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Tony Roberts
NRW
By e-mail

Tuesday 18 July 2023

Ref: 4097/ES/LT/0007

Re: Llanddulas Landfill – 16/4097
Permit BU0800IZ – Llanddulas Landfill Valley Feature Fill

Dear Tony,

Thank you and your colleague Gareth Siney for meeting Christopher Bennion, Kellie-Marie Burston of FCC Environment (UK) Ltd (FCC) and I at Llanddulas Landfill on 11 July 2023.

At the meeting I outlined the Operator's (3C Waste Limited, part of the FCC group) proposal to vary the extant permit as efficiently as possible to clearly reference the existing restoration/engineering activities within the Llysfaen Valley feature. It is proposed that a line could be inserted within permit Table S1.1 detailing the activity as recovery with specific reference to Annex II of the Waste Framework Directive.

At the meeting you requested additional information including examples of how similar activities have been incorporated within other permits. You also requested a summary of the relevant site history and information that could be provided in support of a variation application, information that could form the basis of a Waste Recovery Plan (WRP) submission if required.

Following provision of the aforementioned requested information you indicated that you would undertake discussions with your colleagues within the relevant permitting team and provide feedback with advice on how best to progress any permit variation application.

This letter provides the requested information.

History

Llanddulas Landfill and Quarry are located to the southeast of Colwyn Bay. Mineral extraction of grey and white limestone at Llanddulas Quarry commenced in the 1830s covering an area of approximately 89 hectares. Infilling comprising the sequential filling of Phases 1, 2 and 3 commenced in 1985 with the site being operated by Colwyn Borough Council under a Deemed Planning Consent granted in February 1984 and Resolution issued under Section 11 of the Control

of Pollution Act 1974. Phase 1 was developed during 1983 with landfilling commencing in 1985. Phase 1 was completed during 1994.

Planning Permission (ref: 1/14171) was issued on 4th November 1991 to ARC Powell Duffryn to permit the continued landfilling. A Waste Disposal Licence (Licence No. CBC 06) was issued on 15th January 1992 for the infilling of Phases 1 and 3. Phase 2 was split into eastern and western phases. The eastern half of Phase 2 was regulated by Licence No. CBC 08 issued on 3rd November 1992 and subsequently developed in 1994 and completed by 2001. Planning Permission ref: 1/16360 was issued in July 1995 for a minor extension of the landfilling area and approval of the restoration scheme for the entire landfill area. The respective landfill phases were changed as part of this application with the western half of Phase 2 being renumbered as Phase 3a.

Two Pollution Prevention and Control (PPC) permit applications were submitted to the Environment Agency in February 2003 for two areas of the site consisting of Phases 1 & 3 (north) and Phases 2 & 3a (south). These two application areas were subsequently consolidated into one during determination of the applications. This allowed for the issue of one consolidated permit (Ref: BU0800IZ) in February 2004 that included Phases 1, 2, 3 and 3a, formerly the western half of Phase 2.

Phase 3 was developed during 2002 and partially completed by 2009. Planning permission ref: 0/27248 was issued on 21 January 2004 to allow for the revised sequence of landfilling and restoration phasing at the site. The revised phasing allowed the filling of Phase 3a to begin prior to the remaining areas of Phase 3, thus allowing for the retention of the site infrastructure within Phase 3. This resulted in the creation of Phases 3b and 3c which are areas of Phase 3 that can only be filled following the re-location of site infrastructure. Phase 3a began accepting waste in 2004, waste disposal operations are still on going in this phase.

An additional planning permission was granted on 4 April 2007 (Ref: 0/32704) allowing for a revision to restoration proposals and phasing timescales to take account of the availability of restoration soils. This was more recently revised by planning permission ref: 0/43848 issued on 15 June 2018. The planning application was submitted to consolidate previous planning permissions which had overlapping conditions. As part of this application planning permissions referenced 0/16360, 0/27248 and 0/32704 were revoked. This planning permission also authorised changes to phasing and timescales of landfilling and restoration of the site which requires all landfilling operations to cease on or before 31 December 2055.[1] Planning permission ref: 0/43848 is the current extant Planning Permission for the site and contains the obligations for restoration.

