An Bord Pleanála

Inspector's Report PL17.247707

Development	The lateral extension to the existing Tailings Storage Facility (TSF) serving the existing Tara Mines and the construction of an Integrated Constructed Wetland Facility (ICW) to treat effluent from the tailings facility post-closure.
Location	Randalstown, Simonstown, Windtown and Nevinstown, Navan, County Meath.
Planning Authority	Meath County Council.
Planning Authority Reg. Ref.	NA/160408.
Applicant	Boliden Tara Mines Limited.
Type of Application	Permission.
Planning Authority Decision	Grant.
Type of Appeal	Third Party v. Grant
Appellants	(i) Wolfe Tones CLG, (ii) Kealy Family, (iii) Fiacra and Mary O'Cinneide, (iv) Peter and Joan Brady, (v) Local Residents Action Group.
Observer	Michael Meehan.

Date of Site Inspection	14th and 27th of March 2017
Inspector	Paul Caprani

Contents

1.0 Introduction and Background

1.1. Boliden Tara Mines Limited, the largest operating zinc and lead mines in Europe, seek under the current application to develop (a) a lateral extension of the existing tailings storage facility at Randalstown, c.5km north of Navan Town and (b) the construction of an Integrated Constructed Wetlands to the south of the existing tailings storage facility at Randalstown. Discharge from the Integrated Constructed Wetland will be to the River Blackwater to the south of the subject site via an underground pipeline. The River Blackwater forms part of the River Boyne and River Blackwater SAC and SPA. The application was accompanied by an EIS and an NIS. Meath County Council issued notification to grant planning permission for the proposal on the 14th November, 2016. This decision was the subject of multiple third party appeals primarily on grounds relating to residential amenity and environmental impact. An Oral Hearing was held on the 28th and 29 of March, 2017.

2.0 Current Operations on Site

2.1. The Tara Mines are located 2 kilometres west of the town of Navan on lands to the immediate west of the old Navan/Kingscourt Railway Line and to the south of the former N3 National Primary Route which runs northwards and runs along the northern boundary of the site towards Kells. The mining activity comprises of the drilling and blasting and removal of ore within the underground mines. The extracted ore is then broken up and delivered to one of the five underground primary crushers where it is reduced to gravel/cobble size before being moved above ground for further processing. The ore is then fed into an autogenous grinder which grinds the ore into a fine powder. Water is added to form an aqueous slurry which is fed into aerated flotation cells chemicals are then added to separate the lead and subsequently the zinc from the ore. Within the flotation cells galena (lead sulphide) and sphalerite (zinc sulphide) are separated. This chemical process allows for the separation of desirable minerals (namely lead and zinc) from the ore. Undesirable minerals such as pyrite as also extracted as a result of the chemical treatment. The residual tailings then enter a cyclone where a centrifugal force separates the coarser

material from the finer slimes fraction. The course fraction is returned underground and mixed with portent cement (which assists in the chemical and physical stabilisation) of the residual ore and is returned underground to the mined out area.

The typical concentration of metals and other elements contained in the tailings slurry being discharged to the TSF are set out in the Table 3 below:

Table 3

Parameter (mg/kg)	**Mean Concentration µg/l**
pH	8.3 (pH units)
Total Cyanide (CN)	1
Zinc (Zn)	2430
Lead (Pb)	1929
Arsenic (As)	619
Iron (Fe)	19614
Copper (Cu)	87
Mercury (Hg)	1
Cobalt (Co)	15
Calcium (Ca)	203571
Magnesium (Mg)	17150
Sulphate (SO4)	8517
Sulphide (SO2)	18100
Silver (Ag)	0.5
Aluminium (Al)	1717
Boron (B)	10
Barium (Ba)	53.3
Beryllium (Be)	< 0.5
Bismuth (Bi)	3.2
Cadmium (Cd)	4.2
Chromium (Cr)	27.0
Gallium (Ga)	<10
Potassium (K)	2400
Lanthanum (La)	<10
Manganese (Mn)	1194
Molybdenum (Mo)	1
Nickel (Ni)	52.6
Phosphorous (P)	514
Antimony (Sb)	76.6
Scandium (Sc)	1.6
Strintium (Sr)	561
Thorium (Th)	<20
Thallium (Tl)	20
Titanium (Ti)	16.7
Uranium (U)	<10
Vandium (V)	3.8
Tungsten (W)	<10

2.2. The remaining slime fines are pumped to the Tailings Storage Facility (TSF) approximately 4-5 kilometres north at Randalstown. The existing site at Randalstown where the tailings are stored receives on average c.1.1 million tonnes of aqueous slime per year. Some of the water which rises as a supernatant at the tailings facility is treated and recycled for use in the mining operations. The TSF at Randalstown covers an area of approximately 171 hectares. It is located to the immediate west of the old Navan/Kingscourt Railway. The area in which the existing TSF is located is relatively rural in nature. There are no dwellings in the immediate vicinity of the TSF. The existing tailings facility is surrounded on all sides by levies or earth filled embankment walls extending up to 22 metres in height. Internal access roads run along the tops of the perimeter embankments. An elevated levy also runs in a north/south direction through the centre of the facility. The overall storage facility is approximately 1.35 kilometres north to south and approximately 1.5 kilometres east to west.

3.0 **Proposed Development and Site Description**

Planning permission is sought for two separate but related developments both of which are proposed to be located in the vicinity of the existing TSF at Randalstown.

The proposed Tailings Storage Facility

3.1. Firstly, permission is sought for an extension to the TSF on contiguous lands to the immediate north of the subject site. These lands proposed to accommodate the TSF comprise of approximately 40 hectares. The majority of these lands have been stripped of topsoil and subsoils, mainly for the creation of the embankments around the existing TSF. A small area of woodland is located along the southern boundary of the proposed extension adjacent to the northern boundary of the existing TSF. The eastern part of the subject site comprises of seven relatively small fields bounded by hedgerows which are currently used for the grazing of livestock.

3.2. A number of small streams traverse the subject site and flow towards the Yellow River adjacent to the western boundary of the site. The Yellow River discharges into the River Blackwater (Natura 2000 Site) to the south-west of the subject site. There are also a number of 10 kV and 38kV powerlines traversing the site. The site is

bounded to the east by the old Navan/Kingscourt Railway, to the south by the existing tailings facility and to the north by the R163 and a local road which runs westwards to the small settlement of Donaghpatrick.

3.3. Two local third class roads provide access to the site, along the southern and northern boundary, although presently only the northern access is used. The entrance to the site is located approximately 600m north of the northern berm of the existing tailings facility. The access to the north is provided off the Milestown Road (L-74141) which links up with the R163 between Kilberry and Gibbstown. There are no occupied dwellings along that section of the Milestown Road between the access to the site and the junction of the R163. There is a single storey vacant cottage on the northern side of the access road. There are a number of dwellings to the west of entrance into TSF along the Milestown Road. The nearest is on the northern side of the road approximately 200m from the existing entrance. The occupier of this dwelling is an appellant in the subject appeal. In terms of surrounding settlement in the wider area, most dwellings are located along the R163 approximately, 600 metres to 1 kilometre to the north of the site. Navan Racecourse is also located approximately 1 kilometre to the east of the site.

3.4. The proposed 43-hectare extension will extend the existing tailings storage facility in a northerly direction by approximately 550 metres. The extension is referred to in the documentation submitted as the ‘Stage 6 Storage Facility’ (the previous developments on site included lateral extensions to the tailings facility as Stages 1, 2 and 3 and vertical extensions with the increase in embankment heights as Stages 4A, 4B, 5A and 5B).

3.5. It is proposed to develop the storage extension over two phases. The first phase will involve the construction of earthen berms approximately 10 to 15 metres height above existing ground levels (ground levels within the site vary from between c.45 to c. 50 metres above ordnance datum). It is estimated that the storage area during the first phase will accommodate c.5.3 million cubic metres of tailings. The EIS indicates that Phase 1 will have a lifespan of approximately 6.5 years (based on a tailings discharge of 1.1 million tonnes per year).

3.6. Phase 2 will involve the construction of a higher embankment on the outer edge of the proposed Phase 1 embankment. This will increase the height of the

embankments by approximately 8 metres. The methodology for constructing the embankments are set out in Figure 3.4 (page 45) of the EIS and also further details are provided in Appendix A of the applicant's response to the Planning Authority's further information request received on 16th September, 2016.

3.7. The walls of the proposed basin are to be constructed from low permeable glacial material, but unlike the existing tailing pond, the base and upstream face of the embankment are to include composite liner. The embankment walls will be constructed on a 1:2 gradient (c.45 degree angle). Full details of the construction methodology are set out in Section 3.1.2 of the EIS. Further details in relation to the composite HDPE liner are contained in Appendix A of the applicant's response to additional information sought by the Planning Authority. A perimeter roadway will be constructed and merged with the existing roadways around the present TSF facility to the south. Construction materials will be sourced from on-site borrow pits, on-site stock piles and third parties licenced facilities (in the vicinity of Slane) as well as residual aggregate from the mines. In terms of volumes of material, it is estimated that 1.784 million cubic metres of material will be required. The composite lining will consist of a HDPE geomembrane over a geo-synthetic clay liner. Details of the composite lining system are set out in Figure 3.9 of the EIS. A leak detection system will also be installed as part of the liner. Embankment stability modelling was also undertaken and the details are presented in Section 3.7.4 of the EIS and also further details are presented in Appendix A of the applicant's response to the additional information request from the Planning Authority. Piezometers and groundwater monitoring wells will be incorporated into the scheme. The overall construction (Phases 1 and 2) will take approximately 5 years.

3.8. Site preparation works will involve the reworking of the current stream which traverses the site (Blake Stream). The stream will be rerouted from its existing path to a confluence point on the Yellow River 400 metres north of the existing entry point into the river. The existing 10kV and 38 kV powerlines will also be re-routed.

Integrated Constructed Wetland

3.9. The second aspect of the proposed development is the construction of integrated constructed wetland (ICW) on lands to the immediate south of the Randalstown tailing storage facility. The ICW will extend over an area of 12 hectares. The lands in which the ICW is to be located currently comprise of a small patchwork of fields which are used for both arable farming and pasture farming. A small area of woodland is located in the northern area of the proposed ICW.

3.10. The ICW is to provide a passive treatment system for the discharge from the TSF post-closure phase. In the immediate phase after the closure of the TSF, an active post-closure monitoring and maintenance period will take place. This is estimated to last for a period of 5 to 10 years. During the post-closure facility, the TSF will be capped and all intercepted rainwater which falls upon the c.210-hectare site will require collection management and treatment prior to discharge to surface waters. Currently water collected in the TSF is treated and used in the mining production process. This water recycling treatment will cease post-closure and any run-off and infiltration through the capping will be redirected and treated in the integrated constructed wetland prior to discharging into the River Blackwater.

3.11. The ICW will cover an area of c.12 hectares and will comprise of a series of shallow ponds c.200 millimetres in depth where helophyte vegetation will be planted. The vegetation absorbs/treats/cleanses the contaminated water from the TSF as it flows through the ICW. This treatment is achieved through a combination of physical, chemical and biological processes. The ICW vegetated ecosystem, has according to the information contained in the EIS, proven most effective in treating an attenuating a wide range of nutrients and pollutants. The process of ICW treatment is complex and there are a number of different processes at play in treating the contaminated water. These include:

Table 2 Cleansing Processes undertaken at the ICW

Medium	Processes
Vegetation	Ion uptake/translocation Adsorption Organic decomposition Filtration
Water Processes	Evaporation Dilution Decomposition Microbial oxidation/reduction Precipitation
Substrate Processes	Microbial oxidation/reduction Ion Exchange Precipitation Adsorption Chelation Chemical (organic) decomposition

3.12. Based on annual long-term monitoring data it is estimated that the annual flow from the TSF into the ICW would be c.800,000 m^3 per year. A prototype ICW has been constructed and has been in operation at the Randalstown site since August, 2015. Initial indications suggest that the ICW is effective in treating contaminated waters.

3.13. The proposed ICW will comprise of five separate pond areas comprising a total surface area of 100,000 square metres. The sizes of the individual ponds are set out in Table 2 below.

Table 2

ICW Pond No.	Treatment Area
Pond 1	**13,800m^3**
Pond 2	**19,550m^3**
Pond 3	**28,350m^3**
Pond 4	**21,650m^3**
Pond 5	**16,850m^3**
Total	**100,000m^3**

3.14. Each of the ponds will be fed sequentially by gravity from ponds 1 – 5 before discharging via an underground pipe route to the Blackwater River. The depth of each of the ICW ponds will be c.150 to 200 millimetres enclosed by 1-metre-high

perimeter banks. The layout and schematic section of the ICW is set out in Figures 3.24 and 3.25 of the EIS. The site is located in an area above a locally important aquifer and the vulnerability rating is described as moderate to high. The groundwater protection response is R1. The construction of this ICW will take between 9 and 12 months. The upper horizon of the underlying soil will be compacted to ensure that the wetland has low permeability.

Until such time as the ICW has been proven to be effective, the post commissioning phase will continue to ensure that water from the TSF will be treated in the current way and will then be discharged to the River Boyne. The proposed outfall from the ICT unit will be approximately 2.5 kilometres to the south-west of the ICW. Treated water from the ICW will discharge into the Blackwater River (a designated Natura 2000 Site).

4.0 Planning Authority Decision

4.1. Decision

The planning application was lodged on 27th April, 2016. The Planning Authority granted planning permission on the 14th November 2016 subject to 18 conditions.

A large number of observations from local residents, local community organisations and local councillors submitted letters of objection to the development on the grounds that the proposed development would have an unacceptable impact on local environment and amenity of the area. Concerns were also raised in relation to health and safety implications arising from construction and possible failure of the integrity of the embankments.

4.2. Additional Information Request

The Board will note that the initial planning officer's report was not originally contained on file, it was subsequently submitted by the planning authority along with other documentation on the 06th February 2017. This information is contained in a pouch to the front of the file. On the 21st June, 2016 Meath County Council requested that the applicant submit the following additional information.

- Submit certification from a qualified structural/civil engineer certifying that the structural stability of the proposed embankments to be constructed on site.

- Submit cross-sectional drawings of the embankment showing details of all construction materials.
- Supply details of all groundwater management during the laying of the composite liner including details of the proposed method of welding of the geomembrane system.
- Provide details of the proposed leak detection system to be employed.
- Provide details of a completed slope stability report by a competent chartered geotechnical engineer.
- Submit a draft construction and environmental management plan together with an emergency response plan for the proposed works.
- Provide further clarification of the construction period for the TSF.
- Provide details of the protective measures to be deployed to ensure the species are protected from the River Boyne/Blackwater SPA/SAC.
- Address the long-term impact of the loss of water in the existing TSF for the Whooper Swan.
- Demonstrate that there will be no impact on the underground aquifer arising from the new TSF.
- Provide further details of the proposed berms to mitigate the visual impact arising from the proposal. Further details in relation to photomontages should also be submitted.
- Provide a more detailed traffic impact assessment setting out precise details of the proposed haul routes to and from the site.
- Provide written confirmation from State bodies indicating that adequate financial provisions have been put in place to ensure that the CRAMP can be implemented at any given time.
- In relation to the ICW, further details are requested to indicate that the culverts proposed as part of the ICW are upsized sufficiently to convey flows up to the 1:1000-year extreme flood event. Details of a programme for channel clearance of vegetation should also be submitted.

- Provision of a site specific flood risk assessment for the proposed lateral extension to the TSF.
- Provide further details including examples from international studies showing that ICW treatment options are an effective method of treatment and that the in situ clay beneath the proposed ICW can achieve a permeability of 1×10^{-9}.
- Provide further details of the discrepancies on file with regard to water supply.
- The applicant is requested to address all concerns raised in the submissions by third parties and prescribed bodies.
- The applicant is requested to submit an invasive species management and control plan.
- Finally, the applicant is requested to submit revised public notices.

4.3. **Further Information Submission**

4.4. Further information was submitted by the applicant on 16th September, 2016.

- The applicant submitted certification for the construction of the embankments from qualified structural engineers (Golder Associates UK Limited). Full details of the cross sections of the embankment walls are submitted, including details of the types of materials to be used in the construction of the embankments.
- In terms of groundwater management, it is stated that the HDPE lining will be placed in the drainage basin where groundwater is at its lowest. The existing primary and secondary drainage system will be expanded and deepened in order to more effectively manage groundwater ingress. Settlement ponds and the provision of a sump area will also be employed as part of the groundwater management regime.
- The majority of the HDPE liner panels will be fusion welded. Details of all supervisory measures involved in the welding process are set out in the response. Details of the quality control measures and independent supervision which is to take place is also set out in the response.
- Details of the leak detection survey is set out. A leak detection survey using a DC electrical current will be installed subsequent to the installation of the lining system.

- In terms of bank slope stability, detailed embankment stability modelling was undertaken. The required minimum factor of stability was exceeded in the modelling exercise under all conditions analysed.
- An emergency response plan developed by Tara Mines is in place for the existing TSF. A construction plan template is presented in Appendix D of the submission. The contractor will develop his own construction plans for the works.
- For clarity it is stated that the construction period will proceed in two phases over a period of five years. Phase 1 will take 30 months to complete. There will be a cessation of works for six months prior to the commencement of Phase 2 and Phase 2 will take place over a period of 24 months.
- Details of the proposals to address the long-term impact of the loss of open water habitat that is presently available for the wintering Whooper Swan are detailed in Appendix 4 of the additional information. Appendix 4 also incorporates a report which assesses the potential adverse impacts which could arise as a result of the proposed development on designated Natura sites in the vicinity namely the River Boyne and River Blackwater SPA and SAC.
- In terms of potential risk to groundwater supplies, Appendix 5 includes a report from AECOM. This report carries out a risk screening analysis to assess the risk on groundwater arising from the TSF. It concludes that seepage inputs from the existing TSF and interceptor channel pose a moderate risk to surrounding environment, specifically groundwater. The main risks arises from increased sulphate concentrations in the groundwater. The proposed development will be a lined facility so seepage will be significantly reduced into the underlying groundwater. A series of mitigation measures are also set out in the report to further reduce any potential impact on groundwater. Any potential impact on groundwater will be closely monitored.
- In terms of the construction of berms to reduce the visual impact of the proposed development, it is stated that the berms will be constructed to a height of 4.5 metres along the northern boundary of the proposed TSF facility (see Figure 6.1 submitted with the response), and will be planted with suitable grass species. They will also act as acoustic barriers. It is intended to augment the landscaping with appropriate tree planting. Figure 6.2 provides photomontage along the

northern boundary of the site. Also a set of revised photomontages are submitted in Appendix 7 (the Board will note that Appendix 7 is located after Appendix 8 in the additional information folder submitted).

