

File With _____

SECTION 131 FORM

Appeal NO: PL 16.207212Defer Re O/H ☐

TO:SEO

Having considered the contents of the submission ~~and~~ received 07/10/04 fromBrid McGarry I recommend that section 131 of the Planning and Development Act, 2000☒ not be invoked at this stage for the following reason(s): No new issues.E.O.: Kieron SomersDate: 08/10/04

To EO: _____

Section 131 not to be invoked at this stage. ☒~~Section 131 to be invoked~~ allow 2/4 weeks for reply ☐S.E.O.: M. DaleDate: 01/10/04

S.A.O.: _____

Date: _____

M _____

Please prepare BP _____ - Section 131 notice enclosing a copy of the attached submission

to: _____

Allow 2/4 weeks - BP _____

EO: _____

Date: _____

AA: _____

Date: _____

CORRESPONDENCE FORM

Appeal No: PL 16 207212

M r Fagan

Please treat correspondence received on 07/10/04 as follows:

1. Update database with new agent for Applicant/Appellant _____

2. Acknowledge with BP 23

3. Keep copy of Board's Letter ☐

Response to section 131

1. RETURN TO SENDER with BP _____

2 Keep Envelope: ☐

3. Keep Copy of Board's letter ☐

Amendments/Comments

4. Attach to file

(a) R/S ☐

(d) Screening ☐

(b) Mapping ☐

(e) Inspectorate ☐

(c) Processing ☐

RETURN TO EO ☒

Plans Date Stamped ☐

Date Stamped Filled in ☐

EO: Kieron Somers

AA: James Fagan

Date: 08/10/04

Date: 8/10/4

An Bord Pleanála
64 Marlborough Street
Dublin 1

Gortacragher,
Rosspoint
Ballina
Co. Mayo

06/10/2004

Reference : Submission in relation to information dated 31st August & 15th September 2004
re P03/3343 (Ref No. PL 16.207212).

RISK ASSESSMENT

Introduction :

We refer to the extreme risks associated with the proposal to route a large section of the unprecedented highly pressurised upstream pipeline, associated unibilical (longest on record in the world), and discharge pipeline through our private lands. This pipeline has 3 x 90° turns along this section of the route and we can only contemplate the unprecedented extreme risk and associated detrimental impacts which will occur in the event of an explosion. We have outlined the real risks associated with this proposal in our main appeal (26.05.04) and observation (08.07.04) to An Bord Pleanála and it is imperative that those risks are assessed and taken into account per same because innocent people's lives including our own depend on that assessment.

There is no mention of the matter of the change of use of this property i.e. from agricultural to commercial use. Enterprise Energy Ireland (now Shell E&P Ltd) through their firm of solicitors Ronan, Daly and Jermyn have issued us with documentation in relation to compulsory acquisition without any authority (2001) and we question the legality of these documents. The compensatory terms are completely inadequate given the nature of this development – we are being offered 1300 Euro per acre! This exploitation of landowners is a great injustice to the philosophy of Michael Davitt who stated “ The land of Ireland for the people of Ireland ”. Is the land so hard won down through past generations to be sacrificed so readily for corporate and political gain. The extended communities in question have toiled with hardship and difficulties for centuries and as a result have carved out livelihoods for themselves and future generations due to the persistent hard work and perseverance. Is all of this history to be destroyed? What is morally wrong cannot be politically right. We are expected to exchange our private property for a paltry sum, and sacrifice our health and safety into the bargain. We will not be allowed to build houses along this route which represents a huge loss re potential sites, or develop our lands in a sustainable fashion. Our reclaimed fields have taken years to condition and improve. As we have adhered consistently to the REPS (Rural environmental protection scheme) regulations it is appalling that our lives are to be put at extreme risk at the drop of a hat to suit Shell who in turn bend the rules for their own gains facilitated in every manner possible by the state irrespective of the true reality which this unprecedented concept poses.

How can the above be justified if the local community and the unique pristine environment which is associated with this beautiful area surrounded by SAC's and SPA's is to be openly sacrificed on a plate to Shell who have a devastating health and safety, and environmental record globally. At this stage and having gone through the planning process for the past 4 years it is highly apparent that Shell & Co. have not mended their ways and are still intent on doing things on the cheap to the detriment of peoples health and safety and the environment at large. That we are expected to take this devastating project on board is a damning indictment of the political system which exists in this country. Shell maintain that they have learned from past MISTAKES with respect to the Ogoni people in Nigeria who suffered devastating consequences at their hands. At the moment in Nigeria rebels are demanding autonomy for the Ijaw people from exploitation. If this project is allowed to proceed as planned we will find ourselves placed in the same situation surrounded by utter devastation as Shell will be allowed to proceed and desecrate this pristine and unspoilt area with unassessed risks to the population. If this is allowed to happen another forum will be arrived at, thus it is once again imperative that An Bord Pleanála take on board all the unprecedented risks including those outlined in this submission which are associated with this project.

Shell's Risk Assessment excluded the upstream pipeline travelling 9km inland. This route has never been assessed thus, the hazard of " unexpected ground conditions " remains an unknown . Part of this upstream pipeline comes under the present planning application. The protective agencies appear to have adopted the attitude that pipelines are " exempted development " as is A Bord Gais pipeline. This upstream pipeline (345 Bar pressure) with all its associated installations, cannot in any manner, shape, or form be compared with a Bord Gais transmission pipeline i.e. under 80 Bar pressure of cleaned odourised gas with a separation distance of approximately 70m from dwelling houses. Please refer to the NSAI code of practice for gas transmission pipelines and pipeline installations (I.S. 328: 2000) document. With respect to page 9 under 1 Scope it states " The upper pressure limit is not defined but in current general practice this ranges up to 100 Bar " These requirements are applicable to conditions normally encountered in the transmission of gas. Additional design considerations may be necessary where **unusual conditions are encountered e.g. unstable ground.....** " These requirements apply to onshore pipelines including water crossings. They are not intended for pipelines the greater part of whose length is offshore" (We are dealing with an offshore pipeline on land with respect to the upstream pipeline)

There are no international standards for an upstream pipeline to be built in deep peat soil. We refer to the DNV report where it is stated that there was no assessment of **ground stability** and third party interference.

The risk assessment with respect to the possible introduction of " flares " along the upstream route to reduce the wellhead pressure has not been addressed.

The risk assessment with respect to the onshore terminal termination units (x 2) have not been addressed.

What is unprecedented is that Shell are trying to bring an 'offshore pipeline' 9 km inland.

- It will have an astounding 345 bar maximum pressure capability
- It will come ashore at Dooncarton where there were over 40 separate landslides
- It will be 'raw' gas subject to potentially massive slug build-ups over its 70 km length
- It will have several high-risk 90 degree angles over its 9 km on shore length
- It will be unodorised, so leaks cannot be detected
- It will pass through notoriously unstable peat over much of this length
- It will not be possible for it to maintain the mandatory 70m separation from houses and stay safely clear of the loose clay cliff face along the shore

In the same trench there will be

An electric power supply!!