The most recent environmental permit variation for the site is referenced EPR/BU0800IZ/V013 issued on 7 July 2022. The conditions have been varied numerous times since the original PPC permit was issued in 2004, the last full set of consolidated conditions appears in the 30 May 2008

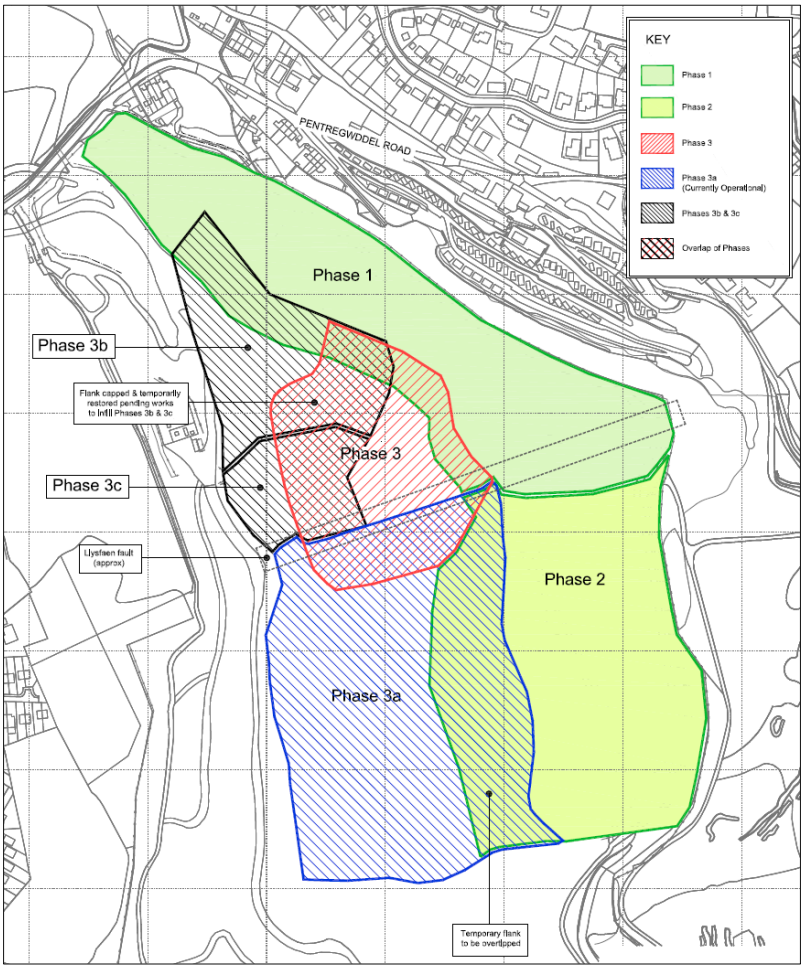
[1] GP Planning Limited. Consolidating Section 73 Application: Proposed amendments to phasing and timescales for completion of landfill and restoration. March 2017.

permit variation. The Environmental Permit authorises the operation of the non-hazardous landfill, a leachate treatment facility, gas engines and associated flare.

The permit limits non-hazardous landfilling to 20 hectares of the former quarry within Phases 1, 2, 3 and 3a.

The indicative phasing layout is shown below at Figure 1.

Figure 1: Indicative phasing layout



Phases 1 and 2 have been fully restored. Partial areas of Phase 3 have been restored.

The north (Phases 1 and 3) and south (Phases 2 and 3a) of the site are physically separate with the landfilled areas creating two separate flanks of waste resulting in a valley feature between them. This separation is consistent with the location of the Llysfaen Fault.

Llysfaen Fault

The Llysfaen Fault runs across the base of the valley between Phases 1 & 3 (north) and Phases 2 & 3a (south). The Llysfaen Fault is located to the immediate south of Phases 1 & 3 and north of Phases 2 & 3a and is oriented approximately east to west and traverses the quarry. The fault dips towards the south at approximately 45 degrees and around 40m of displacement to the south.