- Appendix 8 of the submission includes a revised traffic impact assessment. The construction period was increased form 3 years to 5 years with a consequential reduction in daily trip generation. It also contains details of the proposed routes and the anticipated traffic volumes on each route. It concludes that the traffic generated by the proposed works will be temporary and relate to the construction period only. A junction capacity analysis of the surrounding road network is undertaken in the TIA and it is concluded that all junctions will operate below capacity during the construction phase of the proposal. The selected haul routes for the construction period will be along the R162 (Navan to Nobber Road the R163 Slane to Kells Road).
- With regard to the Closure, Remediation and Aftercare Management Plan (CRAMP) it is stated that the combined financial provision for the CRAMP is currently on deposit with a bond to Meath County Council. The company is actively engaging with relevant statutory authorities namely the EPA, Meath County Council and the Department of Communications, Climate, Action and Environment on transferring the fund and associated bond to a structure which is more acceptable to all three agencies.
- Appendix 10 of the submission contains further details in relation to sizing the culverts to provide sufficient hydraulic capacity to convey a 1 in 1000-year extreme flood event. A specific programme for channel clearance and vegetation upstream and downstream of the culverts and a site specific flood risk assessment is also contained in the Appendix.
- It is stated that assimilative capacity calculations for the integrated constructed wetlands show that after treatment discharged waters will meet all regulatory limits for surface waters as per Appendix 5.1 of the main EIS.
- A report by Dr. Ronan Courtney of the University of Limerick has prepared a review of international case studies which provide long-term evidence to demonstrate the efficiency of integrated constructed wetlands in relation to the treatment of mine wastes. The report is contained in Appendix 11.1.

- A separate report in Appendix 11.2 demonstrates that the soil liner of the ICW can achieve a permeability of 1 x 10^{-9} metres per second.
- In relation to water supply issues, it is stated that the site is served by a public watermain and also has an on-site borehole/well. The public supply will be the source of potable water for the proposed development. It is also proposed to install a package wastewater treatment system and polishing filter.
- The information response sets out details addressing the issues raised in the various third party observations submitted objecting to the proposed development. Tara Mines recognise the corporate social responsibility it has for the local community and employs a total of 572 employees directly at the mines. It is stated that the annual contribution to the balance of payments is in the region of €156 million per annum.
- Finally, the applicant has commissioned an Invasive Species Management Control Plan in respect of the proposed development and this is contained in Appendix 14 in the Response to Additional Information.

4.5. **Further Assessment by Planning Authority**

4.6. A report from the Environment Department notes the additional information submitted and recommends a series of conditions be attached to any grant of planning permission issued by Meath County Council.

4.7. A report from Inland Fisheries states that it welcomes the commitment given that the new ICW will not be commissioned until its planned discharge provides effective treatment. The effectiveness should be a determined by the EPA rather than the applicant.

4.8. A report from the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs states that the applicant has offered an incomplete, integrated constructed wetland design of 12 hectares as a compensatory habitat to the eventual loss of 160 hectares of open water habitat associated with the existing tailings facility. This issue has not been adequately addressed in the planning application and the local authority should consider whether it is necessary to reclaim the land.

4.9. A large number of third party observations were submitted on foot of the additional information raising similar concerns in relation to the impact on the environment, impact on residential amenity and potential adverse impacts on health and safety. Traffic concerns are specifically highlighted in a number of appeals.

4.10. A report from the Roads Design Office states that the additional information satisfactorily addresses the issues raised. It is stated that some submissions from residents' groups at Kilberry are seeking some additional safety measures around the crossroads at Kilberry such as footpaths and bus bays which appear to be reasonable subject to agreement with the applicants. It is therefore recommended that there is no objection to the proposal subject to conditions addressing these concerns.

4.11. A report from the Senior Executive Engineer Environment Department states that there are insufficient details with regard to culverts. Details in respect of the flood risk assessment are deemed to be satisfactory. It is recommended that the applicant be conditioned to submit further detailed designs in relation to the longitudinal sections for culverts C3, C4 and C7.

4.12. The planner's report sets out details of the proposed development and outlines the applicant's response to the additional information request. The planner's report indicates that the additional information received on behalf of the applicant is generally adequate although there are some gaps in relation to the information provided. It is considered however that these issues can be adequately dealt with by way of condition. Of particular concern is the technology surrounding the ICW and its ability to adequately treat discharges from the TSF to an adequate standard so as not to pose a risk to the conservation objectives of the River Blackwater SPA/SAC. The Planning Authority would have concerns permitting this element of the development as the applicants have not progressed their trials to the detailed design stage. In line with the precautionary principle therefore, it is considered that this element of the development proposal would be premature pending the completion of a more detailed site specific trials.

4.13. In conclusion therefore it is stated that the principle of an extension at the tailings storage facility has already been accepted previously by both Meath County Council and An Bord Pleanála under previous planning permissions in 1973, 1996 and 2009.

It is stated that under the provisions of Section 256 of the Planning and Development Act where the Planning Authority decides to grant permission to a development which is also subject to an IPPC Licence, the Planning Authority is precluded from attaching conditions for the purposes of controlling emissions from the activity. Having regard to the positive referral response received from prescribed bodies, as well as the internal reports from Meath County Council, it is considered that the development represents a logical and necessary extension to the tailings storage facilities in order to ensure that the operations of the main mine can be continued. It is acknowledged that local residents will be impacted upon during the construction of the proposed development. However, it is considered that once all mitigation measures are fully implemented and that planning conditions are fully complied with, it is considered that the proposed development would be in accordance with the proper planning and sustainable development of the area. It is therefore recommended that planning permission be granted.

4.14. **Decision**

In its decision dated 14th November, 2016 Meath County Council issued notification to grant planning permission subject to 28 conditions. The following conditions are of note.

Condition No. 3 requires that the passive treatment system to the south of the existing tailings storage facility shall not be permitted. The passive treatment system shall be the subject of a separate planning approval.

Condition No. 14 requires the applicant to pay the Planning Authority €100,000 as a special contribution towards road improvements in the vicinity of the development.

Condition No. 15 requires the applicant to bear full responsibility for the costs associated with overlays due to damage on the regional and national road network in the vicinity.

5.0 Planning History

Full details of the planning history associated with the Tara Mines Facility are attached in a separate pouch contained on file. In addition, the planner's report makes reference to the granting of planning permission for previous applications for

the extensions of the tailings facility in 1973, 1996 and 2009. There are no details of any of these planning applications on An Bord Pleanála's website.

6.0 Grounds of Appeal

The decision of Meath County Council to issue notification to grant planning permission was subject to five third party appeals. The appeals are outlined below.

6.1. Appeal by Wolfe Tones CLG

- The appeal expresses serious concerns in respect of traffic and road safety. It is suggested that there is a serious lack of clarity in respect of conditions nos. 14 and 15.
- Any roadworks to be carried out at Kilberry Cross need to be completed in advance of works undertaken on site.
- It is not clear in the absence of furnished details as to whether or not the €100,000 financial contribution condition would be sufficient to incorporate adequate safety measures at this junction.
- The football club would welcome a condition that the applicant be responsible for the full cost of these works.
- The proposal involves the importation of large volumes of material outside the site. A full analysis of the safety implications arising from this increased traffic needs to be undertaken on all proposed haulage routes. This should include details of the provision of laybys, carriage width alignments and junctions. This would involve an experienced engineer to carry out a road safety audit including a road signage strategy. All roads should be maintained to an appropriate standard for the 15-year design life.
- Finally, the grounds of appeal set out a number of conditions which should be attached to any grant of planning permission requiring the developer to fully identify all haul routes and provide maintenance protocols and agreements with the Council so as to ensure that roads are deemed fit for purpose and do not in any way deteriorate as a result of traffic generated by the development.

6.2. **Appeal by the Kealy Family**

- The grounds of appeal state that the appellant currently resides at Milestown Road at Randalstown and she has lived at this location for more than 40 years. Her house is located to the immediate north of the proposed extension to the tailings facility. Concern is expressed with regard living in such close proximity to the embankments which would contain the tailings facility. The tailings have high concentration of both zinc and lead.
- The visual impact arising from the 22-metre-high berm construction is also of concern and it is argued that it would have an overbearing impact on the appellant's property. There is insufficient visual screening in the form of planting and shrubs.
- It is considered that the works needed to facilitate the development will result in considerable increases in traffic volumes in the local area. This will create a safety hazard for traffic users in and around the area. The road network in the area is simply not up to a sufficient standard to take the heavy volume of traffic that will arise as a consequence of the development. There was already a serious accident last year where a truck overturned on one of the local roads. Houses along the roads have been negatively impacted upon by the heavy traffic volumes.
- There are serious concerns that the materials stored in the tailings facility are toxic in nature containing some if not all of the following pollutants: lead, chromium, sulphur dioxide, benzene, toluene, metal dusts, carbon monoxide, nitrogen dioxide, cadmium and particulate matter. These chemicals are a potential risk to human and animal health. Potential breaches in the boundary of the dam would have devastating impacts on the surrounding countryside and the environment. The potential for wildlife to become contaminated and pollute the surrounding area has not been adequately addressed in the application. There is also potential for 'dust blow-off' around the embankment areas and this dust will contain toxic material. Wheels of trucks may also be a source of contamination. The appellants rely on a well for their water supply and there are concerns with regard to a possible leakage of toxic waste from the dam into the well and into the Yellow River. If groundwater becomes

contaminated there would be serious negative impacts on groundwater and groundwater supply. The practice of allowing large volumes of soiled water trucks to flow into surrounding ditches is not conducive to protecting the environment and groundwater resources in the area.

- The appellants are also concerned that the proposal will give rise to unacceptable levels of noise and air pollution during the construction of the embankments for the proposed tailings facility. In relation to dust, it is critical to note that the dust in question is not ordinary dust from a construction site but will contain lead and other heavy metals and pollutants which will be damaging to the local community.
- There is concern that Tara Mines Limited did not communicate directly with the residents. This is disrespectful having regard to the local residents' experiencing the negative effects of the existing facility on a daily basis.
- Concerns are expressed that the proposal will give rise to unacceptable damage to flora and fauna and will give rise to further scarring of the local landscape. The pollutants and heavy metals present in the tailings ponds have the ability, even at very low concentrations, to do serious damage to the environment affecting the genetics of flora and fauna.
- The appellants also have very serious concerns in relation to farming so close to the tailings facility. The potential for dust containing toxic chemicals to blow onto copses of trees and grass is high. Furthermore, there is potential for the contamination of groundwater from the tailings which would have very serious consequences in terms of livestock. Even the mere perception of producing food from the farm that is located adjacent to such a vast tailing pond would have negative implications on foodstuffs produced.
- Finally, it is argued that there is insufficient financial security or bonds in place to deal with all the work which would arise on the eventual closure of the mine. There will be considerable cost involved in properly closing and remediating the area and in the long term this is a major importance to the environment and the local community. Neither is there sufficient funds set aside to deal with a possible major accident leading to a serious environmental pollution.

- An Bord Pleanála are therefore requested to overturn the decision of Meath County Council and refuse planning permission for the above application.

6.3. **Appeal by Sillogue Local Residents Action Group**

- This submission argues that over the previous 40 years the local community have seen the growth of this landfill for the disposal of industrial waste in the middle of a farming area and it is impacting on the quality of life with each passing year.
- There are concerns in the local community with regard to the possibility of the future closure of the Milestone Road. In the submission to Meath County Council the appellant's express serious concerns about health and safety including seepage, risk to water safety, human and animal health and the safety of residents and others using the local roads. It is also stated that the facility gives rise to devaluation of land and properties in the area.
- The submission goes on to question some of the conditions attached to the Planning Authority's notification to grant permission.
- Condition No. 3 – The appellants wonder what would be the implication of a separate planning application for the passive treatment system should prove unsuccessful. This condition is therefore completely uncertain.
- In relation to Condition No. 4, it is unclear from this condition what might constitute a "failures" of any tailing retaining structure and therefore this condition is deemed to be inadequate in the context of the development.
- Condition No. 13 – It is stated that this condition regarding financial provisions for accidents and/or closure of the facility lacks clarity and provides no opportunity for residents to challenge the adequacy of whatever sum was agreed.
- The appellants find it unacceptable that Condition No. 14 makes no specific provision to implement safety measures on the R163 Kilberry Cross to Randalstown Road and the L74141 Milestown Road which carries all traffic from all haul routes travelling to and from the tailings facility. It is requested that An Bord Pleanála should stipulate as a condition that speed cameras and

other traffic calming measures be implemented should the extension be granted. Reference is made to a number of incidences where lorries have come off the road going to and from the tailings facility. Improved signage and traffic calming measures are also required to make the road safe.

- The appellants have made repeated representations expressing serious concerns in relation to pedestrians, cyclists and other road users on this section of road. Details of traffic surveys carried out by the appellants of traffic along the local road are attached.
- While the appellants welcome the requirement for the applicant to consult with a liaison committee from the local community, it is stated that the liaison committee, in order to address roads and mobility issues, will require input from the Transportation Department of Meath County Council if it is to yield satisfactory results. The administration of this committee must therefore be the responsibility of Meath County Council.
- In relation to Condition No. 20, it is highlighted to the Board that the proposed project is close to an important national/international archaeological site, namely the site of the Tailtean Games.
- With regard to Condition No. 28, it is stated that a condition for a revised landscaping plan including proposals for landscaping along the western boundary of the site and along the Milestown Road is inadequate.
- A number of conditions attached to the grant of permission require independent certification of elements of construction which is to be provided by experts chosen and paid for by the applicant. There are some reservations about this matter as it is considered inappropriate that environmental and health testing regimes would be commissioned and paid for by the applicants.
- Concerns are also expressed in relation to monitoring and enforcement particularly in relation to the amount of HGV movements to and from the facility.
- It is requested that the Planning Authority attach a condition which should offer the same health checks to the local community which are currently available to their employees. It further appears inappropriate that testing on

animals on neighbouring farms is a well-established practice yet no provision is made for health checks on humans.

- No provision is made in the decision for a community gain fund. There are strong arguments in favour of establishing such a fund at Tara Mines.
- With regard to invasive alien species, it is stated that the measures included in the information submitted to the Planning Authority did little to reassure residents that an effective plan was being put in place. It is appreciated that this is an EPA issue but the appellants believe that in light of the environmental concerns raised by the local residents, it should have merited a condition.
- Residents in the local community have on-going concerns relating to the devaluation of properties due to the presence of an industrial waste disposal facility.
- The comments contained in the planning report that with the implementation of appropriate conditions the impact on the local community would be minimised and would be temporary. The Stage 6 construction of the tailing pond is scheduled to last for a further 5 years. This is deemed to be a very long time in the life of a rural community.
- A number of appendices are attached to this submission including photographs showing a truck veering over the verge of a road and photographs where it is contended that the road is too narrow to accommodate trucks passing in opposite directions. Details of traffic surveys of HGV trucks entering and leaving the tailings facility are also attached.

6.4. **Appeal by Fiacra and Mary O'Cinneide**

- It is argued that Tara Mines failed to provide a realistic assessment of alternative sites for the proposed tailings facility which is required under the EIA process. No measures were given to prevent, reduce and where possible offset any significant adverse impacts on the environment. It is stated that Tara Mines already own vast areas of land in the vicinity and these were not considered as alternatives.

- In terms of alternative designs Tara Mines have not looked at any other option other than dumping the mine waste in a hole in the ground.
- It is suggested that in previous applications the applicants indicated that 71% of the total tailings produced would be returned to the mines as backfill and only 29% would be disposed of in the tailings facility. It is questioned whether or not this was carried out.
- It is stated that the existing tailings dump has given rise to seepage of heavy metals and this threatens the town water supply. The tailings facility is a storage area for hazardous substances including arsenic, lead, mercury, cadmium, cyanide, iron and zinc. It is suggested that Tara Mines do not have a plan if there is a breach in the tailings dump.
- Details of sulphate concentration from boreholes around the tailings dump indicate that 35 of the boreholes show increases in sulphate since sampling commenced.
- Meath County Council have granted planning permission for the tailings facility without the provision of an integrated constructed wetland. This seems very reckless as Meath County Council would never approve planning permission for any house in the absence of an on-site wastewater treatment system. It is further suggested that integrated constructed wetlands do not adequate attenuate sulphate concentrations. Reference is made to the Kristine Berg mine tailings in Sweden where it is suggested that a contaminated discharge from the tailings ponds after passing through the ICW resulted in increased concentrations of sulphate in the effluent.
- No reference is made to the fact that a greenway has been granted planning permission between Navan and Wilkinstown on an alignment adjacent to the dump. Granting planning permission for an extension to a tailings facility in close proximity to a greenway may be contrary to the SEVESO Directive. The appellants' house is located to the east and on more elevated lands directly overlooking the proposed tailings extension. The proposals seek to construct a 22-metre-high dam which will have a significant adverse effect on views from the appellants' house.

- It will also destroy a vast woodland of mature trees to the north of Stage 5 at the existing tailings facility.
- It is suggested that liaison and consultation with Tara Mines has been poor despite the fact that the applicant has written to the company expressing concerns on numerous occasions.
- Concerns are also expressed that further extensions to the tailings facility could take place and this could give rise to additional leaks which would cause a threat to the water supply of Navan Town.

6.5. **Appeal by Peter and Joan Brady**

- This appeal expresses concerns in relation to the increased traffic volumes which would arise as a result of the proposed development. It is stated that all traffic converges on the site via the Milestown Road. It is stated that traffic will increase by 1,000% and the road is not suitable to accommodate HGV traffic at such volumes. The road is only 4 metres in width and the amount of traffic that will arise will turn a once quiet safe country road into a major thoroughfare which will eliminate the potential for walking and will have serious safety implications. It is inappropriate to allow such levels of traffic along this minor road for 5 years.
- Furthermore, the proposed embankments at 22-metres-high, will be akin to the height and size of a block of flats on a country road. The appellant would have to look at this construction every day forever. The tailing ponds have been adjacent to the appellants' farm for 40 years and no landscaping places have taken place to date.
- The change in the course of Blake Stream and the volume of water coming into the Yellow River increases the risk of further flooding in the area. The appellants' land already floods when water levels are high. There is already a problem with flooding in the area and the proposal will only exacerbate this problem.
- Concern is expressed that the footprint of the new tailings pond is too close to the appellants' lands. Concern is also expressed that the proposal is too close to the Yellow River. It is noted that the original dam walls have leaked. It is

suggested that settling ponds on the west side should be left outside the dam wall as an added safety measure. It is stated that the Yellow River is being polluted and that if sulphate levels continue to rise, livestock will be unable to drink from the river.

- The applicants have carried out random blood tests of livestock in the vicinity but have not provided any test results in farmers in the area.
- Concerns are expressed that the level of dust arising from the construction works to be carried out will significantly impact on amenity. The appellants state that excessive dust levels already occur at the site prior to works commencing. Excessive dust has blown over the silage on lands in the vicinity of the site. Concerns are expressed that the creamery may not take the milk if it is found to be substandard in any way.
- It is believed that it is impossible, given the quantity of material being imported and the composition of what is actually coming in from so many different locations, that there will be not be invasive species brought in to the site. Again concerns are expressed in relation to the lack of consultation regarding the development.
- In conclusion it is argued that the development represents huge risks to the appellants' livelihood and health.

7.0 **Observations**

7.1. **Observation from Michael Meehan**

- The applicants have not reduced the amount of tailings being deposited in the vicinity at Randalstown despite the fact that it is being stated that every effort will be made to minimise the effect on the local community. Tara Mines propose that they will reduce the volume of tailings going into the tailing ponds for 52% to 29% in a submission to An Bord Pleanála on 21st November, 2003.
- When planning permission was granted for the extension of the tailings facility, Meath County Council incorporated a number of conditions. However, it is argued that many of these conditions have been breached including a condition limiting the number of HGV vehicles that could use the R163

(Kilberry to Randalstown Road). Members of the public should not have to draw such matter to the attention of the Planning Authority and wait 28 days for it to be rectified. The Planning Authority should monitor and enforce compliance for the duration of the project.

- The observation argues that the continued use of HGV vehicles (c.100+) on a daily basis carrying soil to and from the tailings facility has adversely impacted on the structure and integrity of the R163. The edges of the road on this 2 kilometre stretch are cracking and subsiding because the road is not wide enough to accommodate HGV traffic. A number of photographs are attached indicating the state and condition of the road.