An hydraulic fluid supply of 210 bar

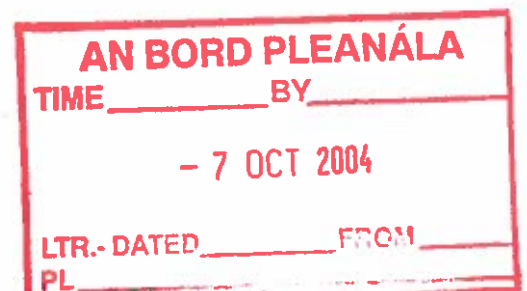
High pressure hydraulic fluid supply of 610 bar

Methanol injection supply (for start-up and shutdown)

Methanol injection supply for continuous injection

This amounts to some cocktail (the Domino effect) through unstable ground.

This is the reality of the risk that Shell wants to impose on a rural community and it amounts to nothing short of contempt for the community. This is discrimination: it is a violation of the right of a secluded community to continue to live and work in their environment previously free from such risk.



The recent Channel 4 News programme (Monday Sept. 2) highlighted the wretched conditions of the people of the oil-rich Niger Delta in Niger whose environment has been destroyed largely by Shell activities. Shell makes an annual profit of over \$12bn yet they admitted recently in "The Economist" that they probably contributed to poverty in Nigeria. This is the one of the biggest multi-national in the world and they have been given the Corrib Gas reserves for NOTHING by our politicians. Despite this, like the Niger Delta people, local people are **expected to accept all the risk** to life and the environment while they refuse to develop Corrib Gas in a safe manner. Off-shore cleaning of the gas is the only way to ensure safety for onshore residents.

Not only residents are carrying Shell's risks but a whole range of government agencies are being forced to do so also, which inevitably means at the taxpayers' expense. 'Project splitting' is one of the most insidious means by which corporate bodies seek to spread - and thus **avoid - risk**. The EU has proceedings in train to bring such practice before the European Court (see EU Reasoned Opinion) but an outcome will be too late for the Corrib development. This project requires 9 separate licences, each of which has contributed to splitting the project and **spreading the risks as widely as possible**.

Risk carried by Bord na Mona

Outsourced by Shell to Bord na Mona is the risk of unstable peat slurry which will be deposited on their lands at Srahmore and which will impact on the Munhin River and Tullaghan Bay SAC.

On a Prime Time programme (16th September 04) Andy Pyle stated " Well as I say we have now developed the CONCEPT along with Bord na Mona of removing the peat from the site altogether and transporting it to the cutover bog at Srahmore"

Risk carried by Coillte

Coillte still owns the site (the sale of the land is subject to planning permission which is still under appeal) at Ballinaboy and consequently carries the risk associated with the developments on site which contaminated the Ballinaboy river and Carrowmore Lake, as well as the contaminated carcasses buried on these lands.

With respect to the above and the contamination of Carrowmore lake & Sruwaddacon Bay with Phosphates please refer to Appendix A enclosed.

Risk carried by Bord Gais

The gas pipeline from Ballinaboy to Craughwell will be constructed by Bord Gais (i.e. the taxpayer). It will traverse through vast areas of peat which ARUP admits is the most difficult terrain through which to construct a pipeline. [There was an Oral Hearing conducted for this pipeline. However, a request for an Oral Hearing for the very controversial 'upstream pipeline' was rejected by the then Minister, Frank Fahey].

Risk carried by the Gardai

Responsibility for Shell's potentially hazardous traffic management plan is laid four-square on the shoulders of the Gardai and Mayo Co. Council.

Failure of Mayo Co. Co.

The failure of consultants

Shell has placed great confidence in various consultants employed by them to further this development. However, in the ABP's Inspector's report Mr. David Ball states on p.43 "It appeared clear that the various peer or expert groups had not assessed the drainage designs and site preparation method statements in detail." Also, in p.47 in relation to a bog slide on site Mr. David Ball states "I noted this change in gradient followed by a flattening of gradients to the south of the R314 road and diversion of drainage alignments. I suggested that this might be evidence of a historic peat slide. This change in topography and peat thickness in this area and described below was not noted by AGECC when assessing evidence of past peat stability in their reports and during questioning in the oral hearing."

No doubt An Bord Pleanála was impressed with the arguments put forward by consultants in relation to the application for the windmill development at Derrybrien. The consequences of that development have been disastrous and the three companies involved in this development are now being sued. Sensitive areas are just that – sensitive - and not suitable for industrial development.

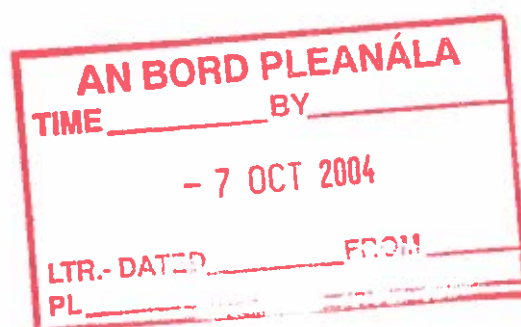
Please find enclosed the traffic management report on the TMP response to An Bord Pleanála. Please find enclosed Appendix A and B.

We hope that An Bord Pleanála will take our genuine concerns on board.

Yours faithfully,

Brid Mc Garry.

Brid Mc Garry
for and on behalf of Brid Mc Garry and Teresa Mc Garry.



RESPONSE TO ABP re TMP

The Response submitted by Tom Phillips & Associates on behalf of Shell E & P (Ireland) Ltd. is characterised by evasions, obfuscations and surreptitious amendments, which must be abundantly obvious to ABP. We consequently enumerate those, which we, as lay persons note and call upon ABP to reject these affronts to the statutory authority. Bearing in mind that ABP was established specifically to adjudicate last resort appeals as formerly adjudicated by the designated government minister. Our trust as that of all citizens, hinges upon credible respect being shown by all parties for the authority of the state.

With this in mind we herewith detail the numerous incidents of evasion, obfuscation and surreptitious amendments as referred to above which characterize the Response:

Paragraph 1.2 repeats the by now notorious claim that they have difficulty in interpreting the question asked and making this pretence a basis for answering in a limited, partial and entirely self-serving manner. They used precisely the same tactic in their Response to ABP's Further Information request re the previous, unsuccessful application. Furthermore, they seek to obtain special concession as regards access to ABP by pleading such difficulty with interpreting ABP's intentions. Effectively, they are asking for an Oral Hearing but with other parties excluded. We, the appellants requested an Oral Hearing specifying the advantages for all in having such matters teased out openly but ABP saw fit to deny such facility. Such refusal has not helped our confidence in the process of adjudication. It would, therefore, be a positive outcome, we submit, if this request by the Applicant for direct consultation with ABP were granted but broadened out into a full and proper Oral Hearing.