The Valley Feature

During the PPC re-permitting process, detailed and extensive discussions took place throughout 2002 and into 2003 between the Operator, their consultant (SLR), and the Environment Agency.

The discussions concerned the extent of the proposed permit area/s and the separation between the north and south landfill areas.

It is clear from the records of the discussions (particularly the letters dated 18 July 2003 and 18 August 2003 extracts below) that the two areas of landfill, north (Phases 1 and 3) and south (Phases 2 and 3a), were considered separate landfills and could have been permitted as such. The filling of the valley feature provided structural separation whilst allowing for the restoration of the two landfill areas and quarry, at no point was the valley fill considered a landfill disposal cell or phase subject to the requirements of the Landfill Directive. In the letter of the 18 August 2003 the Operator proposes that the valley could be filled with quarry materials if required. This clearly indicates that the purpose of filling the valley was one of separation and to support the two adjacent landfill areas and facilitate restoration and that that valley fill was not a disposal activity.

Figure 2 Extract from Letter dated 18 July 2003 from SLR to the Environment Agency

Waste Disposal Operations

Waste disposal at Llanddulas has taken place in two distinctly separate areas (covered by separate licences). Phase 1 was engineered in the early 1980s and was not subject to CQA procedures. Phase 2 was operated in the 1990s and was subject to full CQA of a composite lining system. It is separated from Phase 1 by in-situ rock and rock-fill which has been placed over a fault, forming a substantial rock buttress up to 18 meters high and with a typical width in excess of 10 metres, separating the two distinct landfill areas . Phase 2 is full and has no usable void space remaining without the development of an adjacent extension area, (known as Phase 3A) which has the benefit of planning permission, but does not have a waste management licence.

Figure 3 Extract from Letter dated 18 August 2003 from SLR to the Environment Agency

Installation Boundary Issues

We met your legal colleagues Ralph Seymour and Kim Follenfant to discuss the issue of the installation boundaries for Phases 2/3A and Phases 1/3.

Ralph suggested that the deposit of inert waste in the "valley" landform between the two areas could lead to technical connection and we pointed out that, if necessary, this area could be filled with quarry waste (ie a non controlled waste) to avoid such connection taking place. Save for this aspect, we maintained our position that the two areas are fully separated and, if necessary, the Phase 2/3A area could be operated as a stationary technical unit.

However, as we have previously indicated, we confirmed that WRG would be perfectly prepared to see the whole site re-permitted with the issue of a single PPC Permit following determination of the applications that the Agency has accepted as duly made.

Ultimately one permit was issued that incorporated the north and south landfill areas and the valley. The fill of the valley is referenced in the PPC application documents which are cross referenced in Table S1.2 'Operating Techniques' of the extant permit. An extract of section 2.2.5 of the application document Environmental Setting and Installation Design (ESID) referenced 4D-197-126/ESID dated January 2003 is provided below. This describes the purpose of the valley fill as necessary to complete the restoration of site.

Figure 4 Extract from PPC Application ESID

2.2.5 Restoration and Aftercare

Due to the need to maintain physical separation of the putrescible wastes in Phases 3 and 3a, it will be necessary to complete the restoration landform illustrated in ESID5 using inert wastes to fill a "valley" feature that will be created between the capped containment areas in Phases 3 and 3a. The completion of the Phase 3 containment area is illustrated in Drawing 56836/WP/12 of the Working Plan for the Phase 3 area (WML CBC06). This shows a temporary 1V:3H batter to the north of the boundary between the two phases. A similar feature will be formed on the south side of the boundary and will be capped.

Inert waste will then be used to progressively raise the level in this area to reach the final post-settlement levels illustrated in Drawing ESID5.

As indicated in Drawing ESID5, the upper parts of the landfill area will be restored to pasture with relatively gentle slope angles in accordance with the approved restoration proposals for Phases 3 and 3a as set out in Drawing L.11.L/16 which is contained in the Working Plan for Phase 3. This drawing contains full details of agricultural aftercare which will take place for a period of 5 years following restoration in accordance with the site's planning consent.