7.2. Proscribed Bodies

A submission was received by the EPA on February 24th 2017. It states that an IE Licence was submitted by the applicant and is currently under review. This application is accompanied by an EIS and NIS which appear to be the same as the documentation accompanying the planning application. The application is currently being assessed by the Agency. The agency shall only grant a Licence where it is satisfied that the proposal can be regulated appropriately in accordance with the requirements of both the EIA Directive and the Habitats Directive.

8.0 Appeal Responses

8.1. Meath County Council's Response

The response sets out in detail the issues raised in the grounds of appeal and the response is as follows:

- With regard to road and traffic safety, reference is made to Condition No. 14A which requires the applicants to pay the Planning Authority €100,000 towards the implementation of safety measures at Kilberry Cross. Two other conditions (14B and 15A-E) all of which specifically relate to the structural assessment of the haul routes and a special contribution is required towards the maintenance, overlay, repair and annual monitoring of the haul routes. It notes that some of the submissions of the residents' group are seeking some additional safety measures around the crossroads at Kilberry such as

footpaths with bus bays etc. These appear reasonable subject to agreement with the applicants. A preliminary estimate of these works which would comprise of a bus bay (130 metres south of Kilberry Junction) and a 130 metre footpath to the junction together with a bus bay north of the R163 junction and 100 metres of footpath as well as with the relocation of lamppost and ESB poles etc. would be in the region of €100,000. It is stated that there is no objection to these proposals subject to a number of conditions. In the opinion of the Planning Authority the implementation of these conditions will address the traffic concerns expressed in the appeal submission.

- In terms of the timeframe for the development, the 5-year construction period is considered to be sufficient and appropriate.
- With regard to the issue of flooding, it is stated that the applicant by way of additional information, submitted a site specific flood risk assessment. This response was referred to the Environment Section of Meath County Council and the information was deemed to be acceptable subject to conditions.
- With regard to the issue of seepage from the proposed tailings facility extension, the Senior Executive Engineer of the Environment Section of Meath County Council submitted a report based on the further information response. It noted that while there are some gaps in the information presented by way of additional information, the main areas have been addressed and can be appropriately dealt with by way of condition.
- With regard to the integrated constructed wetland, Meath County Council notes that given the fact that the applicants are at a relatively early stage of trails for the passive treatment system and that the outfall from the final pond within the proposed wetlands is directly to the River Blackwater SPA/SAC, the Planning Authority would have concerns permitting this element of the development as the applicants have not progressed their trials to a detailed design stage. Having regard to the details submitted and the comments and concerns of Inland Fisheries Ireland the applicants have failed to demonstrate beyond reasonable doubt that there would not be a risk posed to water quality or the conservation objectives of the River Blackwater SPA/SAC. It is

therefore considered that this element of the proposed development will be premature pending the completion of a more detailed site specific trial.

- Any health and safety concerns are matters which would fall under the scope of the Health and Safety Authority and not the Planning Authority.
- The appellants contend that additional landscaping proposals should be requested for the northern and eastern boundaries of the tailings facility. This matter can be examined by An Bord Pleanála during its assessment of the proposals and can be conditioned in the event that it is deemed appropriate or necessary to do so. The Board are requested to have regard to the positive reports and the submissions prepared by Irish Water and the Water Services and Strategic Transportation and Environment Sections of Meath County Council. The Planning Authority are strongly of the opinion that the establishment of a community liaison committee would be beneficial to both the first and third parties and there would be merit in the Board exploring this option and attaching a condition to this effect if they deem it to be appropriate.

8.2. **Response on behalf of the Applicant**

A response was submitted on behalf of the applicant by Stephen Ward Town Planning and Development Consultants. It is set out below:

- The response outlines the site location and context and details the processes involved in mining the ore. It notes that the mine is a significant employer for the region with 570 full-time employed and 150 contract employees. The tailing facility extension is absolutely essential to allow the mine to continue to operate.
- It is stated that land on the appeal site was used as a source of material for the construction of the existing tailings storage facility to the south. As such it is already substantially disturbed and is of little ecological/heritage or landscape value. It is stated that the final stage of the existing tailing storage facility at Randalstown is nearing capacity and is predicted to be full by the end of 2019. Therefore, further storage capacity is urgently needed to enable

mining activity to continue beyond the year 2019. This will safeguard the future mining and employment at the facility.

- It is stated as part of the future strategic planning the applicants have a closure, remediation and aftercare management plan and this requires a stable and self-sustaining source of treatment. To this end an integrated constructed wetland is proposed. The applicants believe that the ICW is desirable as part of the future post decommissioning management of the facility.
- Details of the various alternatives considered are set out in the response. Reference is made to previous decision by the Board in respect of the tailings facility where the Board acknowledge the established tailings management facility on the site and the location of the proposed development relative to houses in the area and concluded that the proposal would not be prejudicial to public health and would not seriously injure the amenities of the area. In 2010 a further vertical extension was approved by the Council. It is therefore clear that the tailings facility at the site is long-established and permitted.
- Since its inception over 4 decades ago, it is stated that the facility has been the subject of constant and on-going monitoring by the applicants, the EPA and the Local Authority.
- Surface water monitoring is carried out in 13 locations on the River Boyne, River Blackwater and its tributaries.
- There are approximately 50 sampling points for groundwater.
- An ambient air monitoring is carried out at six locations around the vicinity. Noise monitoring and domestic well monitoring are also carried out.
- The latest environmental report submitted to the EPA by the applicants indicates that the tailings storage facility has operated within acceptable limits regarding the above monitoring at all times. The fact that the applicants have never been the subject of enforcement proceedings is indicative of the high and stringent management and monitoring standards employed at the facility.
- Notwithstanding this the proposed tailing extension would represent a significant advancement in technology and construction over the approved

operating phases. The proposed new phases will be formed with composite lining on the upstream faces.

- Details of the sources of the earth materials are set out in the appeal response. The embankments materials will be sourced from within the application site but also sourced from third party sources outside the site. The importation of material to the site provides an opportunity to recycle soil from various construction projects in the region. Much of this inert waste would currently go to landfill. Therefore, what would be classed as otherwise waste materials can be put to valuable use in the proposed development. The proposed development therefore plays a significant role in contributing to better management and recycling of C&D waste in the region.
- Section 5 of the response to the grounds of appeal outlines the Planning Authority's assessment and decision in respect of the application. It notes that none of the consultee comments either internally or externally were negative towards the proposed development subsequent to the submission of additional information. Specifically, there were no objections raised by any consultee to the lateral extension of the tailings storage facility.
- Notwithstanding Condition No. 3 the applicant remains fully committed to the provision of an integrated constructed wetland and would if An Bord Pleanála is minded to grant planning permission, prefer that this component is included in the overall grant of planning permission subject to conditions which the Board may deem appropriate.
- Secondly, with regard to Condition No. 2 of the Planning Authority's notification to grant planning permission, the condition as worded states that "this permission shall have effect for a period of 5 years from the date of grant of this permission". It is assumed that the wording of this is intended to refer to construction activity. It is believed that in the interest of clarity that this should be explicitly stated. It was envisaged that the operational phase of the development will be in the order of 11.5 years. Accordingly, it is requested that this condition be clarified.
- Section 6 of the grounds of appeal sets out the proposed development in the context of national and regional planning policy. It concludes that the

proposed development fully complies with national waste policy, the Greater Dublin Area Regional Planning Guidelines (2010-2022) and the policies and objectives contained in the Meath County Development Plan.

- Section 8 specifically deals with the response to the issues raised in the grounds of appeal. From the outset it is stated that two of the five appeals specifically relate to conditions attached and do not object to the proposed development outright. It is suggested in a number of appeals that the existing tailings storage facility is leaking. As indicated in the EIS, continuing monitoring of the Stage 5 tailings extension has shown that the inceptor channel is effectively capturing almost all of the seepage from the existing tailings storage facility. This water is then recycled back through the tailings storage facility in a closed water cycle process. In relation to the alleged increased levels of sulphate, it is contended that this can be attributed to the increase in the number of sampling locations over the years and also the fact that boreholes are detecting seepage before it enters the water bodies. There is a large dilution available within the water bodies and MAC levels are not being exceeded. The existing tailing storage areas have always operated within regulatory limits as set down by relevant agencies including Meath County Council and the EPA. Furthermore, the proposed tailings facility would represent a significant advancement in technology and construction over earlier approved operational phases. This will include the provision of a high density polyethylene geomembrane over a geosynthetic clay liner. The tailing storage facility has never been the subject of any enforcement by any statutory agency.
- It is stated that in respect of a previous application (An Bord Pleanála Ref. PL17.104373), the Board sought expect advise with regard to potential contamination of groundwater and surface waters in the area. The response to the grounds of appeal states that the findings of this independent report prompted the Board to grant planning permission for the proposed development with appropriate conditions.
- With regard to the proximity of the greenway, it is stated that the proposed development will not encroach upon the route of the greenway or affect the ability to deliver this infrastructure. The proposed tailings facility extension will

have no more bearing on the proposed greenway than the existing tailings site.

- With regard to evaluation of alternatives, the response to the grounds of appeal sets out the various alternative locations, designs and processes which were considered.
- With regard to the issue of a community gain financial contribution, it is stated that the proposed development is relatively unique and not akin to a landfill or other such facilities. Furthermore, the mine generates between €65 and €70 million to the local community annually. Furthermore, an average of €1.75 million is paid annually to the local community in rates, water rates and planning charges. Approximately €55 million annually is spent on the purchases of goods and services within the State. The annual contribution to the balance of payments is approximately €156 million. The company also gives approximately €100,000[1] to charity, community events and community projects every year.
- It is stated that there is no evidence whatsoever to demonstrate that the proposed development would result in the devaluation of property prices in the area. During the operational phase traffic to and from the site would be negligible and there would be no odour or noise impacts arising from the development.
- It is strongly refuted that the proposed development would have a significant adverse visual impact. The existing facility has a minimal visual impact on the wider landscape. It is only the residents of Sillogue House (appellant's F and M O'Cinneide) that have any view of the subject site and the existing tailings storage facility. Their dwelling would be approximately 450 metres away from the proposed extended facility. It is not considered that the proposed development will in any way adversely impact on the visual amenity of the area.

[1] During the proceedings of the Oral Hearing, the amount was €60,000 was referred to (see evidence of Mr. Paschal Walsh).

- With regard to traffic issues, it is stated that the applicant has addressed traffic impact concerns through the additional information response. Construction would be limited to a 40-hour week and to 36 weeks over an anticipated 5-year construction period. With the exception of a 300 metre stretch of road on the Milestown Road, the haul route in the immediate vicinity utilises regional roads which are of good vertical and horizontal alignment. There are a few local facilities in the area that would attract pedestrian and cyclist road users. The applicant full accepts the costs and payment for any reinstatement or repair work on the adjoining public roads and will continue to honour its obligations in this regard. Recently surface repair and verge work were carried out at the applicant's expense. Furthermore, conditions nos. 14 and 15 impose comprehensive obligations on the applicant with respect to road repair and reinstatement. It is simply not possible to eliminate construction traffic. During the operational phase there will be virtually no traffic impact arising from the development.
- With regard to the issue of hazardous waste, the current and proposed site operations do not include the delivery, storage or usage of any hazardous chemicals or raw materials on the site. The mine tailings themselves are classified as non-hazardous and non-toxic. It has been acknowledged by all stakeholders and interested parties at the facility that the tailings water is known to be high in sulphate and to a lesser extent magnesium. Of the parameters monitored at the tailings facility, all are classified as non-hazardous substances with the exceptions of arsenic, cadmium and mercury. In the latter substances concentrations have not exceed the minimum reporting values since monitoring began in 2013.
- With regard to dust, it is stated that dust deposition monitoring results are set out in Table 6.11 of the EIS. Over this period there has not been a single incidence of total deposition dust exceedance in the vicinity of the facility. The EIS acknowledges the potential for windblown dust during the construction phase. However, proposed mitigation measures and planning conditions will ensure that dust deposition levels are within planning and regulatory limits. The mitigation measures are set out in the response.

- With regard to water quality it is stated that the cleaning of the Milestone Road by using a water browser or other purpose use vehicle poses no pollution risk to groundwater or surface water bodies. This activity simply washes earth, mud and dust off the road surface. Tara Mines has been implementing a water quality monitoring system since 1996. Included in the monitoring system are 11 domestic wells and 13 monitoring points in local rivers and streams. The facility operates within acceptable regulatory limits enforced by Meath County Council and the Environmental Protection Agency. The appellants provide no evidence based information to support their conclusions that the proposal has an adverse impact on water.
- With regard to noise and air, the applicants operate within an EPA licence for their activity. Noise limits are already in place. It is suggested that the maximum increase in noise levels along the route due to traffic will be in the order of 6 dB(A). Again the appellants do not provide any evidence to support the contention that the applicant cannot or will not adhere to the conditions set out in the EPA licence.
- With regard to the issue of consultation it is stated that many of the appellants correspond regularly with representatives on behalf of the applicant on local issues including the proposed development.
- With regard to the issue of flooding, the applicant makes reference to the site specific flood risk assessment submitted with the response to the additional information request. The conclusions are that the proposed development is appropriate from a flood risk perspective and not subject to requirements of the justification test. The proposed development will not result in any adverse impact on the hydrological regime of the area. Overall the flood risk is considered to be low.
- With regard to flora and fauna, it is stated that extensive ecological studies have been undertaken and are on-going. A thorough assessment of flora and fauna was carried out in the EIS. It is noted that isolated sections of hedgerow and various tree stands will be required to be removed. It is stated that the tree stand is to be moved for operational reasons irrespective of this planning application and the applicant currently has in place the necessary consents

and licences to carry out felling. The footprint of the application site is of limited ecological value consisting primarily of exposed bare ground and recolonising bare ground. The GA1 habitat forming the eastern part of the site has been newly fertilised and seeded and is very species poor and is again of only limited ecological value.

- In relation to invasive species it is stated that an invasive species management control plan was submitted as part of the further information response. It provides a comprehensive monitoring programme within the site to be surveyed for the presence of any alien invasive plant species. Bi-annual monitoring will ensure that any early germinating plants are observed before having the opportunity to reproduce and that any late germinating plants will not be missed. If any evidence of alien species is discovered during surveys, the immediate eradication of those plants will be undertaken in accordance with best management. Incoming vehicles will also be subject to wheelwash prior to entering the site and on leaving the site. The discharge from this wheelwash will not be discharged from the site but will be allowed to percolate to ground within a quarantine zone.
- The final section of the applicant's response to the grounds of appeal specifically relates to the conditions attached and the comments in relation to each condition are briefly set out below.
- In relation to Condition No. 3 the applicant states that the proposed tailing storage facilities are not in any way dependent or aligned on the integrated constructed wetland. The ICW is desirable as part of a future post
- In relation to Condition No. 4 which relates to the potential failure of a tailings embankment, it is stated that there are robust safeguards in place to detect and alert to any potential failure of embankment structures. Construction will be overseen by international geotechnical experts to supervise the construction of the Tara Mines tailings facility since the mid-1970s.
- A number of safeguards have been imposed by the Council under Condition No. 9 to ensure that there are no structural deficiencies in the proposed embankments.

- In relation to Condition No. 13, which requires the developer to establish a fund dedicated to providing for the full cost of the closure reclamation and management plan, the grounds of appeal argue that the condition is inadequate as it denies residents the opportunity to challenge the adequacy of sum agreed. In response the applicant states that it is standard practice in the Irish planning system that planning conditions involving development contributions or bonds be agreed between the applicant and the local authority. Third parties are not involved in such detailed financial agreements.
- With regard to Condition No. 14, which expresses concerns that there is no specific provision made to implement safety measures on the R163 between Kilberry Cross and Randalstown Road, it is stated that Meath County Council with the statutory responsibility for roads in the area will decide on what specific safety measures are needed in respect of any road improvement works.
- In response of Condition No. 15 which requires, inter alia, the applicant to establish a liaison committee with local residents' groups to address road and mobility issues which may arise over the five-year construction term, it is stated that the applicants are happy to comply with any such condition.
- In respect of Condition No. 20 the local residents action group state that the proposed development is in close proximity to the Tailtean earthworks which was the site of the Tailtean Games. In response the applicant states that the Tailtean is approximately 5 kilometres to the north-west of the site and that the Department of Arts, Heritage and the Gaeltacht raised no archaeological objections in respect of the development.
- Finally, with regard to Condition No. 28 which relates to landscaping, it is stated that the proposed landscaping is intentionally concentrated along the northern boundary of the site as this boundary abuts the public road. It is stated that such intensive landscaping is not required on the other boundaries and that the proposed tailings extensions will not break the skyline and will in time blend into its surroundings as the proposed grassland on the embankments established over time.

9.0 Planning Policy Context

9.1. Regional Planning Guidelines for the Greater Dublin Area 2010-2022

Section 6.7.1 sets out strategic policy and recommendations in relation to waste management.

PIR40 states that waste management facilities should be appropriately managed and monitored in accordance with best practice to maximise efficiencies and to protect human health and the natural environment.

PIR41 seeks to ensure that plans and projects associated with waste management that have the potential to negatively impact on Natura 2000 sites, will be subject to a Habitats Directive Assessment (HDA) in accordance with Article 6 of the Habitats Directive and in accordance with Best Practice and Guidelines.

9.2. Meath County Development Plan 2013-2019

Section 10.12 of the Development Plan deals specifically with extractive industries. The following policies are set out in the Plan.

RDPOL21 – To ensure that projects associated with the extractive industry carry out screening for appropriate assessment in accordance with Article 6.3 of the Habitats Directive where required.

RDPOL22 – To facilitate the exploitation of the country's natural resources and to exercise appropriate control over the types of development taken place in areas containing minerial deposits, whilst also ensuring that such developments are carried out in a manner which would not unduly impinge on the visual amenity or environmental quality of the area.

RDPOL23 – To support the extractive industry where it would not unduly comprise the environmental quality of the County and where detailed rehabilitation proposals are provided.

RDPOL24 – To seek to ensure that the extraction of minerals and aggregates minimise the detraction from the visual quality of the landscape and do not adversely affect the environment or adjoining existing land uses.

RDPOL25 – To ensure that the extractive industry and associated development minimises the adverse impacts on the road network in the area and that the full cost of road improvements, including during the operations and at times of closure which are necessary to facilitate those industries are borne by the industry itself.

RDPOL27 – to ensure that development for aggregate/mineral extraction, processing and associated processes do not significantly impact on the following areas.

- Existing and proposed Special Areas of Conservation.
- Special Protection Areas.
- Natural Heritage Areas or proposed Natural Heritage Areas.
- Other areas of importance for the construction of flora and fauna.
- Areas of significant archaeological potential.
- In the vicinity of a recorded monument.
- Sensitive landscapes.
- World Heritage Sites.

Section 11.14 of the Plan sets out development management standards in respect of the mining and extracting industries. It states that it should be required as a minimum that development proposals are framed such as to address in an authoritative manner issues such as:

- Impact on groundwater, surface water and important aquifers and compliance with the objectives of the Water Framework Directive.
- Impact on Natura 2000 sites, NHAs and sites of ecological importance.
- Transportation impacts.
- Impact on existing communities with regard to but not limited to noise, vibrations and subsidence and effective control of gaseous submissions and dust.
- Rehabilitation and landscaping which must be in phase with abstraction.