In paragraph 2.1. the "statutory variation" referred to in the first sentence should have been anticipated and notified in the EIS/Traffic Management Plan. Such anticipation is after all the very essence of planning. Failure to include it is a clear example of the "surreptitious amendments" referred to above. Not only were these amendments not detailed in the EIS/Traffic Management Plan but they were not notified to the public at the Open Day: nor in the course of the informative/consultation process with the public nor with the Gardai all of which preceded the newspaper advertisements by several months. Were it an isolated incident it would be unacceptable but as part of a clear pattern of tactical manipulation of information it is reprehensible.

Another instance of this is that much emphasis is placed on the Applicant's close consultation and co-operation with the Mayo Co. Council, as though such bestows acceptability and authenticity on the outcome, though the fact is that Mayo Co. Co. have facilitated the Applicant throughout all three applications to date to an extent which caused amazement at the four weeks of Oral Hearings, as well documented in the ABP Inspector's 377-page Report and in greater detail still in the c. 30 volumes of transcripts.

In paragraph 2.1.2 obfuscation is so frequently evident that it may be said to, in the drawings, permeate the overall attitude reflected. There is no attempt to differentiate between 'heavy flows' and 'light flows' of traffic despite instances of extremes of both occurring at several junctions. Is it not credible that an experienced planner would fail

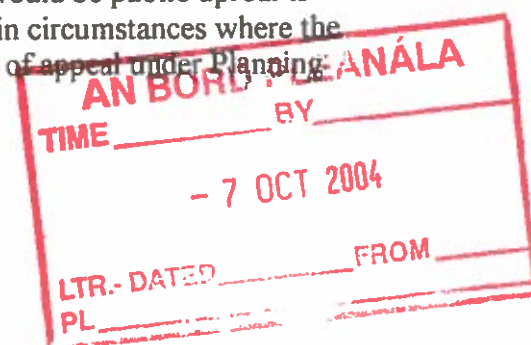
to notice the incongruity of such defective representation when lay people find it so glaringly obvious. Not only are such extremes not differentiated but by-passing heavy flows past such junctions are not represented at all. If obfuscation is not the ulterior intent what can be? Certainly nothing less can explain why at several junctions traffic flows are shown where none exist due to the one-way loop. These instances are detailed drawing-by-drawing and diagram-by-diagram below.

Possibly the most insidious device employed in these drawings, from a layman's point-of-view is the clear indication of a scale on all but one of the drawings while a surreptitiously innocuous note negates such scale by authenticating only the few, almost imperceptible dimensions incorporated into the drawings. In a contentious matter such as this where drawings are circulated for public parties such highly misleading representations are quite simply unmitigated distortions. ***The drawings simply cannot be believed as regards scale.***

The concluding paragraph of this section invokes the approval of Mayo Co. Co. both for the acceptability of the specifications shown and for the adequacy of routes width so as to preclude the need for land acquisition for widening etc. The credibility of this must be seen in the context of MCC having approved all these traffic arrangements question when granting permission. That they were delinquent in doing so is abundantly substantiated by their failure to question the potentially tragic proposal of running flows of 2.5m wide HGV's in opposite directions on a 5.5m wide bog-based route at up to 40mph within an imperatively rigid schedule. Such failure should preclude the delinquent party from any say in authenticating proposals intended to rectify this delinquency.

Before making further comment on the remaining sub-sections of replies to Question 2, it must be noted that our perception of this so-called "**living document**" is that its root intent is to evade the planning process in regard to traffic management entirely. A euphemism cannot disguise the fact that this so-called concept masquerading as a 'living document' is in fact the antithesis of planning: it is tantamount to a licence to make-it-up-as-you-go or, worse still, to hide the fact that the plan presented is not the plan intended. Within weeks of start-up, if not days, the impossibilities already well highlighted by appellants will be given dramatic urgency by accidents, incidents or confusion of such magnitude as to make fundamental changes unquestionably necessary. No public traffic will thereafter be permitted to travel on the R313 between Srahmore and the Muinhin Bridge turn-off.

In short, all non-Shell traffic will be diverted southwards of the R313 on the L1206 either to the very extended route via Geesala to rejoin R313 at Glencastle, or via the less circuitous but totally inadequate boreen from the L1206 across the bog rejoining the R313 2-3km beyond the Muinhin Bridge turn-off for Barnatra and the R314. The reason that such proposal is not being put forward at the outset is because there is no intention by MCC of up-grading the 'boreen' across the bog to even minimally adequate standards for such flows of traffic. Additionally, there would be public uproar if diversion of such huge disruptions were to be proposed in circumstances where the public would not be able to exercise their statutory right of appeal under Planning legislation.



Other significant points:

p.7

"it is on objective that drivers required to pause for construction traffic to cross at the R313/L12044 junction will not later be asked to pause a second time at the R313/L1204 junction". Since 1 km separates them this objective is not likely to be achieved except when regular by-pass traffic is very light.

p.8

What *"encouragement"* is to be offered to road users to use the alternative L5284 which is inferior and very much longer? If they mean enforcement, then that is what should be stated.

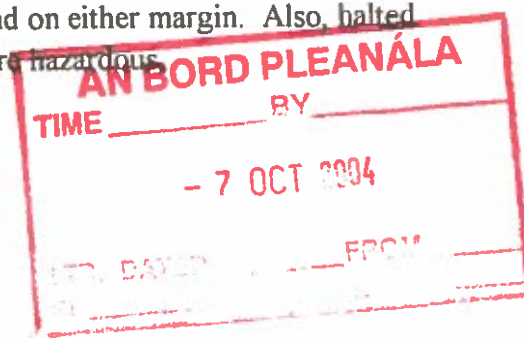
How many Traffic Directors at R314/L1204 junction? The Response refers to Directors but does not specify a number. If only one Director is allocated then management of traffic from the L5244 could not be possibly be safely managed by him in view of impaired line of sight and relative complexity of circumstances i.e. two separate junctions 50-100m apart on double bend (S-bend) of R314.

p.9

2.1.4. *"Field trials by BnM carried out in Feb. 2004....show that the proposed windrowing period is sufficient to permit free water to drain..."* This trial was minimal and the Response ignores the fact that peat has very poor draining characteristics requiring evapo-transpiration for any significant drying (as in BnM processing of milled peat.) In truth, the peat transported will, for the most part have the consistency of sludge and the leak effect from trucks will be extensive, persistent and dangerous. On a 5.5m wide road, barely capable of permitting trucks to pass in opposite direction, a continuously greasy surface will make the 1600+ per hour, individual encounters, of 40 mph, 2.5m wide HGV's potentially disaster prone. The suggestion that working-hours sweeping done between 13.20-14.00 Hrs. could appreciably alleviate this danger is characteristic of the cavalier attitude permeating the EIS and the Response: that is, give us the go-ahead and we will make it work by hook-or-by-crook, with little or no regard for the needs and safety of the public.

p.10

"... designated lay-bys are not proposed as such..." [The full truth is that there is no provision for parking, mishap, emergency clearance etc.] but the L1204 road will be widened to a minimum width of 5.5m over its whole length..." The implication that 5.5m is somehow adequate to permit passage of 2.5m wide opposite flows, and accommodate halted traffic as well, is entirely fanciful. The opposite flows will have minimal clearance, less than 0.2m (8") at road centre and on either margin. Also, halted traffic makes passing via on-coming lane decidedly more hazardous.