The sensitivity of the disposing of wastes over the Llysfaen Fault was recognised prior to the PPC permit applications and resulted in the separation of the two landfill areas. This separation and requirement to only dispose of waste in the engineered areas of Phases 1, 2,3 and 3a was subsequently enforced through the PPC permit issued in 2004. Condition 1.6.1 of the 2004 PPC permit states that no disposal shall take place in any area of the permitted installation where waste deposits commence after the issue of this permit unless area is engineered and lined.

A permit variation application was submitted to the Environment Agency in August 2009 to allow the construction of an engineered cell for the disposal of non-hazardous wastes within the western half of the valley whilst continuing restoring the eastern valley with restoration soils. The application was refused by the Environment Agency in September 2009 because of the sensitivity of the location and requirement to protect groundwater. Nevertheless, the obligation to restore the valley with soils remained.

Permit Clarification

The current environmental permit is based on the full set of condition issued on 30 May 2008 which have been varied seven times since but never completely updated. The last variation was dated 7 July 2022. Consequently, the conditions reflect a combination of permitting approaches and as a result lack some clarity concerning the permitted activities, in particular Table S1.1 'activities' does not include full descriptions of the Waste Framework Directive (WFD) Annex I or II operations.

In more recent permits or permits that have been varied to include specific restoration activities NRW and the Environment Agency have included descriptions of the activity and allocated an appropriate code under in accordance with the WFD to distinguish between disposal and recovery activities.

The WFD (2008/98/EC), lists recovery operations in Annex II. Recycling /reclamation of other inorganic materials is listed as R5 and includes recovery of inorganic materials (e.g. sub-soils) as backfilling.

The following provide direct examples of how permits include R5 activities on other FCC sites.

Arpley Landfill in Warrington has within the permit R5 listed as detailed in Figure 5 below. The R5 activity being undertaken at Arpley is comparable to the activity being undertaken at Llanddulas Landfill.

Figure 5 Extract from Arpley Landfill Consolidated Permit issued 1 February 2022

Schedule 1 – Operations

Table S1.1 activities

Activity reference	WFD Annex I and II operations (where applicable)	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A1	D5 –Specially engineered landfill; R5 - the recycling or reclamation of inorganic material and R10 – Land treatment resulting in benefit to agriculture or ecology	Section 5.2 Part A(1) (a) , The disposal of waste in a landfill.	Landfill for non-hazardous waste and landfill restoration	Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in conditions 2.7, as an integral part of landfilling.
A2	D8 – Biological treatment of waste	Section 5.4, Part A(1)(a)(i), Biological treatment of non-hazardous waste	Treatment of leachate in a facility with a capacity of >50 tonnes/ day	Leachate arising from the landfill.

The permitted R5 activity involves the restoration of the former plant area southeast of Boundary Cell 5 by the import of restoration soil to achieve the planning consent restoration scheme and allow the installation of the final surface water scheme. The area of restoration is approximately 1.4 hectares with fill depths ranging from very little to ~5m across the area.

Welbeck Landfill near Wakefield has R5 listed within the permit as detailed in Figure 6 below.

Figure 6 Extract from Welbeck Landfill Consolidated Permit issued 8 November 2019

Table S1.1 activities

Activity reference	WFD Annex I and II operations (where applicable)	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A7	N/A	-	Discharge of leachate to foul sewer	Leachate arising from the landfill.
Waste operations				
A8	R13: Storage of wastes pending any of the operations numbered R5 and R10 R5: Recycling or reclamation of other inorganic materials R10: Land treatment resulting in benefit to agriculture or ecological improvement	-	Deposit for Recovery	The use and associated secure storage of a maximum of 560,000m^3 of wastes listed in table S2.3 and S2.4 for the purposes of recovery. As detailed in the approved waste recovery plan dated June 2018 as detailed in table S1.2. In any event the total quantity of waste used shall not exceed the amount needed to complete the recovery operation to the final levels in the approved waste recovery plan dated June 2018 as detailed in table S1.2. Only the waste types specified in table 2.3 and S2.4 that are specified in the approved waste recovery plan shall be accepted. Such wastes shall only be used as specified in the approved waste recovery plan. No waste shall be deposited into a water body or sub-water table. Waste types coded 17 05 04 and 20 02 02 that are top soils or peat and waste coded 02 04 01 that is soil from cleaning and washing beet shall only be used for R10 activities and limited to use in the top 50cm of the recovery activity and shall only be used to provide a growing medium. Storage of waste prior to use in the recovery activity shall be limited to 12 months.