- Impact on the quality of the landscape particularly sensitive landscapes and protected views.
- Impact on archaeological and architectural heritage.
- The extent of landownership, nature of deposits and details of any ancillary processes.
- Protection of identified geological and geomorphological heritage features.
- Provision of adequate securities.
- Assessment of impact on existing rights of way and traditional walking routes.
- Section 11.14.2 states that all extractive sites should be subject to rehabilitation and landscaping programmes in phase with the extraction.

9.3. **Designated European Sites**

The nearest Natura 2000 site is the River Boyne and River Blackwater SPA (Site Code: 004232) and SAC (Site Code: 002299). At its closest point the SAC is approximately 2 kilometres to the west/south-west of the subject site. Surface water streams in the vicinity of the site or within the catchment area of the River Blackwater and as such are hydrologically connected to the European sites in question. There are no other European sites in the vicinity which could be potentially affected as a result of the proposed development.

9.4. **Department of the Environment, Heritage and Local Government "Integrated Constructed Wetland: Guidance Document for Farmyard Soiled Water and Domestic Wastewater Applications".**

This document was produced in November, 2010 and sets out details on site assessment and designing an integrated constructed wetland.

Section 5.10 sets out details of integrated constructed wetland design recommendations.

- It notes in relation to the number of wetland cells that a minimum of 4 cells and less than 6 cells are recommended. Additional ponds are not mandatory but might be desirable.
- In terms of a length/width ratio a ratio of 2:1 is provided. Long narrow channels should be avoided as this increases velocity and can lead to low phosphorous retention and scouring/flushing during high flows.
- Cells should be of a similar size with the first cell ideally 20 to 25% of the overall area in order to ensure appropriate phosphorous capture.
- The depth should be between 100 and 300 millimetres. In terms of plant selection, a variety of species and planting density is proposed.
- In terms of soil depth below the wetland cells it is suggested that 0.5 metres is required with an infiltration rate of less than 1×10^{-8} m/s.
- A 10 metre minimum separation distance from other watercourses in the area is recommended.

10.0 **Assessment**

10.1. Introduction

I have read the entire contents of the file, have had particular regard to the issues raised in the third party appeals, I have read the EIS and NIS, visited the site and its surroundings and conducted an oral hearing in respect of the said proposal and I consider the following issues to be particularly pertinent in determining the current application and appeal before the Board.

- Traffic and Transportation Issues
- Environmental Issues

10.2. Traffic and Transportation Issues

10.2.1. Traffic is a major concern raised by the appellants particularly during the construction phase of the project. Concern is expressed that all the traffic converges on the Milestone Road (L-74141) to gain access to the new development. It is stated that

the road in question is only 4 metres wide and therefore unable to accommodate large-scale HGV traffic. Concern is also expressed that the R163 does not have the ability to accommodate such increases in traffic over a 5-year period. Evidence submitted by Mr. Frank Burke on behalf of the Local Residents' Action Group at the oral hearing also denounced the traffic impact assessment submitted with the application arguing that it considerably underestimated the traffic that is likely to be generated by the proposal and that HGV construction traffic will have a significant and profound impact on the operation of junctions particularly in Navan Town. It was also suggested that the surveys to be undertaken in order to ascertain the structural integrity of the roads, before and after construction, would not reveal the true extent of damage caused by HGV traffic. It was also argued that the proposal constitutes an unacceptable risk to recreational walking and cycling along the proposed haul routes.

Existing Road Network

10.2.2. Only one access point is used to serve the existing facility. This access is located on the local road L-74141 which is sometimes referred to in the grounds of appeal as the Milestone Road. Notwithstanding what is stated in the grounds of appeal, during the course of my site inspection I undertook a number of spot measurements along the width of the road at various points along the L-74141 between its junction with the R163 and the access into the facility (i.e. to the east of the access point). In all cases the road had a width in excess of 5 metres and the width of the metalled carriageway averaged approximately 5.5 metres. It is only at points on the western side of the L-74141 to the west of the access, is the road width less than 5 metres. HGV traffic will not be turning left onto this section of the road during the course of the construction activity.

10.2.3. The L-74141 links up with the R163 approximately 300 metres to the east of the entrance to the TSF. The L-74141 has an 80 kilometre speed limit along its alignment. The Board should note that there are no dwellings other than a single storey vacant cottage structure which is owned by the applicants along the section of the L-74141 between the entrance to the site and the junction of the R163. A small

gate lodge is however located on the western side of the L-74141 and the R163 directly opposite the junction between the two roads.

10.2.4. The R163 is a regional route that runs eastwards to the small settlement of Kilberry which is approximately 2 kilometres away. The R163 forms part of the regional route linking the towns of Kells and Slane. It meets the R162 which runs northwards through Kilberry linking Navan with Kingscourt. The R162/163 junction is a staggered junction. The speed limit along these roads are 80 kmph reducing to 60 kmph in the vicinity of the staggered crossroads at Kilberry. While there is public lighting along the alignment of this junction there are currently no footpaths.

10.2.5. Two designated haul routes have been identified. The haul route from Navan (along the R162) which will transport mined material from Navan Mines through Navan Town Centre northwards along the R162 turning westwards at Kilberry onto the R163, onto the L-74141 then and into the site. The second haul route will be from Slane along the R163 through Kilberry and through the staggered junction, onto the L-74141 and into the site. The original EIS envisaged the importation of 1.1 million tonnes over a 3-year period. This gave rise to a trip generation of under a worst case scenario 42 HGV movements arriving and departing from site during the AM peak and PM peak. The revised traffic impact assessment submitted in response to additional information request made significant alterations to both the timeframe under which construction activities were to take place, and the amount of material to be imported into the site. The timeframe was extended out to 5 years as opposed to three years and the amount of material to be imported was reduced by almost 50% from 1.1 million tonnes to 0.567 million tonnes. As a result, the anticipated trip generation to and from the site during the AM and PM peak was reduced from 42 HGV movements in and out of the site during the AM and PM peak to 18 movements in and out of the site during the AM and PM peak. Construction will take place over a 36-week period from March to October (for the robustness of the calculation it is assumed that only 30 weeks of construction will take place in any given year, therefore traffic to and from the facility will only operate between 55 and 60% of the time in any given year). During this period, it is estimated that HGV vehicles will either enter or depart the site every 3 to 4 minutes.

10.2.6. The impact of traffic on the local road serving the site, the L-74141 will undoubtedly be profound and significant. Although it should be noted that during my site

inspection, I noted that there were regular HGV movements to and from the site currently as part of a landscaping and restoration project which is currently being undertaken around the existing facility, (this information was furnish to me at the oral hearing). It should also be borne in mind that this stretch of road is only 300 metres in length and there are no dwellings along this stretch of road. One of the appellants however, does live in a house approximately 130 metres further west of the entrance and this residence is likely to experience some disturbance resulting from HGV movements to and from the site, although the HGV's will not pass outside her door.

10.2.7. A number of appellants suggest that the traffic levels on this road and on the R163 will make it very dangerous to walk or cycle on the road. There can be little doubt that the increase in HGV traffic will exacerbate potential road safety dangers along the haul routes. It should be noted however that the road currently is devoid of public lighting and footpaths and therefore is not ideal for recreational walking or cycling. All walkers and cyclists would have to exercise due caution in using such public roads. I do however acknowledge the fact that increased levels of HGV traffic for the duration of the construction period will exacerbate the dangers for road walkers and cyclists. I note that it is proposed to put signage in place warning users on the road of the increased presence of HGV traffic. Any discommoding of users on the sections of roadway referred to while the works are being undertaken must be balanced against the need to provide for adequate storage of tailings in order to facilitate the continued operation of the mines which are a very important employer and revenue generator within the town of Navan and the wider area.

Estimated Trip Generation

10.2.8. Evidence submitted by Mr. Frank Burke at the oral hearing heavily criticised the traffic impact assessment which was undertaken on behalf of the applicant and argued that the impact assessment grossly underestimates trip generation arising from the construction activity. Mr. Burke argues that between 5 and 10% of the material deposited on the subject site will not be suitable to be utilised for the proposed embankments surrounding the tailings facility.

10.2.9. Furthermore, it is suggested by the appellants that some of the material to be excavated and utilised from the site will likewise be unsuitable. The applicants

dispute this and consider that the virtually all of the in-situ material on site will be suitable. The appellant also argues that the utilisation of rigid-type HGVs for the importation of material will result in lesser loads being transported to the site which in turn will increase trip generation.

10.2.10. I estimate that the proposed development under a worst case scenario will give rise to 56,700 deliveries of materials over a 5-year period (based on 63 deliveries per day x 180 days per year x 5 years). The average tonnage for a 5 axle dump truck ranges from 13 to 25 tonnes for gravel or soil. Based on an average tonnage of 19 tonnes per truck I estimate that 1,077,000 tonnes of material can be transported into the site based on the figures presented in the traffic impact assessment. This is almost double the amount of material specified in the TIA. The applicant therefore has incorporated a very large contingency element in the figures presented. In fact, if one were to take a worst case scenario where the dump trucks operating on site were to hold the minimum amount of 13 tonnes of soil, it is still estimated based on 8 deliveries per hour (an average of between 7 and 9 deliveries per hour) every day for 180 days per year over 5 years the amount of material which could be imported to the site amounts to 737,000 tonnes, 170,000 tonnes in excess of the amount of material specified in the TIA. In fact, it is likely, based on the figures presented, that if 567,000 tonnes of materials are to be imported onto the site, HGV generation could be considerably less than that indicated in the TIA and may only result in c.60% of the anticipated trips based on an average loading of 19 tonnes per trip. Or at the very least it would enable the applicant to exercise more flexibility in using imported material without exceeding the trip generation limits set out in the TIA. This offers the applicant considerable latitude in terms of not utilising a proportion of material on site were it not deemed suitable, for the construction of the tailings embankment.

10.2.11. Based on the figures presented, it appears that the applicant may have overestimated the trips generated for delivering material or may have based assumptions that each truck would carry a mere 10 tonnes of material which is a very conservative estimation in my view. Notwithstanding this, it is my view that there is significant contingency provided in the traffic figures presented. Furthermore, based on a conservative estimate of 13 tonnes of material per truck to be delivered on site, the traffic impact may be lower than that anticipated in the TIA. Based on an

average loading of 19 to 20 tonnes per truck, the traffic impact may in fact be considerably lower. I consider it appropriate that if the Board grant planning permission in this instance, that the number of HGV movements to and from the site in any given hour be restricted to 18 vehicles per hour.

Junction Capacity

10.2.12. Based on a maximum of 18 HGV vehicle movements per hour, the road capacity analysis carried out in the TIA indicates that all the junctions in the immediate vicinity of the TSF will continue to operate below capacity. In the case of the staggered crossroads at Kilberry, this junction will likewise continue to operate below capacity although there will be a slight increase in queuing times. In terms of the impact on junctions in the wider area, the TIA assess the impact on the existing roundabout in the northern environs of Navan and the R162, N51 and N3 link (Roundabout 'O') this junction is operating above the maximum desirable RSC value of 0.85 currently. However, the traffic generated by the TSF extension will make up a very small proportion of the traffic using the roundabout and as such its contribution to traffic congestion at this roundabout will be minimal and will in my view be acceptable.

Structural Integrity of the Roads

10.2.13. With regard to the issue of impact on the structural integrity of the roads, the applicant carried out an assessment of existing overlay conditions. It concluded that the impact of the construction traffic on the existing road network structure will relate to a 400 metre section on the northbound lane of the R162 only. Furthermore, the applicant recommends a pre-construction and post-construction survey of the structural integrity of the row of pavement. This has been incorporated into a planning condition no. 14(b) which states:

"*Prior to the commencement of development, the developer shall pay to the planning authority a sum of money to be agreed in writing with the planning authority following a structural assessment to be conducted by the pavement management services group as a special contribution towards the expenditure to be incurred by Meath County Council in respect of the cost of works necessary for the overlaying of the*

Milestone Road and Regional Roads, the R162, the R163 and the R147 as well as the N51 to facilitate the proposed development. The charge herein referred to shall apply for a period from the date of this permission to the 31st of December, 2016 and will be subject to review on that date and to annual review thereafter unless previously paid".

Furthermore, Condition No. 15 states:

"(a) *The applicants shall bear full responsibility for the costs associated with overlays due to damage to the R163, R162, R147 and N51 and additional safety measures to be carried out at Kilberry Cross arising from traffic associated with this development. This will be based on the structural assessment carried out by the pavement management systems limited before and after the development to be carried out in conjunction with the local authority.*

(b) The applicant shall be responsible for the cost of repairing any structural road defects arising from the development by the applicant.

10.2.14. I have inspected the main approach road to the site and noted some deterioration in the road surface particularly along the metalled edge of the carriageway. HGV movements associated with the existing tailings facility are likely to have contributed to this deterioration. However, I am satisfied that the Planning Authority conditions will ensure that any damage to roadways as a result of HGV movements associated with the construction of the TSF extension can/will be made good by the applicant in the aftermath of the works undertaken. Furthermore, I recommend that if the Board are minded to grant planning permission a similar type condition should be attached by An Bord Pleanála.

10.2.15. With the exception of the Milestone Road, the HGV traffic associated with the proposed development will form only a small proportion of the HGV traffic currently using key junctions in the vicinity. In this regard I refer the Board to Table 3.1 on Page 6 of the Traffic Impact Assessment which indicates the AM peak and PM peak hour traffic flows through critical junctions in the vicinity of the site and also the portions and percentage of this traffic of HGV movements. For example, at the Kilberry junction, it is estimated that HGV movements associated with the development will account for less than 25% of total HGV movements using this

junction. The conditions attached by the Planning Authority therefore, will in my view ensure that the applicant is adequately held accountable for any damage which may occur in respect of the structural integrity of the road. In fact, it could be argued that the applicant may be required to make good any damage to the structural integrity of the road as a result of wear and tear caused by extraneous traffic in no way related to the development. However, on balance I consider that the applicant should be required to contribute towards any structural damage arising from HGV movements associated with the proposed development along the haul routes as this traffic will undoubtedly contribute to the wear and tear and structural integrity of the roads. I also note that the applicant has not appealed the conditions relating to structural and pavement surveys which were attached by the planning authority. It was also apparent during the proceedings of the oral hearing, that the applicant did not challenge the bona fides of the conditions attached in respect of road surveys etc. and therefore I recommend that if the Board to decide to grant planning permission that such conditions be retained.

10.2.16. In conclusion therefore, and despite concerns raised by third parties, I am satisfied that measures have been put in place to ensure that the applicant bears the responsibility of making good any deficiencies which may occur on the pavement of the haul routes as a result of traffic associated with the construction of the TSF.

Speed Limits

10.2.17. In terms of non-compliance with speed limits, the applicant has a legal obligation to comply with speed limits on the roads in question. Furthermore, the applicant has indicated in the witness statement submitted at the oral hearing by Ms. Sharon Connelly that gateway treatments/vehicle activations, road signs and road markings would be beneficial at entry points to the village to highlight the decrease in speed. This in my view can be adequately addressed by way of condition.

Alternative Access/Egress Arrangements

10.2.18. The submission by Mr. O'Cinneide suggested that it would be more appropriate and more effective to utilise both entrances into the site (i.e. the proposed entrance along the northern boundary of the site and the existing entrance along the southern boundary of the site which is currently not in use). It is suggested that a one-way type system could therefore be utilised where traffic could enter the

facility to deposit materials and continue travelling southwards within the material and access onto the Rathaldron Road to the south of the site which leads back into Navan Town. The route is indicated in the written submission presented at the Oral Hearing by Mr. O'Cinneide. I have visited the site in question and assessed the southern entrance from a road safety perspective. I would have a number of concerns about utilising the more southern entrance. The southern entrance also accesses onto a third class road which is modest in terms of width and alignment and incorporates restricted views particularly in a south-easterly direction at the entrance to the facility. Whereas the northern entrance utilises a third class road for approximately 300 metres before linking up with the regional road, the southern entrance utilises a third class road for approximately 3 kilometres between the south entrance to the site and Navan Town. It would also bring HGV traffic along mainly residential Rathaldron Road which serves as a distributor and collector road for residential areas in the north-west of Navan. During the Oral Hearing Mr. Jim Gibney (Engineer with the Road Design Office of Meath County Council) was asked as to the suitability of utilising this one-way system. He argued that it would be inappropriate as it would draw HGV traffic into mainly residential areas of Navan Town and would also bring HGV traffic in the vicinity of schools along the Rathaldron Road.

10.2.19. The TIA also indicates that approximately 50% of material is to be sourced from the Slane area. Utilising the northern entrance of the site for both access and egress would ensure that HGV traffic would utilise the R163 to the north of Navan, thereby avoiding additional HGV movements within Navan Town Centre. Utilising the southern entrance for egress would bring additional HGV traffic through the town centre.

10.2.20. Finally, having inspected the southern entrance of the facility, I consider that sight lines at the facility are somewhat restricted particularly in a south-easterly direction (see photographs attached). For all the above reasons I would recommend that any access to the site be restricted to the northern entrance only.

10.2.21. In conclusion therefore, it is acknowledged that the proposed development will give rise to an increase in HGV traffic during the construction period which is anticipated to last for 5 years. However, the revisions submitted to the Planning Authority which extends the period of construction from 3 to 5 years will reduce the

intensity of HGV traffic on the roads surrounding the site. Furthermore, the reduction in the importation of material from 1.1 million tonnes to c.567,000 tonnes will considerably lessen the environmental impact arising from HGV movements associated with the construction of the Stage 6 TSF. In fact, I consider based on the figures presented in this assessment that the TIA may have in fact overestimated the traffic generation arising from the importation of c.567,000 tonnes of material onto the site. I am also satisfied that any damage to the road network arising from HGV movements associated with the facility can be adequately addressed by way of condition.

Financial Contribution Conditions

10.2.22. The last major issue which arose in respect of traffic and transportation related to the financial contribution towards pedestrian improvements at Kilberry Cross as specified in Condition 14(a). Mr. Joe O'Reilly of Wolfe Tones GAA Club express concerns at the Oral Hearing that the local community would have no input as to how this money would be spent and as to what improvements would take place on foot of this €100,000 contribution. When asked Mr. Jim Gibney of the Roads Design Department of Meath County Council indicated that the monies would be spent in providing approximately 130 metres of pedestrian footpath on either side of the Kilberry junction along the R162 (Navan – Kingscourt Road) as well as providing a lay-by for a bus stop to the south of the junction. Meath County Council also indicated that as the amount was limited to €100,000 it did not fall under the provisions of Part 8 of the Planning and Development Act, 2000 (as amended) and as such did not require any formal public consultation.

10.2.23. When asked by the inspector at the Oral Hearing, Mr. Gibney indicated that there were not sufficient monies available within this contribution to extend footpaths to any appreciable extent in any east-west direction along the R163 at Kilberry Cross. This is an equally, if not more important haul route associated with the development in that all traffic on the western side of Kilberry will travel along the R163 to the subject site. It would be imperative therefore in my opinion that footpaths be extended along the western arm of the R163. For this reason, I would recommend that the Board consider increasing the financial contribution condition to

€150,000 in order to facilitate a footpath extension on the western side of the Kilberry Crossroads. Increasing the amount to €150,000 would also trigger consultations with members of the public under the provisions of Part 8 and specifically under the provisions of Section 179(2)(c)(d) which would make available for inspection any specified documents, particulars and plans in respect of the proposed works to be carried out and would allow submissions and observations by members of the public. It was clear from the oral hearing that members of the public felt very strongly that they should be provided with an opportunity to comment on any road improvement works to be carried out in Kilberry.

