.



Comhairle Chontae Chill Mhantáin

WICKLOW COUNTY COUNCIL

Aras An Chontae
Cill Mhantáin
Telefón : (0404) 20296
Fax No : (0404) 67792
Intl VPN : 1035 2296
E-Mail: env@wicklowcoco.ie
Web: www.wicklow.ie

Your Ref: 17th September 2010
Our Ref:

Mr Brian Meaney
EPA Headquarters
Johnstown Castle Estate
Co. Wexford.

RE: Ballymurtagh Landfill - Waste Licence Application and EIS - W0011-02

Dear Mr. Meaney,

We write in response to your letter dated 30th July 2010 and received at these offices on 4th August 2010, requesting further information by way of notice in accordance with Article 14(2)(b)(ii) of the Waste Management (Licensing) Regulations with respect to our application for a Waste Licence at Ballymurtagh Landfill facility.

As discussed, August is traditionally the time of year where most staff take annual leave and the Site Facility Manager was on leave at this time. Some of the information requested involved additional site works. Ballymurtagh Landfill is a closed facility and from a health and safety point of view, it is important that the Site Facility Manager is present for any site works. Therefore it was not possible to provide the information requested within the four-week timeframe of the date of the notice.

In accordance with the notice, the following supplementary information is provided:

Item 1 requested : *All available borehole logs and well construction information (from original site investigation reports).*

All available borehole logs and well construction information from the original site investigation reports between 1986 and 2010 are presented in Section 1 of this submission. The log of a new borehole, L10/01, installed within the landfill in July 2010 is presented at the end of this section. Figures showing the locations of all boreholes are also included. Boreholes installed between 1986 and 1996 are shown on Map 1 and boreholes installed between 1998 and 2010 are presented on Map 2.

Item 2 requested : *Well specific hydrographs (depth below surface and m AOD) and overall piezometric surface maps.*

Well specific hydrographs from available information for groundwater well locations G2/04, RC6, G1/04, G1/05 and G2/05 are included in Section 2 of this submission. Piezometric surface maps following a dry period in September 2007 and following a wet period in January 2008 are also presented in this section.

The spreadsheets used to generate the hydrographs are presented in electronic format only on the attached CD-ROM included in Section 8.

Item 3 requested : *Cullen 1987 site investigation report for the quarry site pre-landfill development.*

A copy of the Hydrogeological Report prepared by K.T. Cullen in 1987 is presented in Section 3 of this submission. Photographs taken of the Open Pit at the time of this investigation are also included in this section.

Item 4 requested : *Pre-landfill survey information (base of landfill and basal structure location such as mine shafts).*

A comprehensive study on the 'Characterization of the Avoca Mine Site' was carried out in 1997 by Vincent Gallagher and Pat O'Connor of the Geological Survey of Ireland. An extract from this study presenting information on the mining features at West Avoca, including the open pits, the adits, the levels of mining, and the shafts is presented in Section 4 of this submission. Copies of the relevant maps from this study are also included. At the end of this extract an image of the underground mines and the open pit areas is superimposed on an aerial photograph of the closed Ballymurtagh landfill taken in 2008.

Included in this section are copies of the 'blue prints' of drawings prepared in 1988 for the development of Ballymurtagh landfill along with a general description of the then proposed landfill design works, also prepared in 1988. Map 8 shows the pre landfill topographic survey information.

Item 5 requested : *Landfill cap design report or information (as built drawings).*

The 'As Built' capping system layout from the contractor along with standard details issued for construction of the capping are presented in Section 5 of this submission. In addition a copy of the CQA Validation Report for the capping works is also included in this section.

Item 6 requested : *Post landfill completion level survey information.*

A topographical survey of the site that was carried out in 2009 is presented in Section 6 of this submission. A plot of post capping settlement across the site for the three years from 2006 to 2009 is also presented in this section.

Item 7 requested : *Landfill leachate level time serial data.*

Graphical representation of the monitoring of leachate levels from 2003 to 2010 is presented in Section 7. The spreadsheets used to generate these graphs are presented in electronic format only on the attached CD-ROM included in Section 8.