The R5 activity at Welbeck allows for the infilling of the final phases of the landfill in order to achieve the consented restoration and provide a stable and free draining profile. The area of restoration covers some 21 hectares and allows for the recovery of some 560,000 m^3 of restoration soils at varying depths up to ~7m.

Chirk Landfill is an example in Wales of a consolidated permit dated 5 December 2019 that includes R5 as detailed in Figure 7 below.

Figure 7 Extract from Chirk Landfill Consolidated Permit issued 5 December 2019

Schedule 1 - Operations

Table S1.1Specified Activities

Activity under Schedule 1 of the EP Regulations/ Associated Activity	Description of specified activity and WFD Annex I and II operations	Limits of specified activity
Section 5.2 Part A(1)(a) The disposal of waste in a landfill.	**D5:** Landfill for non-hazardous waste	Receipt, handling, storage and disposal of non-hazardous wastes, consisting of the types and quantities specified in condition 2.6 as an integral part of landfilling.
Deposit of waste for recovery	**R13:** Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) **R5:** Recycling/ reclamation of other inorganic compounds **R10:** Land treatment resulting in benefit to agriculture or ecological improvement	Receipt, handling, storage and recovery of non-hazardous wastes, consisting of the types and quantities specified in condition 2.6 . This waste operation shall consist of the permanent deposit of waste on or in land for the purpose of recovery only. In any event the total quantity of waste used shall not exceed the amount needed to complete the recovery operation to the final levels in the approved waste recovery plan. The total quantity of waste deposited for recovery shall not exceed 206,287m^3. Topsoil and peat shall only be used for the the R10 activity in the final 0.5m thick layer to achieve the restoration profile required.

Proposal

3C Waste Limited would like to vary the extant permit to clearly reference the existing restoration/engineering activities within the Llysfaen Valley feature. Consequently, it is proposed that a line is inserted within Table S1.1 detailing the activity as recovery with specific refence to the relevant Annex II and also clearly limiting the wastes to those currently allowed i.e. only suitable 17 05 04.

Request
We ask that NRW consider the proposal and advise if they agree that current work associated with the Valley Phases constitutes recovery and if so would NRW accept an administrative variation application.

We believe that the valley restoration activity has always been considered a recovery activity by NRW and its predecessor the Environment Agency, for a number of reasons including:

1. The Operator is obliged to undertake the valley restoration:
    a. to meet the approved planning scheme (NRW guidance[2] *"for example, you could be a quarry operator who is required by planning conditions of an existing planning permission to restore it according to an approved plan".*)
    b. prevent the valley flooding, and prevent consequential impact of flood water entering the deposited waste; and
    c. physically support the capping and placement of protective cover soils on the flanks of waste in Phases 1, 2, 3 and 3a.

2. The Operator has demonstrated in the letter of 18 August 2003 that the waste currently being used could be substituted for non-waste (quarry materials) (NRW guidance[3] *"depositing waste for recovery is when you use waste material instead of non-waste material for: construction, reclamation, restoration or improvement of land."*).

We believe that an administrative variation could be an appropriate mechanism in this instance because it clarifies an existing activity and provides clearer definitions that allow for better regulation.

If you have any queries or need any further information, then please do not hesitate to get in touch.

Yours sincerely
For ByrneLooby,

John Baxter
Technical Director

[2] https://naturalresources.wales/permits-and-permissions/waste-permitting/depositing-waste-for-recovery/prepare-a-waste-recovery-plan/?lang=en
[3] https://naturalresources.wales/permits-and-permissions/waste-permitting/depositing-waste-for-recovery/permission-you-need-to-deposit-waste-for-recovery/?lang=en