10.2.24. Another major issue raised both in the grounds of appeal and at the submissions at the Oral Hearing related to the dangerous bend at Sillogue Bridge approximately 900 metres to the west of Kilberry Cross and 1.5 kilometres to the east at the entrance to the subject site. There are numerous photographs on file of an incident that took place at this location which involved a lorry partially overturning at the side of the road on the approach to the site. I have inspected the site in question and note that the road does narrow in this location and sightlines are restricted at the bend (see photo number 27 attached). There are numerous photographs at this incident submitted by the appellants. Again it would be reasonable in my view that the applicant be required to contribute towards works which would be undertaken to improve the road in this location. This could involve the incorporation of traffic calming measures at this bend or perhaps widening the road and incorporating a footpath in the immediate vicinity of the bridge. Details of any such improvements could be the subject of agreement between the liaison committee, Meath County Council and the applicants as provided for under Condition 15(d) of the Planning Authority's decision. I would recommend that the Board consider requiring the developer to pay a sum to be agreed with the planning authority towards road improvement works along this section of the road. This could be implemented by way of condition.

10.3. Environmental Issues (Flooding, Groundwater and Surface Water)

Flooding

10.3.1. Appendix 8 of the original EIS and Appendix 10 of the additional information include a site specific flood risk assessment associated with the proposed Stage 6 Tailings Storage Facility. This assessment also includes an assessment of the potential impact arising from the re-profiling of Blake's Stream around the proposed tailings area. One of the third party appellant's expresses concerns that the diversion of Blake's Stream, to make way for the proposed tailings facility, would exacerbate flooding in the area. Blake's Stream is a relatively small stream which enters the site at the north-eastern corner, running along the eastern boundary of the site before turning south-westwards and crossing the site and running parallel to the southern boundary of the proposed extension. The stream would continue to discharge into the Yellow River which runs along the western boundary of the site which in turn discharges into the River Blackwater. Blake's Stream incorporates a modest catchment area of 3.56 km^2. The flood risk assessment identifies the main risk of flooding arising from fluvial flooding from both Blake's Stream and the Yellow River adjacent. The OPW Preliminary Flood Risk Assessment indicates the predictive flood zones within the area of County Meath.

10.3.2. Both the predictive flood maps and the historical flood data indicate the potential for flooding in the case of both Blake's Stream and the Yellow River. A flood risk assessment was carried out using an "Flood Estimation for Small Catchments Methodology". Climate change and increased rainfall amounts were also factored in to the modelling. The required hydraulic capacity of the Blake's Stream diversion is 2.6 m^3/s for a 1% AEP and 3.5 m^3/s for a 0.1% AEP. Details of the proposed dimensions of the cross section of the channel is indicated in Figure 16 of Appendix 10. Hydraulic model simulations were undertaken for the predicted 1:100 year and 1:1000 year return period flow rates (including a 20% increase for climate change). The results are indicated in Table 8 and Table 9 of the Flood Risk Assessment. The modelling undertaken indicates that limited 'out of bank' flooding may occur under a 0.1% AEP. No out of bank flooding is predicted to occur in the proposed Blake's Stream diversion. The flooding scenarios modelled therefore will in no way impact on

anything other than agricultural land on either side and close to the existing banks of the Yellow River.

10.3.3. I consider that a detailed site specific flood risk assessment has been undertaken in the context of the "The Planning System and Flood Risk Management Guidelines, 2009" together with a detailed hydraulic analysis of the two main watercourses in the vicinity of the site namely, Blake's Stream and the Yellow River. I am satisfied based on the assessment undertaken, that the proposed development will not result in any significant adverse flooding. Furthermore, any lands affected by flooding would be agricultural lands and therefore can be considered "less vulnerable" in terms of flooding vulnerability as specified in the land use classes under the guideline. Therefore, the overall flood risk and potential flood impact is deemed to be low and acceptable.

Impact on Groundwater

10.3.4. Concerns were expressed in a number of third party observations that the proposed tailings extension could impact on groundwater in the area. Reference is made in various appeals to the high concentration of sulphate levels which have arisen in some of the boreholes particularly to the south-west of the tailings facility. Information was submitted by Mr. O'Cinneide which indicate that sulphate levels are in excess of the 1,000 mg/l limit for sulphate and that levels in the groundwater to the south west of the tailings facility are continuing to rise. Particular concern is also expressed that heavy metals in the tailings could impact on Navan Town water supply. The Board will be aware that if any existing contamination of groundwater has occurred as a result of the existing tailings facility this is not a matter for deliberation under the current application before it. The Board are also aware that the existing tailings facility is subject to IED licensing and therefore any contamination of groundwater is a matter for the EPA as part of regulating the licence. Nevertheless, the Board is required to make a determination as to whether or not the proposed extension to the tailings facility would result in additional contamination of groundwater and consequential impacts on surface water and, where it comes to the conclusion that this environmental impact is unacceptable, it may refuse planning permission for the proposed extension.

10.3.5. The existing hydrogeological regime is set out below. The aquifer underlying the bedrock is classed as a "*poor aquifer – bedrock*" which is generally unproductive except for local zones. In terms of groundwater vulnerability, the western portion of the proposed extended TSF facility is classed as "high" whereas the eastern half of the site is classed as "moderate". The permeability of the underlying strata is described in the EIS as "highly variable lying in range from 10^{-2} m/s to 10^{-9} m/s". Groundwater levels range from the 52.29 metres AOD to the east of the existing tailings facility to 33.29 metres (almost 20 metres below ground level) at the south-western corner of the proposed extension to the TSF. Groundwater flow is in a south-westerly direction towards the River Blackwater. According to the EIS, groundwater flow is primarily within the upper weathered zone and some deeper flow along bedrock fractures. Flows are relatively short between 30 and 300 metres with groundwater discharging to streams and rivers across the aquifer. The underlying groundwater body is classified as "good". There are according to the EIS, no wells within 200 metres of the existing tailings facility.

With regard to existing water and groundwater monitoring, there have been since 1996 a total of 70 monitoring points in the vicinity of the tailings facility. These comprise of:

- 4 monitoring points within the interceptor channel which surrounds the existing tailings facility.
- 52 groundwater monitoring points comprising of:
  - 24 monitoring boreholes within the overburden.
  - 17 bedrock boreholes.
  - 11 domestic wells.

10.3.6. In addition, 13 surface water monitoring locations are located within rivers and streams in the vicinity. Groundwater is monitored on either a monthly or quarterly basis depending on the parameter (the list of parameters are set out in Table 8.3 – page 404 of the EIS).

10.3.7. Elevated sulphate levels in receiving waters are often derived from sulphates of heavy metals. In the case of the TSF elevated sulphate levels are most likely attributed to heavy metal concentrations within the slimes being discharged into the

TSF. Sulphates exist in nearly all natural waters with concentration varying depending on the nature of minerals within which the groundwater flows. The WHO (2004) did not identify a level at which sulphate in water is likely to cause adverse health effects but studies do indicate a laxative effect and concentrations of 1,000 to 1,200 mg/l. Concentrations in the groundwater to the south-west of the tailings facility have exceeded 1,700 mg/l on numerous occasions (see Table 4.3 entitled '*Sulphate Concentrations and Observation Boreholes'* submitted by Mr. O'Cinneide in a submission to the Oral Hearing).

10.3.8. The Drinking Water Regulations set a sulphate threshold of 250 mg/l. The groundwater regulations (S.I. No. 9 of 2010) set a threshold level of 187.5 mg/l. It is clear from Table 8.5 of the EIS, that average concentrations in the interceptor channel is considerably in excess of this threshold value. The EIS however claims that the interceptor channel is capturing the seepage with such high sulphate levels and then recycling it back to the facility. The EIS however does acknowledge that sulphate levels have breached the threshold levels set out in the Groundwater Regulations. The EIS also states that the average annual concentration of sulphate levels in the groundwater adjacent to surface water bodies do not show a sustained upward rising trend and have remained relatively stable. The EIS reaches a similar conclusion in respect of magnesium.

10.3.9. The information submitted with the EIS and with Appendix 5 of the additional information indicate that historically, elevated levels of contamination have occurred in the groundwater. The construction of the interceptor channel around the existing tailing ponds has resulted in the capture of much of the contaminated groundwater and this is being pumped back into the closed water system. A groundwater modelling exercise was undertaken to assess the risk arising from the existing tailings facility. It concludes that sulphate concentrations pose a moderate risk in terms of groundwater contamination in the vicinity of the site. Impacts on surface water about the Yellow River and the River Blackwater are deemed to be low. This is borne out in Figure 3.9 of the EIS which indicate that annual average sulphate

concentrations are on the whole less than 60 mg/l which is considerably below the 187.5 mg/l guidelines set out in the Groundwater Regulations[2].

10.3.10. Much of the information referred in the grounds of appeal and the discussion which took place at the Oral Hearing related to historic levels of contamination of groundwater in the vicinity of the tailings facility. However, the key issue before the Board in respect of groundwater contamination is whether or not the proposed extension to the tailings storage facility will result in contamination of groundwater bodies.

10.3.11. The original tailings facility constructed in 1996 did not include any tailor made lining to inhibit groundwater infiltration. The current proposal before the Board includes the provision of a HDPE liner (2 millimetres thick) which will be placed beneath a geomembrane clay liner. A leak detection system will also be put in place. According to the evidence of Mr. Roger White at the Oral Hearing, the proposed liner to be incorporated into the tailings facility represents the most up-to-date state of the art composite lining facility for a development of this nature. It is stated that similar linings have been incorporated into the most recent extensions at Galmoy and Lisheen mines and have worked very effectively. The evidence of Mr. White also indicated that the nature of the tailings themselves, because of the fine nature of the material will act as a plug in the unlikely event that the lining fails and a preferential flow path develops beneath the liner. I also refer the Board back to the hydrogeological profile of the site and its surroundings. It is apparent that groundwater movement is in a south-westerly direction and that the thickest soil and subsoil deposits above the water table are located in the south-western portion of the site. Piezometer readings undertaken on site indicated that there is up to 20 metres of unsaturated soil and subsoil above the water table in the south-western part of the site. This will create an additional buffer zone and allow for additional attenuation of any potential leaking from the tailings facility in the unlikely event that significant groundwater seepage takes place.

10.3.12. In my view these mitigation measures together with the natural topography of the site will ensure that any leaching of tailings from the facility will be contained

[2] The Board will note that Figure 3.9 was not contained in the original EIS submitted to the Board, however these figures were presented to the inspector at the Oral Hearing and are attached to the witness statement of Ms. Laura Kennedy which relates to aquatic ecology.

within the confines of the storage facility and as such will not pose a threat to groundwater (and by consequence surface water) in the vicinity of the site. The existing tailings facility has not, according to the applicant been the subject of any enforcement proceedings undertaken by Meath County Council or the EPA. It is therefore highly unlikely that any extension to the tailings facility having regard to the composite lining system to be put in place will likewise give rise to any contamination issues.

10.3.13. I have also noted the contents of the EPA report contained on the EPA website including three enforcement reports. These reports relate to minor issues only and do not relate to any breach in groundwater parameters. The AER reports for 2015 and 2016 state that all groundwater quality data is reviewed in line with relevant water quality standards. I further note that there is no objection from the Environment Department of Meath County Council to the proposed development on grounds of potential adverse impact of groundwater quality.

10.3.14. Any extension to the TSF will also be subject of a new application for a licence by the EPA. If the EPA consider it appropriate to grant such a licence, it will be the competent authority controlling any emissions arising from the extended tailings facility including any emissions to groundwater. Notwithstanding this, under the provisions of the Planning and Development Act, where An Bord Pleanála consider a proposed development to be unacceptable on environmental grounds it can refuse planning permission. Having assessed the impact of the proposal on groundwater and having regard to the fact that

(a) the existing tailings facility has been granted a licence by the EPA under P0516-03, and

(b) additional measures which are to be put in place in terms of the provision of a new composite lining for the new tailings storage facility in accordance with best practice, I am satisfied that the Board could grant planning permission for the proposed development on the grounds that it will not have an unacceptable impact in terms of contamination of groundwater.

Impact on Surface Water in the Area

10.3.15. The impact of the proposed extension to the tailings facility on surface water in the area that are designated European sites under the Habitats Directive and Birds Directive are dealt with under a separate heading entitled '**Appropriate Assessment'** which is set out and evaluated further in my assessment below.

10.3.16. In terms of impacts on other surface water bodies in the area, modelling undertaken as part of the hydrological and hydrogeological investigations assessed seepage outputs from the existing surface tailing facility and the interceptor channel around the TSF. While sulphates in water do not pose a significant threat to the health of humans, high concentrations in receiving waters can be toxic to aquatic life.

In terms of water quality of existing water bodies in the vicinity of the site, the EPA website indicates that water quality on the Blackwater River and Donaghpatrick Bridge c.2 kilometres to the west of the proposed TSF facility is Q2-Q3 - "poor status". Similarly, a value of Q2-Q3 has been awarded to the surface waters at the confluence point of the Yellow River and the River Blackwater at Tatestown c.1 kilometre to the south-west of the proposed tailings facility. The EIS attributes the poor status mainly to eutrophication upstream. The next station downstream at Pollboy Bridge c.200 metres before the confluence of the River Blackwater and the River Boyne indicates a slightly improved water quality status of Q3-Q4 "moderate status".

10.3.17. With regard to the small watercourses within and surrounding the site, these water bodies were subject to aquatic ecological surveys as part of the EIA process. The surveys include small artificial lakes and ponds as well as Blake Stream, Simonstown Stream, Doug Stream and drainage ditches in the vicinity of the site. The streams were found to be heavily modified with significant siltation supporting minimal ecological habitats.

10.3.18. Potential impacts on surface waters would arise through pathways in the shallow unconfined upper reaches of the aquifer which would continue as base flow into the streams and watercourses in the vicinity of the site all of which discharge into the Yellow River and in turn into the River Blackwater SAC and SPA. There are no direct surface water discharges from the existing tailings facility to any surface waters in the vicinity. All discharges are through a secondary medium namely groundwater. The EIS states that trigger values have been set at the interceptor

channel for sulphates and magnesium (100 mg/l and 50 mg/l respectively). While the Yellow River has recorded base flow with elevated concentration of sulphides, the EIS states with the aid of dilution, the concentrations of sulphides in the surface water have been described as insignificant at the confluence point with the Blackwater downstream. As in the case of groundwater, it is anticipated that the proposed extended TSF will incorporate additional mitigation measures including a tailor made composite lining (described above) which will in my opinion significantly reduce the potential for contaminated seepage from the extension to the TSF. The EIS (page 260) concludes that "*modelling calculations predict that the physio-chemical quality of the water will remain within acceptable limits for humans, livestock and aquatic life with the operation of the Stage 6 facility*".

10.3.19. Ultimately it is proposed that any water discharging from the tailings facility would be directed into an integrated constructed wetland for treatment before being discharged to the Blackwater River. Surface water discharge from the ICW to the River Blackwater is subject to an assessment under a separate heading below.

10.3.20. It is reasonable to conclude therefore that the extended tailings facility will not in itself be discharging to any surface waters in the vicinity. Furthermore, as I have already concluded that the proposed extension will not pose a significant threat to groundwater, I can only conclude that any extension to the tailings facility pond will not pose a threat to surface water bodies in the vicinity, as groundwater remains the main pathway or vector from the TSF to the surface waters in the area. The extended tailings facility pond will operate a closed water management system until such time as appropriate water treatment measures by way of an ICW or otherwise are put in place.

10.3.21. Construction activity could also potentially give rise to pollution/contamination of surface water bodies. The applicant has proposed a series of mitigation measures during the construction phase which will involve:

- The use of settlement ponds to reduce sedimentation/siltation.
- The preparation of a construction management plan which will include surface water management measures and an erosion sediment control plan together with an invasive species management plan.

10.3.22. I am satisfied that appropriate measures can be put in place to address any potential adverse impacts of water quality arising from the proposed construction phase of the development.

10.4. Environmental Issues (Air Pollution and Noise)

10.4.1. Concerns are expressed in a number of appeals that dust and general air pollution could give rise to amenity issues for residents in the area and could also give rise to a covering of dust and airborne particulates on surrounding grasslands that may affect animal welfare and dairy production in the area. Concerns are expressed that the existing TSF has given rise to such problems. Baseline air quality surveys are undertaken by the applicants on a frequent basis. This is a requirement under the current operating IPPC Licence. Details of the air monitoring locations are set out in Figure 6.2, page 290 of the EIS. Evidence at the oral hearing put forward by Mr. Sweetman suggested that the baseline surveys should be representative of a greenfield site as opposed to the existing tailings facility that operates on site. I would disagree with any such contention on the grounds that the existing tailings facility constitutes an authorised use that has the benefit of both planning permission and the benefit of an EPA licence. Any baseline studies should be reflective of any authorised uses on site.

10.4.2. The results of total dust deposition monitoring at seven locations in the vicinity of the existing facility over a period of between 2010 and 2015 are set out in Table 6.11. The table indicates that dust deposition is well below the TA Luft of 350mg/m^2/d. There are no instances of exceedances in terms of annual average deposits over the period 2010 to 2015. In fact, only at one location in 2014 did the average annual deposit exceed 100mg/m^2/d (location DB 4). All other data indicates deposit rates ranging from 27/mg/m^2/d to 93/mg/m^2/d.

10.4.3. In terms of heavy metal deposition, results are presented for zinc, lead, cadmium, arsenic and nickel at three monitoring locations around the site. While Figure 6.2 does indicate exceedances in terms of arsenic, nickel and cadmium, this was anomaly was explained at the Oral Hearing. It was stated that the methodology employed in detecting these heavy metals could not record a figure below 0.01ug/m^3 and as a result no figure was recorded for this sample. The figures provided in Table

6.12 according to the information stated at the Oral Hearing, do not result in any exceedances for the heavy metals listed.

10.4.4. On the whole I am satisfied that the existing works which have been carried out at the tailings facility have not given rise to any extensive dust depositions which would impact on the amenities of residents living in the area. The deposition rates recorded in the vicinity of the site are typical for a rural area and in no way come close to the limits specified under the TA Luft method of calculation. In terms of concentration of heavy metals, notwithstanding the figures contained in Table 6.12 of the EIS, it appears that there were no exceedances in respect of heavy metal deposition rates as it appears that concentrations will be below detectable limits with regard to the methodology employed.

10.4.5. In order to minimise airborne pollution, the applicant proposes a host of mitigation measures during the construction phase and these are set out in Section 6.5.1 of the EIS. They involve general dust mitigation measures and good working practices. During the operational phase fugitive dust is more likely to become an issue as the tailing pond is progressively filled within the embankments. However, it is proposed to provide adequate moisture content on exposed tailings to dampen down the material and where complete, it is proposed to enable rapid establishment of temporary vegetation cover of the tailings and apply suitable bonding agents to minimise the effect of wind erosion. As in the case of groundwater and surface water, any emissions arising from the facility during the operational phases will be subject to conditions and limitations set out in any future licence issued by the EPA. However, based on the evidence presented in the EIS and at the Oral Hearing, I am satisfied that the proposed development will not give rise to significant impacts in terms of air pollution and therefore permission should not be refused for the proposed extension on the grounds of potential impact in terms of air pollution.

Noise Impacts

10.4.6. The only adverse potential noise impact which is likely to arise as a result of the proposed development will be during the construction phase. The main noise impacts will arise from the construction of large berms/embankments on site and the traffic associated with transporting the material to the site along the haul routes.