The vague declaration that *“where the width between fences permits, the road will be widened to more than 5.5m”* reflects the same ‘trust me’ attitude as does the over-riding concept of the TMP as a “living document”: that is, forget planning, give us permission to do our own thing.

2.1.6. *“...passing on the restricted width section approaching the R3313 would not arise.”* Breakdowns are just as likely on this extremely narrow ‘boreen’ as elsewhere, especially in regard to side-slip or topple incidents on such an inevitably greasy, narrow surface. Planning requires anticipation of exceptional circumstances and this exclusive focus on the ‘normal’ is an evasion of reality.

p.11.

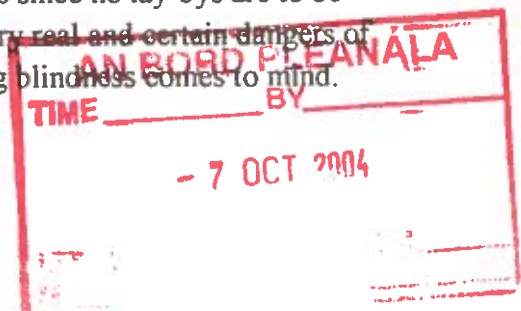
2.1.7 *“Please state how it is proposed that large vehicles would pass on this stretch of road.”*

While this question specifically refers to the one-way section of the L1204 it has relevance for the whole length of the haul route and nowhere has it been addressed: 2.5m wide HGV’s giving rise to 1.600+ individual encounters per hour on a 5.5m wide road allowing for only 0.2m clearance at centre and both margins at speeds up to 40 mph screams out for reply, especially where continuously wetted, greasy road surfaces are inevitable. This is the most glaringly pressing question and failure to address it (or, worse still, consistently evasion of it) reflects the applicants’ pervasive dismissiveness of the public’s safety and protection.

2.1.8 *“The school bus service...for secondary school children is a full size bus which currently traverses the L1204 with quarry HGV traffic, with adequate passing clearance even before widening.”* This is grasping at straws and refusing to address the facts in that quarry trucks are comparatively rare on that road – and 2.5m wide HGV-type traffic including buses currently pass only with difficulty and some danger. To suggest that there is no problem is very misleading and reckless. Where encounters between bus and hgv’s happen at the rate of over 40 per hour (c.15 per bus trip) with clearance of only 0.2m centre and at each margin there are at least 15 instances of real danger for the school children twice each school day.

p.12

“Drivers of haulage vehicles will be under standing-instruction to give way to such vehicles (school bus) following on at the nearest safe pull-in point...” The clear implication here is that school buses are expected to be travelling faster than the 40 mph limit for haulage HGV’s on this inevitably greasy 5.5m wide route. Also, the reference to “the nearest safe pull-in point” is quite incongruous since no lay-bys are to be provided. No reference whatsoever is made to the very real and certain dangers of school buses passing on-coming HGV’s. Self serving blindness comes to mind.



2.1.10 The before/after explanation appears contradictory: 'before' relates to two-way HGV traffic and widening must have envisaged 5.5m width which in turn made land acquisition essential. Consequently, the conflict between the plan drawing and the section seem conveniently remarkable.

2.1.2. Drawing 1019

Note # 1 on this drawings is a surreptitious qualification and it contradicts the stated scale. What sort of nonsense is this? It appears also on most other drawings.

Diag.# 1 R313/L12044 obfuscation: no traffic will come from West into bye-road but big flow of traffic will pass this bye-road from West and this is not shown.

Diag.# 2 No traffic will come from L12044 turning right towards R314 but major flow will pass this junction towards R314 against flow to Ballinaboy from L12044.

Diag.# 3 Comparatively very little traffic will turn into or out from refinery site from/to east but there will be regular flow past this turn – off point. The former is shown the latter not! Also, trucks into and out of refinery will occur at a rate of one HGV turning every 45 seconds i.e. 90 per hour yet there is no indication of bye-passing traffic.

Diag.# 4 The L12044 'boreen' is here portrayed as comfortably accommodating proposed traffic with generous space at c.90 degree bend. The truth is that even a private car has impaired passage here.

Diag # 5 obfuscation of realities at this major junction concern failure to distinguish major flows from minor and omission of regular by-passing traffic past this junction on main R313 Belmullet/Castlebar/Ballina. Particularly, traffic from L1204 turning west onto R313 would be comparatively very light, yet it dominates drawing. The same applies to traffic from east on R3313 into Deposition Site.

Diag # 6 obfuscation again in that west traffic to/from along R314 would be comparatively very light yet it is shown without differentiation while traffic by-passing this junction is not shown at all despite HGV's negotiating this turn-off to/from east at rate of 2 every 45 seconds i.e. c.90 per hour.

Drawing 1020 – Visibility

Diag # 1 very narrow junction, especially in poor weather/light conditions.

Diag # 2 No attempt to show different elections between L12044 and L1204 which is key for emerging traffic. Also, line of sight only available over last 20m before emerging.

AN BORD PLEANÁ

TIME _____ BY _____

– 7 OCT 2004

LTR.- DATED _____ FRC _____

PI. _____

Diag # 3 Narrowness of road over longer stretch not taken into account for visibility in respect to by-passing traffic despite c.90 HGV turnings (i.e. one every 45 seconds) at this relatively very narrow junction point.

Drawing 1021 – Signage and Traffic Directors:
NOT TO SCALE

Diag # 1 traffic waiting to turn off R313 will occupy the centre of this main road blocking vision for by-passing traffic from both directions.

Diag # 2 “No Entry” sign at junction contradicts traffic flow as shown in Dr. 1019 etc.

Diag # 3 road is pushed outwards from refinery entrance to accommodate slip road for traffic entering from west direction. This impairs view for by-passing traffic especially when paused traffic from east is taken into account

Diag # 4 proportion in this diagram are not only not to scale but very misleading especially as regards width of private and local access openings and corner width overall.

Diag # 5 four ‘post’ signs and two road markings indicate no entry from R313 into L1204 yet Dr. 1019 shows entry for traffic from both west and east R313. Also, distance between stop lines for west and east traffic on R313 is c. 50m. which must make co-ordination of stops and time taken for effective crossings to be made.

Diag. # 6 Traffic Director at this junction will have poor visibility re regular traffic from east on R314 especially in view of heavy flow of HGV traffic from that direction turning off onto L1204.