It should be noted that due to the composition of the waste, the covering practices at the site, and settlement movements across the site, the monitored leachate levels, post capping works in particular, are more indicative of 'perched' leachate as opposed to the level of leachate within the waste body. Some evidence of this has been provided through the installation of a new leachate monitoring well, L10/01, in July 2010 at the location shown on Map 2 of this submission. A leachate level of approximately +71 mOD is indicated, whereas previously a leachate level of approximately +76 mOD was recorded at this location at L03/2. The original ground level at the base of the landfill prior to development was +70 mOD.

Item 8 requested : *Post 2008 monitoring data for the landfill, including the Ballymurtagh adit (ammonium data is key).*

All monitoring data from when regular monitoring of the landfill commenced in 1998 up to 2010, including post 2008 data, is presented in Section 8. As discussed, these spreadsheets are in electronic format only on the attached CD-ROM included in this section. The spreadsheets contain information on groundwater and surface water monitoring, including Ballymurtagh Road Adit, as well as monitoring of leachate and private wells.

It should be noted that there are various pressures on surface water quality downstream of Ballymurtagh Road Adit, including septic tanks, agricultural run-off and fish farms, that may contribute to ammonium levels in the river.

Item 9 requested : *All data for monitoring wells immediately to the east-northeast of the landfill (G1/04, RC6, G4/04 and MW).*

All data for monitoring wells immediately to the east-northeast of the landfill specifically (G1/04, RC6, G4/04) are included in the spreadsheet for groundwater monitoring results referred to in Section 8 above. Monitoring well, MW, was constructed as a groundwater monitoring well in 1998, however there is no reliable sampling data for this well from 1998 onwards as this well had become damaged and blocked from October 1998.

Included in Section 9 of this submission are the certified laboratory test results for monitoring location G5 for 2009 and 2010. The certificate issued for G5 last month, August 2010, confirms what has been said in the submitted EIS in November 2009, that there is no indication of landfill leachate migration at this location southeast of the landfill.

Item 10 requested : *All trace metal and metalloid (if it was collected), for example arsenic and nickel which are expected to also be associated with the mine workings.*

Information on metal and metalloid data is presented in the 2008 Feasibility Study for the Management and Remediation of the Avoca Mining Site by the Department of Communications, Energy and Natural Resources. This study can be referenced from that government department. However for convenience, an electronic copy of this study along with supporting databases are presented on the attached CD-ROM included in Section 8 of this submission.

CDM, the lead consultants for the Feasibility Study, has prepared a letter, dated 20th August 2010, to address the information requested under Item 10 of the Notice and a copy of this letter is also included.

Item 11 requested : *River water quality data (graphed) of landfill specific chemicals of potential concern and in particular ammonium, key trace metal and metalloids and pH.*

Graphical representation of river water quality data for ammonium, chloride, pH and available metal data is included in Section 11 of this submission. The spreadsheets used to generate these graphs are presented in electronic format only on the attached CD-ROM included in Section 8.

Item 12 requested : *The suggestion that groundwater sampled from monitoring wells down gradient of the landfill (well group including G1/04) sometimes has chemical or hydrocarbon odours requires supporting laboratory analysis data if available(e.g., speciated TPH, some VOC/sVOC results when such evidence is reported).*


Detailed analysis of all groundwater monitoring wells, including the G1/04 well group, for a suite of VOCs, sVOCs and OCPs (Organochlorine Pesticides) was carried

out in November 2009. These laboratory test results are presented in Section 12 of this submission.

The information submitted in compliance with this notice does not alter the non-technical summary of either the Waste Licence Application or the EIS submitted in November 2009. The information now being submitted includes detailed historical information and more supporting information for the conclusions and recommendations made in the EIS. Therefore a revised non-technical summary is not being submitted.

All drawings and figures included in compliance with this notice have been listed as maps and are numbered and presented as requested. One original copy and one hardcopy of the submission along with sixteen (16) CD-ROM copies are included. As discussed in our telephone conversation on 10th September 2010, printed hardcopies of spreadsheets have not been submitted.

Yours sincerely,


BREEGE KILKENNY,
SENIOR ENGINEER,
WATER & ENVIRONMENTAL SERVICES.

For inspection purposes only.
Consent of copyright owner required for any other use.