Baseline L_{Aeq} levels at noise sensitive locations in the proximity range from 40 dB(A) L_{Aeq} to 54.6 dB(A) L_{Aeq}. The noise level modelling undertaken predicts noise levels at the nearest noise sensitive locations resulting from construction activity to be less than 55 dB(A) at the closest house to the north of the extended tailings facility (this house is currently under the ownership of the applicants). At all other noise sensitive receptors including the occupant of the dwellinghouse approximately 150 metres to the north-east of the entrance the noise impacts arising from construction is estimated to be less than 50 dB(A).

10.4.7. A separate assessment was carried out for road traffic noise. It is considered that the maximum noise level due to road traffic noise will occur in the AM and PM peak. The most significant impact will be along the 300 metre stretch of the Milestone Road between the R163 and the access to the appeal site. It is estimated that the increase in noise impact along this section of the route will be at its maximum in the order of 6dB(A). Noise levels along the haul routes other than the aforementioned routes will increase by approximately 1 to 3 dB(A) which is deemed to be marginal or imperceptible. The cumulative impacts arising from the construction period arising from both construction activities on site and traffic at the nearest noise sensitive location is estimated to be in the region of 54 to 55 dB(A)

- i.e. 50 dB(A) (for construction activities on site) + 53 dB(A) (background noise level of 47 dB(A) + 6 dB(A) for maximum traffic) = 54.8 dB(A).

10.4.8. There are no mandatory noise limits for construction noise in Ireland. However, the National Roads Authority have published construction noise limits in their document entitled “Guidelines for the Treatment of Noise and Vibrations in National Road Schemes”. During normal working hours the construction noise limits at the façade of buildings should not exceed 70 L_{Aeq} (1 hour) dB. The anticipated noise levels are well below these limits. The noise levels are also within the EPA limits of 55 dB(A) for daytime activities (albeit marginally). Because of the long construction period in respect of the proposed development it may not be appropriate, particularly in a rural area to permit limits of up to 70 dB L_{Aeq}. However, noise generation asrising from the activity which results in cumulative impact of less than 5 dB(A) would in my view be acceptable in terms of construction, activity particularly as background noise levels along the Milestone Road are on the order of 46 and 47 dB(A). The incorporation of a 4 metre berm with additional planting will ensure that noise levels will remain at an

acceptable limit. Evidence provided by Mr. Brendan O'Reilly at the Oral Hearing indicated that the construction of Stage 5A and 5B of the tailings facility was subject to detailed noise monitoring and it is stated that in no instances noise levels exceeded 55 dB(A) and were for the most part under 50 dB(A) during the entire construction activities. I have no reason to believe that, with the incorporation of appropriate mitigation measures, similar noise levels can be achieved during the construction of the extension to the facility.

10.5. Construction Impacts (Structural Integrity of Embankments to be Constructed and Construction Timeframe).

Structural Integrity of Embankments

10.5.1. Details of the construction impacts on surrounding residential amenity has already been assessed in relation to traffic, air pollution (fugitive dust) and noise. I have argued that on the whole, and that the employment of mitigation measures as set out in the EIS, the impact arising from construction activities will be acceptable. Some concern has also been expressed with regard to the potential catastrophic failure of the dam which will accommodate the tailings pond. This issue is subject to detailed further information requests from Meath County Council as part of its assessment of the application.

10.5.2. A very detailed response was submitted on behalf of the applicant by Golders and Associates. It included detailed specifications of materials to be used in the construction of the embankments and included a comprehensive slope stability modelling exercise. The results indicate that the factor of safety (i.e. the factor to which the load carrying capacity of the walls/embankments is greater than the anticipated load exerting on the walls) is satisfactory under all scenarios modelled (including an earthquake). Based on the modelling undertaken, I can only conclude that the proposed embankments are a sufficient strength to ensure the structural integrity of the proposed extension to the tailings facility. The Board will note that the company involved in undertaking then modelling exercise have also undertaken previous construction stages at the tailings facility. There has been no evidence of any failure of the structural integrity of the existing storage facility. Any reference or

evidence in respect of groundwater seepage beneath the tailings facility does not infer any defect to the structural integrity of the existing tailings pond. Public indemnity insurance has also been provided on behalf of the company entrusted to carry out the work.

10.5.3. Based on the information submitted to the Planning Authority by the application by way of additional information and the information contained in the EIS together with work carried out at the existing facility to date, I have no reason to doubt the veracity of the information submitted, including the modelling undertaken that the structural integrity of the proposed embankment will be sufficient to cater for the tailing ponds extension and the associated loads exerted on it.

Construction Timeframe

10.5.4. Concerns were expressed that the construction period would take place over 5 years and this would involve an excessive amount of time resulting in an unacceptable impact on residential amenity of the area. I have argued thus far in my assessment that the impact of the proposed TSF extension in terms of traffic, noise and airborne pollution would be acceptable. While the original proposal sought to carry out the construction over a three-year period, the elongation of the timeframe represents an acceptable trade-off in ensuring that the construction impacts will be less intensive particularly in terms of traffic movements. A longer construction period will result in a commensurate reduction in traffic movements which will be beneficial in terms of reducing trip generation to and from the site on a daily basis and this will have consequential benefits in terms of reduced noise and dust generation and increased traffic safety.

10.6. Visual Impact

10.6.1. Concerns are expressed in a number of submissions about the visual impact arising from the proposed development and in particular the fact that the proposed embankment/berms are to be extended northwards and therefore located in closer proximity to dwellings located on the Milestone Road in the vicinity the northern boundary of the site. Ms. Olive Kealy's residence approximately 150 metres to the north-east of the site will be most profoundly affected as a result of the extension northwards. The closest other dwellings along the Milestone Road to the east of the

house are located over a kilometre away. The objector's express concerns in relation to the height and scale of the proposed embankment, comparing it to the height of five bungalows stacked upon each other. It is proposed to extend the tailings facility in a northerly direction by extending the embankments by approximately 625 metres from the crest of the existing embankment to the crest of the Phase 2 northern embankment under the proposed extension (67.9 AOD). This brings the embankments within 200 metres of the nearest dwelling to the north of the site. And within 400 to 500 metres of dwellings to the east and north-east of the subject site. It is estimate that the crest at the north-eastern corner of the embankment will be approximately 450 metres away from Mr. O'Cinneide's dwelling (Sillogue House). Mr. O'Cinneide's submission specifically expresses concern with respect of the visual impact arising from the proposed development.

10.6.2. I further note that the northern corner of the TSF extension is located on a ground level of approximately 52 metres AOD. Mr. O'Cinneide's residence is located at a height of approximately 68 metres AOD which constitutes a 14 metre height difference. When Phase 2 of the embankment is completed the crest of the embankment will rise to just over 67 metres AOD. Therefore, because of the variation in elevations, the crest of Stage 6 of the embankment will be of a similar height to the ground level of Mr. O'Cinneide's dwelling. I do not consider therefore that the proposal will have a significant adverse impact on the appellant's visual amenity particularly in terms of being of an overbearing nature. The overall embankment will nevertheless be of a massive scale extending over 600 metres in length. It should be noted however that the proposed embankments will be no higher than the existing embankments on site. I consider that conclusion reached in the EIS that the visual impact arising from the proposed development will be 'moderate' is a fair and objective assessment.

10.6.3. The embankment will comprise of natural soils and materials and vegetation will be planted on the berm and exposed soils will recolonise naturally over time. The embankment will over time resemble a natural topographic feature in the landscape such as an esker or glacial moraine ridge. I refer the Board to photo no.1 attached. It depicts the existing embankment from a distance of approximately 1 km away. It resembles a natural feature in my view and it not particularly incongruous in the context of the existing landscape.

10.6.4. The embankments in my view do not result in a significantly strident feature within the landscape and while symmetrical in form they are of a natural appearance and do not have an adverse visual impact. The northern embankment of the tailings facility could undoubtedly be somewhat more problematic in terms of adverse visual impacts due to the reduction in separation distances between the proposed embankment and the dwellings in the Milestown Road. As already stated, the crest of the northern embankment will be close c.200 metres from the nearest dwelling on the northern side of the access road. It will be noted however that only one dwelling will be located in such close proximity to the northern embankment.

10.6.5. The separation distance between the crest of the berm and the nearest residence will ensure that the proposed embankment will have no adverse impact on the dwelling in question in terms of daylight and sunlight. Furthermore, it is estimated that the crest of the embankment will rise 16 metres above the ground level of the nearest dwelling (51 m AOD) and this will not result in any undue over-bearance. The fact that it is also proposed to construct a 4.5-metre-high planted berm along the southern boundary of the Milestone Road would have a significant benefit in screening views of the northern embankment from the nearest visual receivers along the Milestone Road.

10.6.6. From a policy point of view, the Meath Landscape Character Assessment describes the north Navan lowlands (in which the site is located) as being of medium landscape sensitivity. There are no designated scenic routes within the vicinity of the subject site.

10.6.7. Notwithstanding the fact that the extended tailings facility is of significance size and scale, I consider that the conclusion reached in the EIS namely that the impact will be “moderate” is a reasonable conclusion having regard to the incorporation of natural contouring and the fact that the embankments will, over time be recolonised by vegetation. I would refer the Board to the photomontages submitted in the EIS (see Appendix 9). These montages indicate that particularly over longer and middle distances, the embankment will be barely discernible in the context of the surrounding environment and will resemble natural elevated features within the landscape. Furthermore, I consider that there are sufficient separation distances between the berms and the nearest sensitive receptors which will ensure that the proposed embankments will not have a significant overbearing effect on residents in

the vicinity. The presence of a smaller noise attenuation berm along the northern boundary of the site will also soften the visual impact arising from the construction of the larger embankments associated with the tailings pond.

10.7. Property Devaluation

10.7.1. I have assessed the proposed development in the context of traffic, air pollution, groundwater and surface water pollution as well as noise and visual impact. I consider that the proposal will have a modest impact on the amenities of the area and this impact will be in the whole restricted to the construction phase of the development which will last for approximately 5 years. During the operational phase the impact on residential amenity would be negligible. On the basis that the proposed development will have an impact of temporary duration (albeit 5 years) and that this impact would in my view be modest and on the whole acceptable in terms surrounding residential amenity I can only conclude therefore that the proposal is unlikely to result in any material devaluation of property over the medium and long term.

10.7.2. It is also clear that the extension of the tailings facility is critically important for the continued operation of Tara Mines which is a major source of regional employment and is a major economic benefit to the town of Navan and the wider national economy.

10.8. Animal Health

10.8.1. A number of appellants in the grounds of appeal raise concerns that any extension to the tailings facility could have adverse impacts on animal health through contamination of the food chain. The Brady family have particular concerns in this regard and these are expressed during the questioning of technical experts by their representative during the proceedings of the Oral Hearing. The Yellow River is a source of drinking water for the cattle on the Brady farm. Specifically, concerns were expressed that animal health may be compromised by inhaling ambient air and consuming contaminated grass and herbage. Particular concerns were expressed that chronic low level exposure to heavy metals or other toxins in the milk and meat

within the animals could have implications on fertility, growth and milk yield. Any contamination could also, through the consumption of meat and milk, have implications for human health.

10.8.2. With regard to the issue of groundwater as a pathway for contamination particularly through elevated sulphate levels, I have argued previously in my report that the existing TSF does not pose a material risk to groundwater. Elevated sulphate levels are barely detectable in the Yellow River and do not breach EU limits regarding same. Furthermore, the application before the Board relates to an extension to the existing tailings facility which will incorporate a new composite lining system which in my view will be much effective in containing potential seepage to groundwater. Thus the threat arising from groundwater as a pathway for contamination is negligible in the case of the proposed extension in my view.

10.8.3. In terms of fugitive dust, it again appears from the information contained on file that the dust monitoring levels undertaken to date have resulted in fugitive dust levels which are considerably lower than the TA Luft limits. Surveys indicate that heavy metals were in some cases non-detectable in the surveys undertaken, therefore groundwater and air are not deemed to be vectors which can give rise to levels of pollutants which could result in environmental health issues for livestock.

10.8.4. These conclusions are borne out in the periodic monitoring of livestock which have been undertaken in the vicinity of the TSF. Details of the monitoring undertaken which have been systematic since 1995 are referred to in Section 12.4 of the EIS (pages 542 to 571). The monitoring which has been undertaken in the surrounding farms demonstrates that:

(a) there have been no discernible adverse impacts on the health and productivity of livestock on the study farms in the vicinity of the TSF and

(b) there has been no evidence of increased levels of heavy metals in the soil, herbage or livestock as a result of their proximity to the tailings pond.

10.8.5. Finally, in relation to this issue, it appears that some of the concern has arisen amongst the appellants from the fact that the results of some of the studies undertaken by vets were not made available to the public and in particular the landowners on whose lands the livestock could potential be affected. Tara Mines indicated during the proceedings of the Oral Hearing that such details can be made

available in future. In the event of a grant of planning permission, the Board may wish to consider imposing a condition whereby any studies undertaken in respect of animal health would be made available to landowners whose lands were the subject of the studies undertaken.

10.9. Landownership Issues

10.9.1. Concerns were expressed during the Oral Hearing particularly on behalf of the Brady family that full details of landownership were not submitted with the application. I refer the Board to the landownership map (scale 1:5,000) which was submitted with the application. It indicates all lands contiguous to the application site that are under the ownership of the applicants. While the Tara Mines facility and the tailings pipeline are not indicated on the map submitted, these lands do not form part of the subject application nor are they contiguous to the lands which form part of the subject application. Therefore, in my view the applicants do not need to be shown on maps submitted with the application. With regard to the tailings pipeline, no works are proposed to be carried out on the existing alignment of the underground pipeline between the Tara Mines and the existing tailings facility. The pipeline is already in situ but has the benefit of planning permission. It is therefore not necessary in my opinion to provide details of the pipeline in the documentation submitted to the Board. I note that Meath County Council when specifically asked to comment on this issue at the proceedings of the Oral Hearing expressed satisfaction with the landownership details submitted with the application.

It is of course open to the Board to request any such further information should it deem it appropriate prior to determining the application and appeal.

10.10. Lack of Public Consultation

10.10.1. The applicant has complied with the statutory provisions regarding public consultation in terms of erection and advertisement of public notices etc. The applicants also carried out a scoping study to assist and identify those issues and risks that are likely to be important during the undertaking of the EIA process. These included meetings with the local authority and local communities in the area. Details of the scoping and consultation exercises that were carried out are contained in

Section 2.7 of the EIS. I am therefore satisfied that adequate consultation has taken place and is in accordance with statutory requirements.

10.11. Financial Contribution Conditions

10.11.1. Concerns are expressed that no details regarding the amount of the financial security contribution were set out in Condition No. 13 of Meath County Council's notification to grant planning permission. I consider that details of the amount of contribution are a matter between the parties concerned namely the Planning Authority and the applicant. The Planning Authority is the enforcement authority in the case of the breach of any condition relating to the permission. It is appropriate therefore that it is set the appropriate bond condition.

10.11.2. In the case of the CRAMP any financial securities in relation to same is a matter for the various statutory bodies involved including the Planning Authority and the EPA.

10.11.3. With regard to the issue of a financial contribution for community benefit, there are provisions under Section 37(G)(7)(d) to provide conditions in relation to community gain. While there is no specific provision under Section 34 of the Act (the applicant has made the current application under the provisions of Section 34 and not Section 37A of the Act). It may imply that such a condition would be unlawful as there are no specific provisions under S.34 of the Act to allow for the specific conditions to be attached for the purposes of financial community gain. However, having regard to the fact that the applicant, should permission be granted by the Board, will be required to carry out extensive road improvements in the vicinity of the site and furthermore the applicant pays a significant contribution in rates and provides, according to the response to the grounds of appeal, approximately €100,000 to local authority community events and community projects, I consider that it might be unreasonable to require the applicant to make an additional financial contribution towards other community benefit schemes.

10.12. Invasive Species

10.12.1. The applicant has provided significant information in respect of an invasive alien species plan. In this regard I refer the Board to Appendix 14 of the further

information response which sets out details of the plan. I also refer the Board to the evidence of Dr. Patrick Moran which also deals with the issue of invasive species as does Section 4.11 of the EIS. The plan sets out an assessment of species likely to be potentially transported into the site and sets out biosecurity measures to be implemented together with a comprehensive measurement and control plan in order to prevent invasive species. I am therefore satisfied that measures can be put in place to monitor, control and prevent invasive species into the subject site during construction.

10.13. Project Splitting

10.13.1. I refer the Board to the evidence presented at the Oral Hearing by Mr. O'Cinneide who expressed concerns that the proposed development constituted project splitting and made specific reference to the O'Grianna ruling in that an applicant seeking planning permission should ensure that all works form part of the overall project are included in the planning application. It is argued that as Meath County Council have refused planning permission for the ICW and this constitutes an integral part of the overall development, project splitting has occurred.

I would not agree with this argument put forward by Mr. O'Cinneide. Under normal circumstances project splitting arises when an overall project is split into different components in order to circumvent a requirement to carry out EIA, as each component of the project would be compartmentalised so as to fall below the threshold for which EIA would be required. The EIA Directive does not preclude projects from being subject to separate decisions or part of a project being refused permission provided that the impacts have been properly assessed. In this instance the applicant lodged a standalone application comprising of an extension to a tailings facility together with an integrated constructed wetland and the EIS assesses aspects of the project both individually and cumulatively and the potential significant environmental impacts which could arise from both aspects of the proposal. It is open to the Planning Authority in this instance to issue a split decision in granting planning permission for aspects of the proposed development and refusing planning permission for other aspects. In issuing a decision of this nature it does not imply any project splitting for the purposes of circumventing the EIA process.

10.14. **Integrated Constructed Wetland**

10.14.1. The application before the Board includes a provision for the construction of an Integrated Constructed Wetlands (ICW) specifically to deal with the long-term water management associated with the tailings facility, post closure. It is argued by the applicant that the ICW constitutes an integral part of the overall development and as such it should be granted planning permission as part of the current application. The applicants argue that the ICW is required to be up and running as soon as possible so as to ensure that it be demonstrated to the EPA that the ICW is effectively treating discharge from the tailings facility to an appropriate standard so as a licence can be obtained from the Agency.

10.14.2. Meath County Council in excluding the ICW from the overall grant of planning permission considered that the “technology is unproven” and that the applicant’s trials for the passive treatment system only began the second half of 2015.

10.14.3. On the contention that the technology is unproven, the applicants submitted further details of on-site research undertaken in relation to ICWs and details of this research is set out in Appendix 11.3.1 of the additional information submission. The meso-ICW prototype constructed at the tailings facility, has according to the information submitted, been reasonably effective in reducing sulphates where the sulphate content has been reduced by an average of 64.3% (where sulphate in the water prior to treatment was c.1,200 mg/l). The heavy metal content removal was deemed to be better, ranging from 78% to 91% for key parameters such as antimony and zinc respectively. Lead reduction was also good with concentrations in the outlets at limits below the detection level (less than 0.002 ug/l). The information submitted also includes a number of case studies including the Dungarvan landfill, the Churchtown landfill as well as the Dawn Meats Factory in County Waterford - all of which use integrated constructed wetlands for the treatment of effluent.