Drawing 1022

Diag # 1 obfuscation again as there is very little likelihood of ‘artic’ traffic from west turning onto L12044. Yet its insertion clouds the picture re width of turn needed for ‘artic’ traffic from east turning onto L12044

Diag # 2 again the ‘elbow’ bend on this ‘boreen’ here shown can hardly accommodate fixed-wheel traffic and is hardly entitled to use private access entrance, as depicted.

Diag # 3 ‘artic’ traffic from L12044 is shown as having not only to cross entirely into the on-coming traffic lane on the L1204 but to intrude into the margin on that side. How can the Traffic Director possibly regulate on-coming traffic from Ballinaboy in view of the pronounced bend on the L12044 at this junction.

Mayo County Council



Comhairle Chontae Mhaigh Eo

Update Report on the Landslides at Dooncarton, Glengah, Barnackville and Pollathornais, County Mayo

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Mayo County Council
Altamont Street
Westport
County Mayo

AN BORD PLEANÁLA
TIME _____ BY _____
- 7 OCT 2004
LTR. D. _____
PL _____
June 29th, 2004

TOBIN Consulting Engineers
GALWAY & CASTLEBAR
DUNDALK & LIMERICK

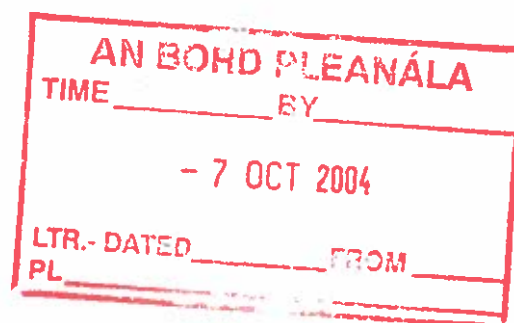


TOBIN
Patrick J. Tobin & Co. Ltd.

DOCUMENT AMENDMENT RECORD

| | |
|----------------|---|
| Client | Mayo County Council |
| Project | North Mayo Landslide |
| Title | Update Report on the Landslides at Dooncarton, Glengad, Barnachuille and Pollathomais, County Mayo |

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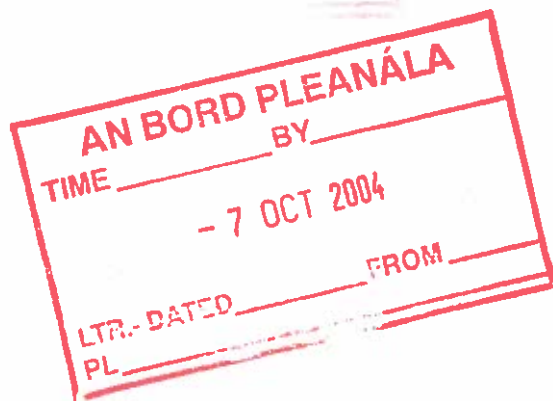
| | | | | | |
|---|----------------------------------|-------------------|----------------------|-------------------|--------------------------------------|
| Project No. | | 2033 | Document Ref: | | 2033 Landslide Report May '04.doc |
| Revision | Purpose / Description | Originated | Checked | Authorised | Date |
| 0 | Report issued to Client | PG | MFG | MFG | 21/05/04 |
| A | Updated Report issued | MFG | MFG | MFG | 10/06/04 |
| B | Revisions | MFG | MFG | MFG | 29/06/04 |
| TOBIN CONSULTING ENGINEERS, MARKET SQUARE, CASTLEBAR, COUNTY MAYO | | | | | |

**Report on the Landslides at Dooncarton, Glengad,
Barnachuille and Pollathomais, County Mayo**

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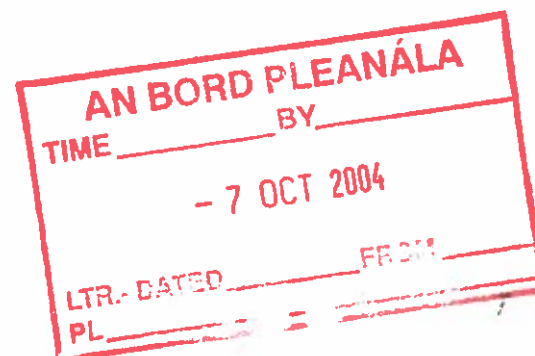


Updated Report on the Landslides at Dooncarton, Glengad, Barnachuille and Pollathomais, County Mayo, May 2004.

EXECUTIVE SUMMARY

This updating report on the original submission of October 29th 2003 examines the implications of the latest survey on Dooncarton Mountain and environs, in May 2004, and it assesses the behaviour of the loosened deposits on the slopes of the mountain over the first winter period since the events of September 2003.

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INTRODUCTION AND TERMS OF REFERENCE

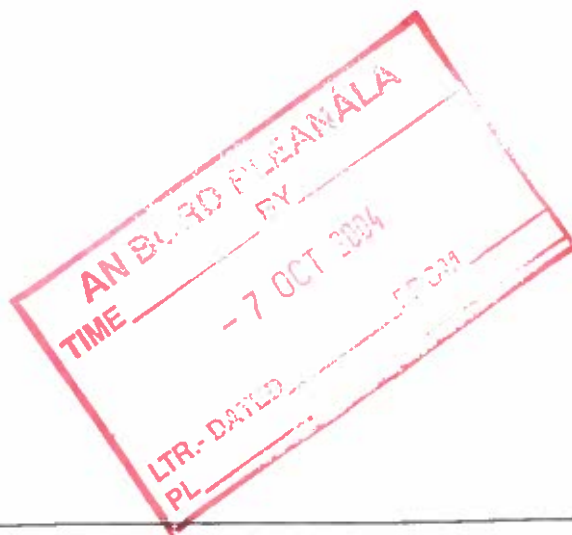
On the night of September 19th, 2003, intense localised rainfall caused multiple landslides on the slopes of Dooncarton and Barnachuille mountains. The combined effects of floodwater and landslides caused widespread damage to the public road infrastructure, to the old and new graveyards, and to private property.

TOBIN Consulting Engineers, in October 2003, submitted a report assessing the immediate condition of the slopes of the Dooncarton and Barnachuille mountains at Pollathomais, County Mayo, and advising the Council in their response to widespread landslides and floodwater damage.

That Report assessed the risk environment for the public infrastructure, including roads, culverts, bridges, and the graveyard and also residential properties in the immediate aftermath of the event, and it was clear that it would be necessary to keep that assessment under review, initially as the survey information flow progressed, but in the medium term as the loosened peat deposits weathered toward a new equilibrium during the first winter.