10.14.4. The Board should bear in mind however that the composition of leachate associated with the landfills would be notably different to that of the effluent characteristics associated with the tailings facility. Leachate associated with municipal waste is unlikely to have the same heavy metal concentrations as that associated with the tailings slurry. A more useful case study referred to in the additional information relates to that associated with Galmoy Mines. This ICW has

been in operation since 2014 and has been receiving flows through the capped areas of the tailings storage facility associated with the Galmoy Mines. As the mines in question also related to the extraction of lead and zinc it can be anticipated that the characteristics of the discharge from Galmoy Mines would be very similar to that associated with the current application before the Board. There is no information contained in the case study in respect of Galmoy Mines as to how effective the ICW is in reducing sulphates and heavy metals. No details are provided in respect of the residual concentration of these pollutants subsequent to treatment in the ICW.

10.14.5. A witness statement was produced by Vesi Environmental Limited at the oral hearing specifically in relation to integrated constructed wetlands. While this information details the works undertaken to date at the Tara Mines site in respect of prototype ICW in operation at the site and also refers to numerous case studies where ICWs have been constructed, and according to the information submitted are successfully and appropriately treating discharges to required standards, there are no details in relation to final concentrations of various heavy metal parameters and sulphate concentrations in the treated discharge arising from the ICW. In the absence of such detailed information, I would agree with the Planning Authority that the Board should adopt a precautionary approach in permitting an integrated constructed wetlands facility in the absence of such concrete information particularly as the treated effluent arising from the ICW will be discharging into the River Blackwater- a designated European Site.

10.14.6. Furthermore, I would refer the Board to Appendix 5.1 of the EIS (page 278 of the EIS) which sets out assimilative capacity calculations for the proposed integrated constructed wetland. The assimilative capacity calculations indicate that the maximum discharge from the ICW would be 7,000 m^3/h or 168,0000 m^3 /d. The assimilative capacity calculations of the River Blackwater are based on a 50 percentile flow which is estimated at approximately 31,000 m^3/h. The Board will be aware that in the case of assimilative capacity calculations, such calculations in accordance with good practice are predicated on 95 percentile flows in the receiving waters and not 50 percentile flows.

10.14.7. EPA figures indicate that at the 95 percentile flow in the River Blackwater at the station of Liscartan (Station n. 07010) which is in the vicinity of the proposed outfall is 1.1 metres per second or 3,960 cubic metres per hour. This represents

approximately 12 to 13% of the 50 percentile flow. It is obvious therefore that the dilution rates available would be seriously curtailed in the case of a 95 percentile flow as opposed to a 50 percentile flow. Evidence given on behalf of the applicants during the proceedings of the Oral Hearing by Mr. Fitzsimons suggested that discharges from the integrated constructed wetlands to the River Blackwater would only occur during periods where river flows within the Blackwater exceeded the 50 percentile flow. It is not altogether clear however how such a scenario could operate on a day to day basis. A key component of the integrated constructed wetlands is the fact that it is a passive treatment system which would continually treat and discharge effluent from the tailings facility through the pipeline into the River Blackwater. It is quite conceivable that during periods of day weather 50 percentile flows within the river may not be achieved or maintained for periods of weeks or even months. There is no indication as to where any discharge would be stored in the case where treated effluent from the ICW was unable to discharge into the River Blackwater where flows within the river were below the 50 percentile level. For example, in a case where the discharge from the ICW was at a maximum rate of 7,000 cubic metres per hour during a dry period (this maximum discharge could be attributed to a prolonged period of heavy rainfall some months/weeks previously) and the maximum discharge from the ICW is occurring during a relatively dry period during the summer months whereby flows in the Blackwater were below the 50 percentile for a period of say three weeks. There would be a build-up of over 3.5 million m^3 of discharge from the ICW which would be unable to discharge to the River Blackwater. No details are provided as to how this water is to be stored under such a scenario.

In conclusion therefore, I would have concerns that the applicant has failed to demonstrate in the information submitted in the EIS, in the additional information submitted to the Planning Authority and in the witness statement submitted at the Oral Hearing that the ICW is capable of treating effluent from the tailings facility post closure to a sufficient level as to ensure that the residual concentrations in the treated effluent would comply with standards set out in legislation. Furthermore, I am not satisfied that the assimilative capacity calculations presented in the EIS in Appendix 5.1 are based on best practice in terms of calculating assimilative capacity under a 95 percentile flow in the receiving waters. As a result, I am not satisfied that the applicant has adequately demonstrated that there is sufficient dilution available in

the River Blackwater to cater for any discharge from the ICW proposed and that the discharge will not result in an adverse environmental impact on the receiving waters. This issue in my view is particularly pertinent given the fact that the River Blackwater is a designated SAC and SPA. I therefore recommend that the Board adhere to the decision of the Planning Authority and refuse planning permission for the construction of the integrated constructed wetland facility.

10.15. Compensatory Habitat for the Whooper Swan

10.16. Concerns were expressed in the submission from the NPWS that the proposed decommissioning, capping and revegetation of the existing TSF (Stage 5 Area) would result in a loss of an artificial wetland habitat for the Whooper Swan, an Annex I species of the Birds Directive. While the Whooper Swan is a designated Annex I species, the tailings facility itself is not a designated Natura 2000 site and the Whooper Swan is not a qualifying interest of the adjacent River Boyne and River Blackwater SAC. The applicant argues that open waters and ponds associated with the integrated constructed wetlands would provide an appropriate compensatory habitat for the Whooper Swan[3]. While the applicant has proposed additional artificial wetland habitats to be provided as part of the ICW, if the Board are minded to following my recommendation and omit the ICW, such artificial wetland habitat will not be available. However, the new TSF extension in the form of Stage 6 will offer a new footprint of approximately 58 hectares which will provide an alternative habitat for the Whooper Swan in the immediate north of the existing facility. It is estimated that the Stage 6 facility will be in operation for c.15 years. Furthermore, the Board should note and according to the information contained on file (see page 19 of NIS) the capping of the Stage 5 tailings pond area is already consented as part of the decommissioning phase of this facility and therefore the existing wetland habitat on site will be removed in the absence of any decision being made on the current application. As such the removal of the existing wetland habitat at the Stage 5 tailings pond will go ahead regardless of whether or not the current development

[3] The Board should note that any reference here to compensatory measures do not relate to compensatory measures in the context of Article 6(4) of the Habitats Directive but merely relate to the provision of a similar type habitat to that being removed as a result of the capping of Stage 5 of the facility.

takes place. There can be no doubt however that the provision of the Stage 6 tailings pond area will offer an alternative wetland habitat when Stage 5 is capped.

11.0 **Appropriate Assessment**

11.1. As already mentioned in my introduction there are two European sites which would be potentially affected by the proposed development namely:

- The River Boyne and River Blackwater SAC (Site Code: 002299).
- The River Boyne and River Blackwater SPA (Site Code: 004232).

11.2. There are no other designated European sites located within a 15 kilometre radius of the subject site and as such I am satisfied that no other European sites could be potentially adversely impacted upon by the proposed development due to the large separation distances involved.

11.3. At its closest point both the SAC and the SPA are located approximately 1.25 kilometres to the west of the subject site.

11.4. The qualifying interest associated with the SAC are:

- *Alkaline fens.*
- *Alluvial forests.*
- *River Lamprey.*
- *Atlantic Salmon.*
- *Otter.*
- *The sole qualifying interest associated with the River Boyne and River Blackwater SPA is the Kingfisher.*

11.5. An NIS was submitted with the application with an Appropriate Assessment Stage 1 screening exercise. It correctly in my opinion concluded that in the absence of mitigation measures there is potential for adverse impacts on the qualifying interests of European site arising from the proposed development. The potential impact primarily arises from the hydrological connection between Blake's Stream and the Yellow River which is a tributary of the River Blackwater.

11.6. Adverse impacts on water quality could arise as a result of:

- The construction works associated with the extension of the tailings storage facility.
- The operation of the Stage 6 tailings facility.

11.7. With regard to the decommissioning phase of the Stage 6 facility and in particular the operation of the ICW, I have argued in the previous section of my report that the ICW should be omitted on the grounds that I am not satisfied, based on the information submitted that the discharge from the ICW to the River Blackwater will not have an adverse impact on the River and by consequence will not have an adverse impact on the qualifying interest associated with the SAC. For this reason, I recommend that the Board, should it decide to grant planning permission incorporate a condition omitting the ICW.

11.8. With regard to the tailings facility extension, I am satisfied that due to the separation distances involved the proposed facility will not have an adverse impact on the qualifying habitats associated with the SAC namely the alkaline fen and the alluvial forest.

11.9. During the construction phase however there is potential to impact on the aquatic species associated with the river namely the River Lamprey, Atlantic Salmon and Otter. There is potential for water pollution events during the construction phase including elevated suspended solid discharges from surface water run-off and also the potential for hydrocarbon and other oil/fuel spills which would adversely affect water quality downstream. During construction there is also the potential for the introduction of alien invasive plant species which could damage riparian and aquatic habitats during the significant and prolonged earthworks to be carried out on site. The re-diversion of Blake's Stream could also give rise to contamination in terms of increased suspended solids or spillages. Siltation of spawning grounds are a particular risk to salmon. Hydrocarbon spillages can be particularly toxic to fish and any nutrient enrichment as a result of the spillage of fuel or other materials could possibly give rise to oxygen depletion in the receiving waters which would have consequential adverse impacts on the aquatic environment.

11.10. During the operational phase the main threat to the aquatic environment arises from seepage from the TSF through the embankment walls to either surface water or groundwater.

11.11. To combat these potential risks and impacts the NIS and EIS set out a series of mitigation measures aimed to address the potential risks identified to ensure that the qualifying interests are not impacted upon.

11.12. In terms of addressing the potential impact arising from increased levels of suspended solids, all surface water run-off and dewatering discharges will be routed through temporary settlement ponds to promote the settling out of suspended solids. Potential fuel spillages would be addressed by the construction of bunded areas around fuel/oil storage facilities located within the compound and with the use of double skin to fuel tanks. An oil absorbent boom and oil interceptor would be installed at the discharge from the temporary settlement ponds to remove all oil contaminants in the surface water run-off which might arise. It is also proposed that the applicant will develop and implement a comprehensive construction environmental management plan to be implemented by any subcontractors. These will include a Surface Water Management Plan and an Erosion and Settlement Control Plan with regard to the control of the spread of alien invasive species. The applicant has prepared a detailed invasive species management plan which involved various management protocols to ensure the identification and control of any such invasive species. The diversion of Blake's Stream presents an opportunity for the implementation of in-stream enhancement works to improve the ecological structure both in the riparian and in-stream habitats. Any diversion works within the stream will also incorporate the measures referred to above to ensure that no contamination arises.

11.13. During the operational phase a composite lining system described previously in my report will be installed at the base and sides of the tailing facility in order to curtail any seepage to groundwater. Mitigation measures will also include significant levels of water quality monitoring and groundwater monitoring during the construction, operation and decommissioning phase.

11.14. With regard to the impact on the River Boyne and River Blackwater SPA namely the habitat of the Kingfisher, I am satisfied that there is significant separation distances between the subject site and the River Blackwater channel to ensure that the habitat of the Kingfisher along the river corridor will not be disturbed as a result of the works. The main prey of the Kingfisher are fish. If the mitigation measures are properly implemented the proposed development will have no adverse impact on fish in rivers

in the vicinity and as such will have no impact on the feeding regime of the Kingfisher.

11.15. In terms of indirect effects, I do not consider that the proposed development subject to the employment of the appropriate mitigation measures, will have any adverse reduction in terms of water quality or changes in the local hydrology which could negatively impact upon the conservation status of the qualifying interests and therefore it is considered that the risks of indirect impacts arising from the proposed development is negligible.

11.16. In terms of in combination effects, the operation on the existing TSF and to a lesser extent to the on-going mining both have the potential to impact on the water quality of the River Blackwater and the River Boyne. The Board will not however that the existing mined site and the existing tailings storage facility operate under IPPC licence conditions to ensure compliance with various water quality regulations. Cumulative impacts arising from the construction and operation of the Stage 6 together with the existing mining operations are not predicted as no material impacts are anticipated under the proposed operations with the employment of the mitigation measures set out above and the existing discharges require compliance with standards set out in existing discharge licences.

11.17. In conclusion therefore I consider it reasonable to conclude on the basis of the information on the file, which I consider it adequate in order to carry out a Stage 2 Appropriate Assessment that the proposed development individually or in combination with other plans or projects would not adversely affect the integrity of Site No. 002299 or Site No. 004232 or any other European site in view of the site's conservation objectives.

Compensation v Mitigation

11.18. The submission from Mr. Hughes (Counsel of behalf of Mr O Cinneide) requested that the Board be mindful of the fact that compensation measures can only be incorporated into any decision under the Habitats Directive where the Board have invoked the provisions of Article 6(4). Therefore there should be no reference to compensatory measures under appropriate assessment. I fully accept this point and note that the NIS submitted (see below) set out mitigation measure only. It appears that any reference to compensation is made with regard to EIA and not AA.

12.0 **Environmental Impact Assessment**

12.1. I am of the opinion that the EIS together with the additional information submitted on 16th September, 2016 is comprehensive and complies with the statutory requirements set out in Article 94 and Schedule 6 of the Planning and Development Regulations, 2001 (as amended). I am also satisfied that the documents submitted including the non-technical summary are generally in accordance with the requirements set out in the EPA Guidelines as they relate to environmental impact assessment. In my opinion the EIS has identified, described and assessed the likely significant environmental impacts arising from the proposed extension to the tailings facility and the integrated constructed wetlands. I have in the assessment above identified, described and assessed the likely significant effects arising from the proposed development particularly in relation to groundwater and surface water, traffic, air pollution, visual impact and noise impacts. I have referred to where appropriate the quality and content of the EIS in the context of this issues. Where these issues have not been adequately referred to and assessed in my assessment above will be evaluated in the section set out below.

12.2. The EIS sets out details of the project descriptions for both the extension to the existing tailings facility and the ICW. The site preparation works required in respect of both are also set out in the EIS.

12.3. Section 2.6 of the EIS explores alternative options for both the tailings storage facility and the integrated constructed wetlands. One of the appellants argued in the grounds of appeal that alternatives had not been adequately explored as part of the EIA process. It is not a requirement that, in the carrying out of EIA, every possible option is exhaustively explored and evaluated in detail. The applicant in the course of preparing the EIA, and in the witness statement prepared by Mr. Dodds-Smith, provided a robust and comprehensive evaluation of environmental options available to the applicant in considering the proposed extension. The conclusion that a lateral extension to the existing facility in any direction could be an acceptable option but a lateral extension to the north of the existing facility emerges as the preferred option is a reasonable conclusion in my opinion. There is no indication that any other option available would give rise to a lesser environmental impact.

12.4. Section 4 of the EIS deals with terrestrial ecology and sets out details of the existing environment based on botanical and habitat surveys. Fauna surveys were also carried out. The results of the surveys are adequately described in the EIS. Based on the evaluation undertaken it was concluded that the ecological importance of the majority of the habitat is limited and comprises on the whole of improved grasslands and associated habitats and exposed and recolonising bare ground. It is noted that the southern boundary of the proposed development footprint is a significant area for mixed broadleaved woodland. However, there are no habitats listed in Annex I or species listed in Annex II of the Habitats Directive within the proposed development footprint. The main impacts are identified as loss of woodland habitat and loss of pond habitats arising from the proposed development. The loss of woodland habitat is to be mitigated by way of extensive planting. It is also proposed to incorporate a compensatory pond habitat within the north-western corner of the proposed extended tailings facility. On-going monitoring will be undertaken as part of the proposed development specifically in relation to mammals, vertebrate's and birds. I am satisfied that the EIS has identified, described and evaluated the potential impacts arising from the proposed development on terrestrial flora and fauna. I would also agree that with the incorporation of appropriate mitigation measures including compensatory measures as set out in the EIS, that the residual impacts arising from the proposed development would be acceptable during both the construction and operational phases.

12.5. Section 5 of the EIS specifically identifies and evaluates the potential impact of the proposed development on surface water ecology in the surrounding area. The receiving environment is set out in detail. As in the case of terrestrial ecology, field surveys were undertaken to evaluate the impact, type, character, sensitivity and magnitude of the impact. The EIS assesses the potential impact on designated Natura 2000 sites in the vicinity namely, the River Boyne and Blackwater SAC (please see Appropriate Assessment section above). The proposal also assesses the impact of the proposed development on various watercourses traversing and around the site including the Blake Stream, Simonstown Stream and Doug Stream as well as the manmade pond and drainage ditches in and around the site, and the Yellow River which runs along the western boundary of the site. The Blake Stream, Simonstown Stream and Doug Stream were all found to be heavily modified and

channelised with significant siltation and therefore evaluated as being of 'local importance' in terms of ecology. Both the Yellow and Simonstown Rivers were identified as providing suitable habitat for juvenile lamprey, although lamprey species were not recorded during the field surveys.

12.6. The potential impacts were identified for both the construction phase and operational phase. Elevated concentrations of suspended solids are identified as a potential threat during the construction phase, as are accidental discharges and spillages of concentrations of hydrocarbons. Mitigation measures will be put in place to address these potential impacts. In terms of the operational phase, the EIS states that there is a potential impact in terms of contamination through seepage into the groundwater and onwards towards surface water bodies in the area. It is stated that seepage from the current tailings facility is captured and returned back to the tailings pond resulting in a closed water system. Analysis of the current tailings facility indicates that the existing water management measures is ensuring that there is virtually no change in the surface water quality conditions in adjoining rivers particularly the Yellow River and the River Blackwater. It is noted that there is a very slight increase in the physio-chemical concentrations during low flow conditions. However, all parameters remain within acceptable ranges. It is noted that the Yellow River has been receiving base flow with elevated sulphate concentrations for some time. However, the impact on the Yellow River and the River Blackwater downstream of the confluence has been insignificant. The EIS also notes that the proposed Stage 6 extension will incorporate a composite lining system which will significantly reduce any groundwater infiltration.

12.7. The constructed wetland will incorporate a retention pond and a sulphate reducing bio-reactor. Discharge from the constructed wetland will be to the Blackwater River downstream of Liscartan. Assimilative capacity calculations for the proposed ICW show that after treatment discharged waters will meet the necessary regulatory limits for surface waters (please see my comments above in respect of the assimilative capacity calculations at Section 10.14 above).

12.8. The cumulative impacts from both the construction and operational phases are also assessed in the EIS. The EIS sets out extensive mitigation measures which have been proposed together with a detailed monitoring programme to ensure that there is no material deterioration in water quality.

12.9. In respect of aquatic ecology, I am satisfied that the EIS has directly identified and described the potential impacts which could arise as a result of the proposed development. These impacts have been evaluated and assessed. The conclusions that the incorporation of appropriate mitigation measures together with monitoring will not result in any material adverse impact on water quality in the area is reasonable in my view.

12.10. My assessment in respect of the integrated constructed wetland is set out elsewhere in the assessment (S. 10.14). I would have some concern in relation to the assimilative capacities contained in the EIS on the grounds that they are based on 50 percentile flows in the River Blackwater whereas a more precautionary assimilative capacity methodology is normally employed based on 95 percentile flows in the river.

12.11. Section 6 of the EIS relates to baseline air quality surveys together with a review of available EPA air quality data was used to present baseline air quality in the area. The potential impacts identified in terms of air quality mainly arise during the construction period of the facility with fugitive windblown dust identified as a major potential impact. It is noted however that the nearest residential sensitive receptors are located well over 100 metres from the application boundary and therefore are unlikely to be adversely impacted upon as a result of air quality. A series of measures are set out in the EIS in order to minimise fugitive dust generation.