It is now timely to review the position as it stood at the time of our report of October 2003, in the light of the considerable remedial works carried out by Mayo County Council and the Office of Public Works in the interim period, and to

- review the risks of further landslides occurring, and the possible consequences of these
- determine the necessary protection and risk mitigation works as matters stand in May 2004
- review the effectiveness of the interim works carried out in the immediate aftermath of the events of September 2003 and review the recommendations on long term protection works and precautionary measures



INSPECTION OF THE LANDSLIDES AT DOONCARTON, GLENGAD AND BARNACUILLE

Inspection Team: Steven Verity, Executive Engineer, Mayo County Council,
Dan Duggan, Senior Geologist, TOBIN Consulting Engineers,
Peter Gannon, Senior Technician, TOBIN Consulting Engineers,

The Site was visited and surveyed on Thursday 20th May 2004.

Weather Conditions: Good visibility, Clear and sunny with light showers and blustery winds.

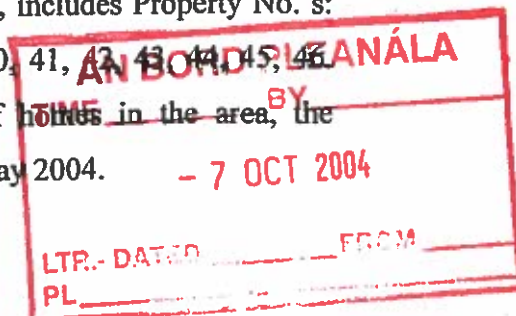
Ground Conditions: Very Dry as a result of two to three weeks of antecedent fine weather

AREA A:

This area, indicated on Drg No 2033 – 1007 of the original report, includes Property No.'s: 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46.

Having surveyed the position related to the various clusters of homes in the area, the following represents our updated assessment of the conditions in May 2004.

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Property No. 43 & 39:

Originally these properties were included in the High Risk Zone due to the discovery of tension cracks upgradient towards the end of our initial survey in September 2003. The recommended berm has since been reconstructed in this area, and due to the fact that the land slope is not as steep over these particular properties, and recognising that the tension cracks in this area have shown little activity over the intervening months, we would recommend that these properties be reduced in classification to Medium Risk.

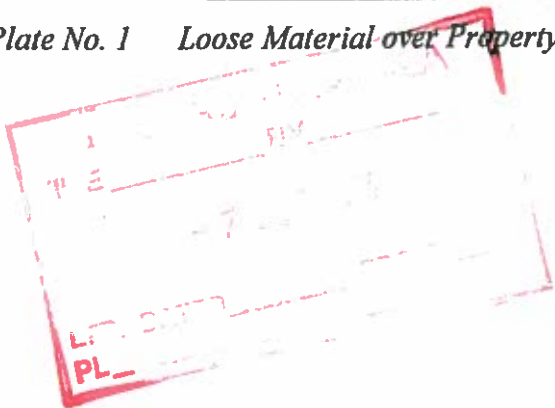
Property No. 38 & 37:

From our most recent inspection we have discovered that there is still a large area of peat that has the potential to cause damage to these properties. Also, there are loose boulders which

have emerged as weathering has taken place in the scarred surface, that now have the potential to move and cause damage. This is an area of the mountain, which has a very steep slope (approximately 1/1), with a short travel distance to these properties, as shown on the photographs below. These properties will continue to require the construction of the Kinetic Barrier Fence to the rear, so as to reduce the risk associated with the current state of the slopes. Once the fence is constructed, it will be possible to reclassify these properties from High Risk to Medium Risk. Substantial improvement works have been carried out by Mayo County Council and the Office of Public Works (OPW) to the existing drainage network in this area. The recent addition of the box culvert to the lower side of Property No. 37 and the upgrading and improvement works to the roadside drainage network along the upper Glengad Road (LT12025) will assist with future flood flow patterns in this area. The new drainage system constructed behind the reinforced berm, directing flows to existing drains and culverts will also assist, should there be another rainfall event of the same order of magnitude.



Plate No. 1 Loose Material over Property No. 38 & No.37



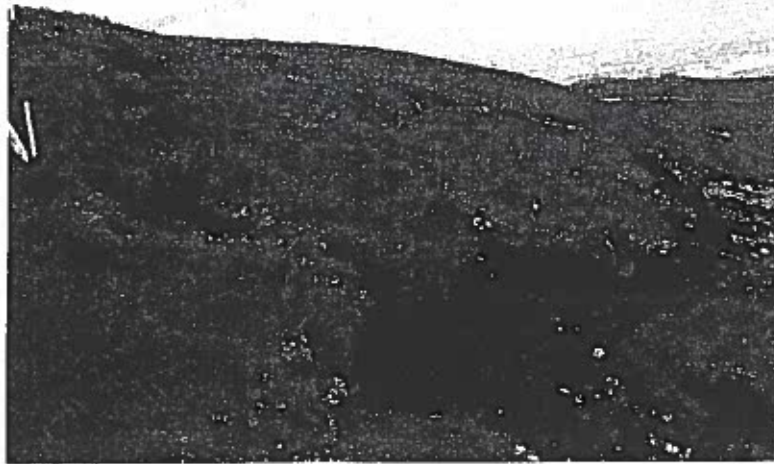
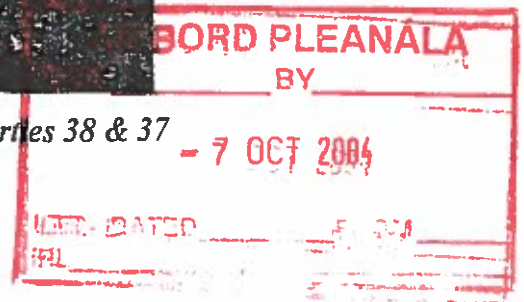


Plate No. 2 16.8m x 8.5m x 0.85m Detached Block over Property 38 & 37



Plate No. 3 Loose Rock in the surface Scar over Properties 38 & 37



Property No. 32 & 31:

To the rear of Property No. 32, the original berm has been reconstructed and reinforced. The area directly behind this property is higher than the surrounding lands, and with the addition of a second berm directly to the rear of Property No. 32, and the improvement works to the drainage network, we consider that even without the addition of the Kinetic Barrier Fence in this area, the works carried out to date will be sufficient to reduce the classification of this property from High Risk to Medium Risk at this time.

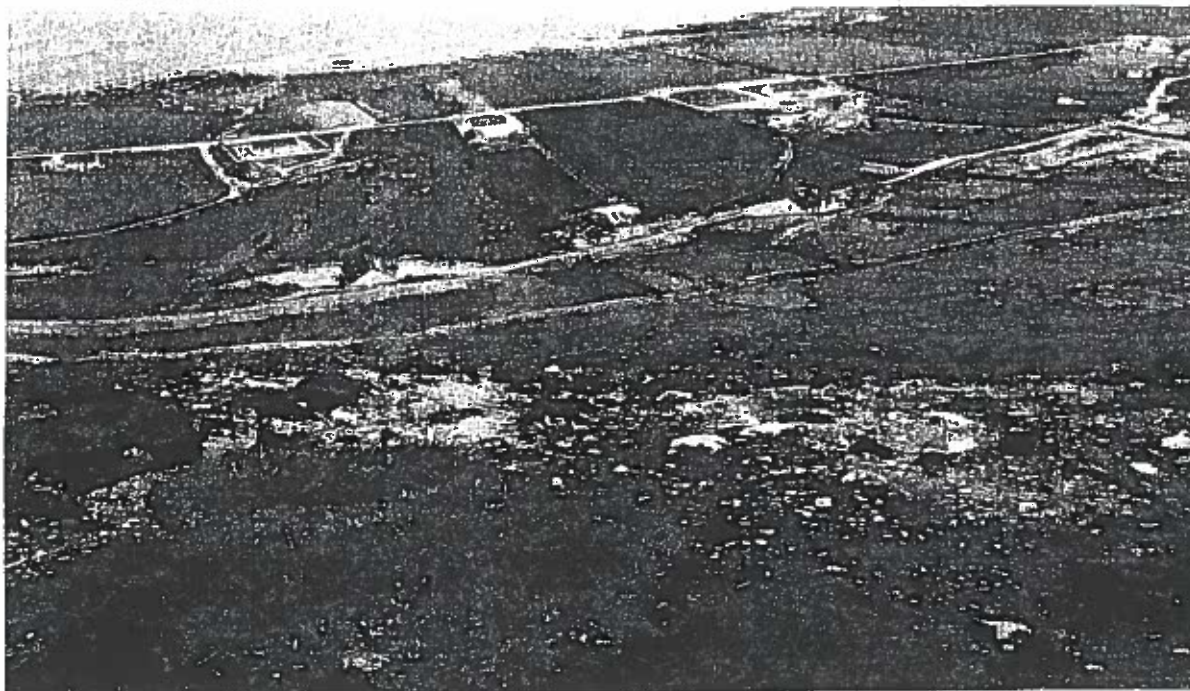


Plate No. 4 *New Berm to rear of Property No. 32 and Reinforced Berm over*

Property No. 31:

This property is located beside the main drainage channel from the catchment basin of Area A1. Mayo County Council are at this time reconstructing the culvert serving this subcatchment and have reinforced the sides of this drainage channel. Further works are to be carried out in this area in relation to the drainage issues, but with the quality of the reconstructed berm to the rear of this property, we are of the opinion that this property can be reduced in classification from High to Medium risk once all works are completed in this area.

Property No.'s: 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 35, 36, 40, 41, 42, 44, 45, 46

With the improvement works to the drainage network and the reconstruction of the protection berm along with upgraded roadside drainage, these properties are now at a much reduced risk of damage from a similar event.

AREA A1

This area continues to weather and the larger aggregations of peat are breaking down as we anticipated. The larger blocks are detaching and breaking down over the scar surface (see

AN BORD PLEAN
TIME _____ BY _____
- 7 OCT 2004
LIT. DATED _____ FROM _____

Plate No. 4 & 5). As the material from this area will eventually end up in the basin below, we feel that this area is generally behaving as we had previously expected and described in our report of October 2003.



Plate No. 5

Detached Blocks in Area A1 breaking down over scarred surface

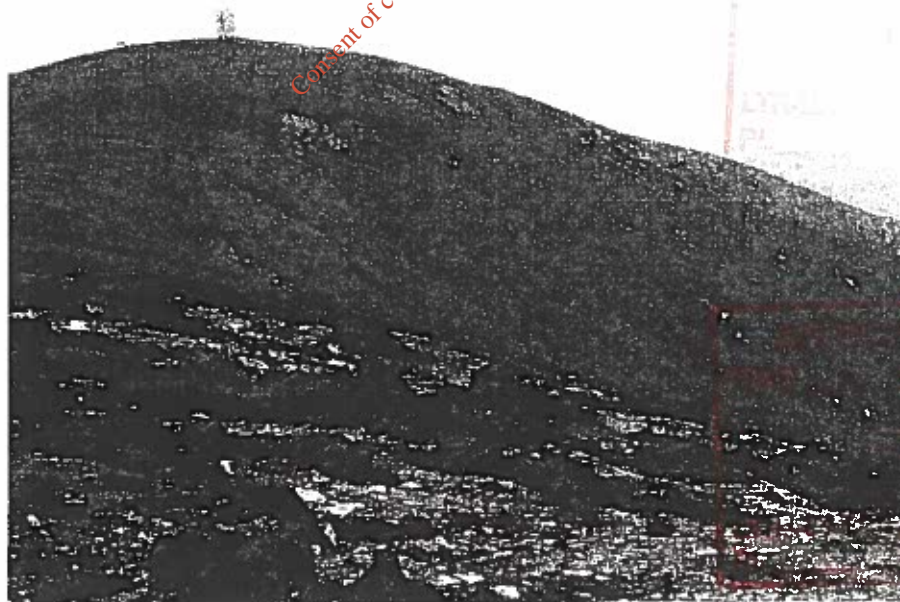


Plate No. 6: *Detached Blocks sliding towards Basin Area Below*

AREA E

Includes Property No.'s 7, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

This landslide area is the second most active zone of the whole area, with large blocks detaching and moving / sliding downslope up to distances of nearly 150m. While the majority of properties in this area are outside and away from any threat from this material, Property No. 12 still remains at risk. Some improvement works have been carried out to the old berm in this area and drainage network has been improved but further works will be required to bring this property from High to Medium risk. The addition of a new berm to deflect flow and materials away from property 12 will be required. The new berm will be the initial point of impact should any material overtop the intermediate ledge. This measure will reduce the risk associated with property No. 12 from high to medium.

For properties No.'s 13 to 21 inclusive, our report of October 2003 required that a new berm be constructed and also indicated that drainage improvements would be required. Mayo County Council and the OPW have since reinstated the existing berm to a satisfactory standard and have improved the drainage network in this area. These works have restored the drainage efficiency of this area and with the improved drainage network along the main road this will reduce risk levels to low level.

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Plate No. 7 Property No. 12 shown in relation to Berm at the top road in Barnacuille

AREA B

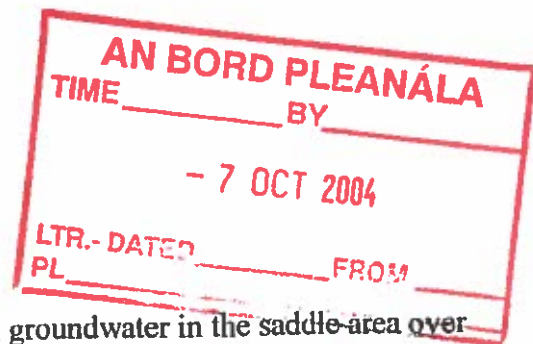
Includes Property No.'s 0, 1, 2, 3, 4, 5, 6, 8, 9, 10,

Property No. 0 – The Graveyard:

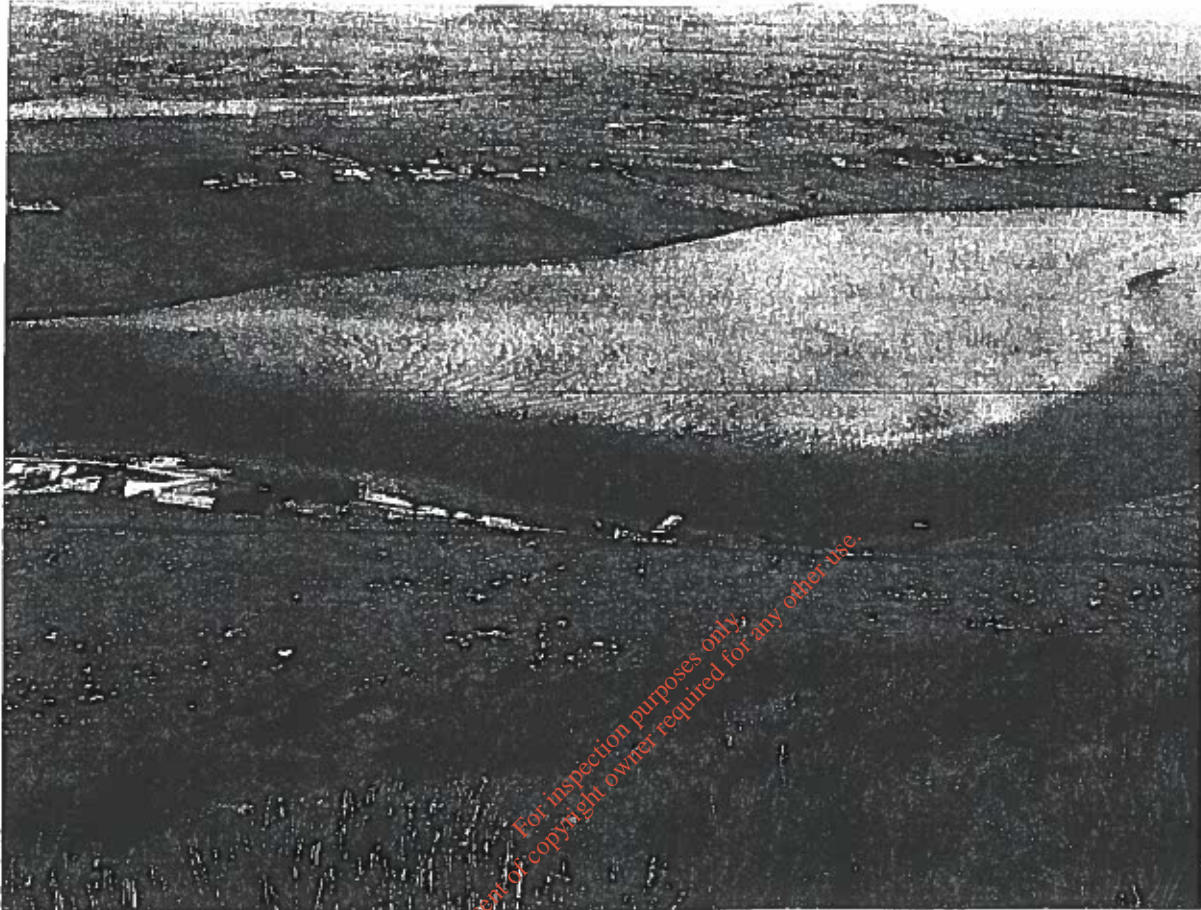
The area between S2 & S3 is very wet due to springs and groundwater in the saddle-area over these two landslide areas. This water has the effect of lubricating the disturbed material and is causing further detachment in this area. The short travel distance to the reconstructed berm and the steep downslope gradient along with the second steep slope below mean that the construction of the Kinetic Fence will continue to be required to protect the graveyard.

Property No. 2 & 3:

Mayo County Council and the OPW have carried out a lot of improvement works to the roadside drainage network and the existing drainage channels and gullies. The improved



berm to the rear of properties no. 1 & 2 plus the improved roadside drainage has reduced the risk to these properties.



*Plate No. 8 — Reinforced berm shown in relation to Property No. 3, Property No. 1
Not visible from Top Slope*

Property No. 5:

The same criteria exist for Property No. 5 as at landslide areas S2 & S3 except for the fact that there are no springs or groundwater lubricating this area where the disturbed material rests at S12 & S13. The reconstructed single berm will not be sufficient to protect this property, so the addition of the Kinetic Barrier Fence to the rear of this property continues to be required.

Property No. 8, 9, 10:

Properties 9 and 10 are currently unoccupied, and the berm improvement works upslope have reduced their risk status from High to Medium, as is the case with Property No. 8.

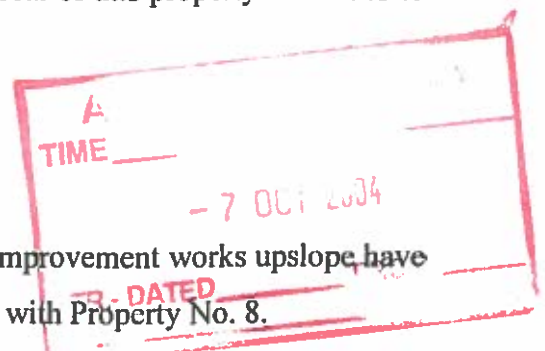




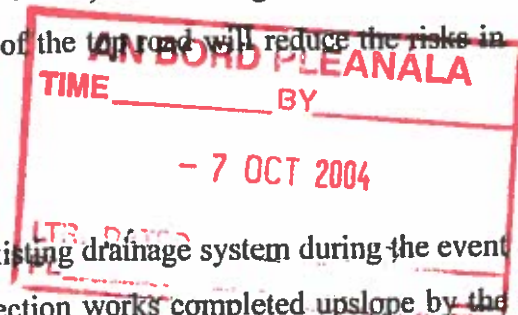
Plate No. 9 Reinforced berm shown in Relation to Property No. 5

Property No.'s 3 & 4:

The addition of the new berm along the front of Property No. 5 will add the protection required for the two properties below (Property No.'s 3 & 4). This along with the drainage improvements and the channel lining along the sides of the top road will reduce the risks in this area.

Property No. 6:

Property No. 6 was subjected to overtopping of the existing drainage system during the event on September 19th 2003, but with the improved protection works completed upslope by the reconstruction of the berm and the improved roadside drainage along the LT52431 (Barnacuille Road) the risk to this property will be reduced significantly.



DRAINAGE WORKS:

Mayo County Council and the Office of Public Works have carried out a series of remedial works to the drainage network along the main road (LP1202), the Glengad Road (LT12025) and the Barnacuille Road (LT52431). The retaining wall at the graveyard has been reconstructed and extended and the banks of the drain have been reinforced where required. The complete roadside drainage network has been upgraded with roadside drainage channels opened and discharge channels to the sea have been reinstated and cleaned. This work along with the improvement works upgradient on the slopes to the drainage network will direct the future flows to the improved drainage networks below.

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