12.12. The potential impacts therefore in terms of air pollution have been correctly identified and described in the EIS and the potential impact which would primarily arise during the construction phase has been adequately assessed in my opinion and the conclusions reached therein in relation to air pollution are reasonable in my opinion.

12.13. Section 7 of the EIS specifically relates to roads and traffic. The Board would be aware that this section of the EIS has been revised where the analysis undertaken is now based on a 5-year construction period as opposed to a 3-year construction period as originally envisaged in the EIS. The roads and traffic analysis undertaken as part of the revised traffic impact assessment adequately describes the existing road network in the area. The TIA undertakes a junction capacity assessment as well as a road link capacity assessment and identifies the likely haul routes for the importation of material to the site for the purposes of construction. I note that the

amount of fill material to be imported has been reduced by approximately 50% from 1.1 million to 0.567 million cubic metres in the revised TIA. This, together with the longer construction period, will result in decreased trip generation to and from the site on a daily basis. The EIS estimates the daily trip generation arising from the construction of the tailings pond and sets out a capacity assessment of the existing road network. As in the case of air pollution, the impacts arising are generally confined to the construction phase as the operational phase will give rise to little trip generation. The environmental impact in terms of traffic and transportation have in my view been adequately identified, described and assessed in the EIS.

12.14. Section 8 of the EIS specifically relates to water and provides a baseline assessment of hydrology and hydrogeology. It incorporates much of the information contained in Section 5 of the EIS which specifically relates to surface water ecology. In terms of hydrogeology, the parameters identified are of potential concern in the TMF are sulphate and magnesium which occur naturally in the tailings water. It is noted that elevated concentrations of these substances have been recorded in groundwater in the immediate vicinity of the TMF. However, the interceptor channel is effectively capturing almost all of the seepage from the existing tailings facility. The potential impacts arising from the proposed Stage 6 development include dewatering as a result of excavation, the diversion of Blake's Stream and further contamination of groundwater. It is noted that a passive treatment system will be developed as part of closure plans for Stage 5 and Stage 6 (ICW). The main potential risk to the water environment continues to be from seepage to the embankment walls and base of the TMF. Mitigation through the design (composite lining etc.) will, according to the information in the EIS, result in a low residual impact. It is stated that impacts post closure will depend on the effectiveness of the interceptor channel and the passive treatment system. The environmental impacts arising from the proposed development on hydrology and hydrogeology have been identified, described and evaluated in the EIS. Subject to appropriate mitigation through design of the tailings storage facility, I would agree that the residual impacts on hydrology and hydrogeology arising from the development would be acceptable.

12.15. Section 9 of the EIS specifically relates to landscape and visual impacts. It describes the receiving environment including landscape significance and it's sensitivity. The EIS includes two zones of theoretical visibility maps as well as a number of

photomontages depicting the extension to the tailings facility. The EIS concludes that the majority of impacts are found to be moderate on the landscape elements, and the general landscape character within the study area. It is also concluded that there will be no visual impact on the vast majority of views within the study area. The Board will note that the conclusions contained in the EIS broadly agree with the conclusions set out in my assessment above.

12.16. Section 10 of the EIS relates to noise and vibration. The noise section of the EIS sets out details of the baseline noise environment. The noise impacts arising from the proposal are identified as construction activity, including the removal of topsoil, the construction of acoustic berms together with road traffic movements to and from the site, and the construction of wetlands and the operation of the facility. The most significant impact will be on the local Milestone Road (L-74141) and its junction with the R163. Typical construction noise levels associated with construction activities are also assessed and are forecasted to be below 55 dB(A). I have argued in my assessment above that in the absence of mitigation measures, noise impacts during the construction phase can be regarded as acceptable having regard to the fact that they are significantly below NRA Guidelines for construction activities. I am satisfied that with the incorporation of appropriate mitigation measures, including the construction of a berm together with the temporary nature of the works to be carried out, that the impact arising from noise during the construction period will be acceptable. A similar conclusion was reached in the EIS in relation to same.

12.17. Section 11 of the EIS relates to human beings. The EIS argues that overall the proposed extension to the TSF will have a positive impact particularly in relation to providing direct and indirect jobs with the potential export benefits to the Irish economy in general. The section details trends in relation to population, employment, tourism and amenities in the wider Navan area and reasonably concludes in my opinion that the development will not have a negative impact on everyday activities and lifestyles of the local population.

12.18. Section 12 of the EIS relates to material assets. In terms of archaeology, the EIS notes that the existing site has been extensively excavated for use in the construction of the existing tailing ponds and has been archaeologically monitored between 1975 and 2012. It is stated that archaeological sites were “archaeologically resolved” for the most part “before clay was removed for the previous extensions to

the tailings facility". Archaeological investigations at the proposed ICW were also carried out. Should any further archaeological material uncovered during the course of works to be undertaken appropriate protocols and mitigation measures will be put in place.

12.19. In terms of soil, vegetation and land use, the EIS states that there will be no new soil or land take from the agricultural landscape as the footprint of the proposed tailings facility will occupy the disturbed areas to the north of the existing tailing pond. It is acknowledged that the ICW will result in the removal of existing agricultural land.

12.20. The final section of the EIS assesses the potential impact of the proposed development on animal fertility and production. It indicates that extensive studies were undertaken in 1995, 2000 and 2007. These studies demonstrated that there have been no discernible adverse effects on the health and productivity of livestock on the study farms and that there is no evidence of increased levels of heavy metals in the soil, herbage or livestock as a result of the proximity to the tailings pond. By extension, it is considered that the potential impact from the proposed extension to the tailings facility would not have an adverse effect on adjoining farms.

12.21. The EIS in my view has adequately identified, described and assessed the impact that the proposed development could potentially have on material assets and the conclusions reached in this respect are reasonable in my view.

12.22. My overall conclusion in relation to the contents of the EIS and the various other submissions by the applicant including the additional information submission and the various submissions at the Oral Hearing is that the information provided in its totality is adequate and comprehensive in the context of EIA and I am satisfied that there is sufficient information on file in respect of this application to carry out a full environmental impact assessment. Furthermore I would agree generally with the conclusions set out in the environmental impact statement that the proposed development would not have a significant adverse impact on the receiving environment either individually or cumulatively, directly or indirectly during the construction or operational phases of the proposed development subject to the employment of appropriate mitigation and monitoring. I therefore consider that the residual impacts arising from same would be acceptable.

13.0 Conclusions and Recommendations

Arising from my assessment above I consider that the proposed Stage 6 extension in the existing tailings pond is acceptable in principle. I consider that the impact arising from the construction phase would be acceptable on the residential amenities of the area and will not give rise to excess levels of noise, traffic or fugitive dust emissions. I am also satisfied that the proposed composite lining system will ensure that any egress of effluent from the tailing facility to groundwater would be minimised and would be acceptable. I am also satisfied that with the employment of appropriate mitigation measures the proposed development will not result in any adverse impact on surface water quality in the vicinity including the River Boyne and Blackwater SAC and SPA. The proposed extension to the tailings facility with appropriate contouring and planting will have an acceptable visual impact on the receiving environment. I would also recommend that the Board upheld Meath County Council's decision to omit the integrated constructed wetland on the grounds that it has not been adequately demonstrated that any discharges from the ICW will not adversely impact on the environmental quality of the receiving waters in the River Blackwater.

14.0 Decision

Grant planning permission for the proposed development in accordance with the plans and particulars lodged and based on the reasons and considerations set out below.

15.0 Reasons and Considerations

Having regard to the presence of the existing tailings facility at Randalstown, it is considered that the proposed extension to the tailings facility would not seriously injure the residential amenities of the area, would not be prejudicial to public health and would generally be acceptable in terms of traffic safety and convenience. The proposed development would therefore be in accordance with the proper planning and sustainable development of the area.

16.0 **Conditions**

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application as amended by the further plans and particulars submitted on the 16th day of September 2016, except as may otherwise to be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to the commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.

   Reason: In the interest of clarity.

2. The integrated constructed wetlands proposed to the south of the existing tailings storage facility shall be omitted and shall be the subject of a separate planning application.

   Reason: The Board is not satisfied that it has been adequately demonstrated that the proposed integrated constructed wetland will not adversely impact on the water quality of the River Blackwater.

3. The development shall be constructed in two phases as indicated in the documentation submitted with the application. No works on Phase 2 (Stage 6(b)) shall commence without fully having completed Stage 6(a). The construction period shall be limited to a period of five years from the date of commencement of works.

   Reason: In the interest of orderly development and to protect the amenities of the area.

4. In the event of the failure of any tailings retaining structure, or pipeline transporting tailings to the facility, all mining operations shall cease and production shall not be recommenced until such time as satisfactory arrangements for the disposal of tailings have been provided and agreed in writing with the planning authority.

   Reason: To minimise the risk of pollution and in the interest of public health.

5. The proposed tailings facility shall only be used for the disposal of tailings associated with the processing of ore mined at Tara Mines unless otherwise permitted by reason of a separate planning permission.

   Reason: In the interest of orderly development.

6. Any changes to the method of mineral extraction or processing which results in a material change to the characteristics of the tailings shall be subject to the written approval of the planning authority prior to those changes being made.

   Reason: In the interest of development management and the protection of the environment.

7. (a) The closure and reclamation of the tailings facility as set out in the closure and reclamation management plan submitted to the planning authority on 27th April 2016 shall be carried out as proposed unless stated otherwise below.

   (b) With 12 months of the commencement of the development and evidence based conservation management plan shall be developed and agreed in writing following consultation with the National Parks and Wildlife Service, Meath County Council and all relevant stakeholders, to address the future management of Tara Mines tailings facility in respect of these species of high conservation value. Proposals shall be incorporated into a revised closure remediation and aftercare management plan (CRAMP) as appropriate.

(c) Notwithstanding the provisions of (a) and (b) above the final details of the closure plan and of its operation after the cessation of tailings deposition shall be subject to an approval by the planning authority. An application for such an approval shall be made to the planning authority not later than two years prior to the predicted cessation of tailings deposition.

Reason: In the interest of the proper and ordered rehabilitation of the site.

8. Where the planning authority considers that the deposition of tailings has ceased for a period in excess of six months and where the developer can offer no reasonable grounds to dispute this opinion, the planning authority shall be empowered to notify the developer of their intention to activate the appropriate closure, remediation and aftercare management plan and of their intention to call upon the financial guarantees offered within 60 days.

Reason: In the interest of orderly development.

9. (a) The applicant shall build the embankment using soils/rock as detailed within the report prepared and submitted by Golder Associates submitted to the planning authority on 16th September, 2016. All material shall conform to the engineering parameters as set out in the aforementioned report.

(b) Prior to the commencement of development the applicant shall submit details of a completed slope stability report for the written agreement of the planning authority and prepared by a competent chartered geotechnical engineer detailing, but not limited to, site characterisation, groundwater conditions, geotechnical parameters (for all proposed materials), mechanisms of movements and external influences. The report should address a number of scenarios regarding potential failures and also include details of the proposed slope stability monitoring for Phases 1 and 2 of the development (Stage 6(a) and 6(b)).

(c) The applicant shall employ, at a minimum, the construction quality assurance team as detailed in Section 2.7 of the report prepared by Golder Associates and submitted to the planning authority on 16th September, 2016.

(d) The applicant shall take account of the installation of the permanent ramp and the installation and removal of any temporary ramps in embankment design and slope stability calculations.

(e) The applicant shall retain the services of a geotechnical engineer for the duration of the project. The geotechnical engineer shall submit a monthly geotechnical report on the embankments construction and a final report on completion to the planning authority.

(f) The applicant shall provide to the planning authority a yearly integrity and stability report of the embankment and this assessment shall be undertaken by a qualified geotechnical engineer.

(g) The applicant shall maintain a soils testing regime to ensure compliance with the parameters of the stability analysis and adopt and communicate to relevant personnel a method statement detailing the placing of the various materials within the embankment structure.

(h) The applicant shall submit to the planning authority an annual report detailing the integrity and stability of the embankment and this report shall be prepared by a qualified geotechnical engineer.

(i) Prior to the commissioning of the Stage 6 lateral extension, a certificate from a suitably qualified independent consultant engaged by the developer confirming the structural soundness and stability of the extended tailings dam shall be furnished to the planning authority. This certification shall be based on an independent audit of the design, construction and operation of the proposed tailings dam. This audit shall be carried out in line with the procedures included in the UK Reservoirs Act 1975 or equivalent and the appointed consultant shall be a member of the UK Reservoir Panel or other equivalent with proven experience in the design, operation and inspection of tailings dam.

Reason: To provide for the independent certification of the proposed dam and in the interest of public safety and public health.

10. (a) Within 3 months of the completion of both phases of the proposed tailings facility, the developer shall submit to the planning authority a certificate from an independent consultant confirming that the works have been satisfactorily completed and are structurally sound and suitable for the purpose for which they were designed. Annual inspection and certification of the continued operation of the tailings dam shall be carried out by the developer's engineer who shall be a member of the UK Reservoir Panel or equivalent and shall be submitted to the planning authority. This certificate shall be based on an independent audit of design, construction and operation of the proposed tailings dam. The audit shall be carried out in line with procedures included in the UK Reservoirs Act 1975 or other equivalent and the appointed consultant shall be a member of the UK Reservoir Panel or other equivalent with proven experience in the design, operation and inspection of the tailings dam.

(b) A further certificate from an independent consultant engaged by the developer certifying the continued structural stability and suitability of the tailings storage facility shall be furnished to the planning authority annually from the date of the initial certification. This certification shall be based on an independent audit of design, construction and operation of the proposed tailings dam. This audit shall be carried out in line with the procedures included in the UK Reservoirs Act 1975 or other equivalent and the appointed consultant shall be a member of the UK Reservoir Panel or equivalent with proven experience in the design, operation and inspection of the tailings dam.

(c) In the event of any of the above certificates not being provided within the time specified or such extension thereof as may be permitted by the planning authority, the developer shall cease the discharge of tailings to

the dam pending receipt by the planning authority of the appropriate certificate.

Reason: To provide for independent certification of the proposed dam in the interest of public health and safety.

11. (a) Prior to the commencement of development the developer shall submit to the planning authority a programme for the construction of the dam extension which shall include details of the proposed timing of each element and phase of the construction process.

(b) The developer shall submit to the planning authority, at six monthly intervals, a schedule of production output for the previous six months and projected production output for the following two years. The schedules shall include as a minimum, value for ore mined, total lead and zinc concentrations produced and total tailings generated at Tara Mines.

Reason: To provide assistance to the planning authority in the planning, monitoring and management of the facility.

12. (a) The applicant shall install and test the lining system components as detailed in Section 2.6 of the report prepared by Golder Associates and submitted to the planning authority on the 16th September, 2016.

(b) The applicant shall ensure that all personnel involved in the welding of the HDPE liner shall hold a certificate for welding and installation of flexible membrane liners to third party accreditation such as the British Geomembrane Association or the Thermal Welding Institute.

(c) The applicant shall comply with the quality control assurance measures and protocols as detailed in the report submitted by Golder Associates submitted to the planning authority on the 16th September, 2016.

(d) The applicant shall carry out a leak detection survey as detailed in Section 2.8 of the report prepared by Golder Associates and submitted

to the planning authority on 16th September, 2016. The applicant shall remedy any defects found on foot of the leak detection survey.

Reason: In the interest of public safety and the protection of the environment.

13. Prior to the commencement of development, the developer shall establish a fund dedicated to providing for the full cost of the closure, remediation and management plan as set out in the report submitted with the planning application and as modified by the following conditions.

    This fund shall include but shall not be limited to the provision of:

    (a) The closure and rehabilitation of the tailings facility and the site in the event of any of the enforced closure scenarios as set out in the closure, remediation and management plan.

    (b) The planned final closure and remediation of the tailings facility as set out in the closure remediation and management plan.

    (c) The amount of the fund shall at all times be sufficient to meet the costs of rehabilitation of all extant works and impacts (whether existing or predicted) to the satisfaction of the planning authority. The fund shall be sufficient without reliance on the value of plant equipment or other such assets.

    (d) The developer shall provide security in order to guarantee the availability of the fund in the event of financial failure or other default. The type of security and its means of release/recovery shall be agreed with the planning authority in consultation with the Environmental Protection Agency and the Department of Communications, Climate Action and Environment. It shall be irrevocable and shall be expressly designated to the planning authority, the Environmental Protection Agency and the Department of Communications, Climate Action and Environment as beneficiaries in the event of the developer being unable to implement the closure, remediation and management plan or any of the enforced early closure plans envisaged therein. The security shall be maintained for the

duration of the development including final rehabilitation and closure of the site as certified in writing by the planning authority.

(e) The amount of the fund shall be agreed in writing with the planning authority in consultation with the Environmental Protection Agency and the Department of Communication, Climate Action and Environment within six months of the final date of this grant of planning permission. It shall be indexed in accordance with the Wholesale Price Index Building and Construction (Capital Goods) as published by the Central Statistics Office. In default of an agreement the amount of the fund shall be determined by An Bord Pleanála.

(f) No development shall commence on the Stage 6 extension until agreement in writing is reached on the amount of this fund with the lead agencies of the Environmental Protection Agency, Meath County Council and the Department of Communications, Climate Action and Environment.

Reason: To ensure the satisfactory completion of the development and to provide for the proper rehabilitation of the site post closure.

14. Prior to the commencement of development, the applicant shall develop a site specific construction and environmental management plan (CEMP) and as a minimum shall include the items included within Appendix D of the report prepared by Golder Associates submitted to the planning authority on the 16th September, 2016. This report shall be submitted for the written agreement of the planning authority. The report shall include detailed groundwater/surface water management plans for the duration of the works with particular reference to the installation of the lining system. The CEMP shall be treated as a live document and updated as necessary. It shall be communicated to all personnel involved in the construction of the tailings storage facility.

Reason: In the interest of orderly development.

15. Construction and demolition waste shall be managed in accordance with a construction waste and demolition management plan, which shall be submitted to, and agreed in writing with, the planning authority prior to the commencement of development. This plan shall be prepared in accordance with the "*Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects*" published by the Department of the Environment, Heritage and Local Government in July, 2006. The plan shall include details of the waste to be generated during site clearance and construction phases and detail the methods and locations to be employed for the prevention, minimisation, recovery and disposal of this material.

Reason: In the interest of sustainable waste management.

16. (a) All temporary stockpiles of overburden materials which are to remain intact for periods longer than six months shall be graded, top-soiled and grass seeded as soon as practicable after being constructed. Dust suppression sprays shall be used during periods of dry weather until stable grass covering has been established on the stockpiles.

(b) All permanent embankment side slopes shall, unless otherwise agreed with the planning authority be top-soiled and grass seeded as soon as practicable after their construction. Dust suppression splays shall be used during periods of dry weather until a stable grass covering has been established.

Reason: To minimise nuisance to the public from dust.

17. (a) An effective water spray system for the control of fugitive airborne dust from the tailing storage facility shall be provided, details of which shall be agreed in writing with the planning authority prior to the commencement of development.

(b) The extent and details of wind break fencing to be provided to control the emission of dust shall be agreed in writing with the planning authority prior to the commencement of development.

Reason: To minimise nuisance to the public from dust and to minimise the risk of pollution to the environment.

18. Within three months of the commencement of the development the developer shall submit to the planning authority for written agreement an action plan to be implemented in the event that excessive seepage arises from the tailings storage facility. What constitutes excessive seepage shall be the subject of a written agreement between the applicant and the planning authority prior to the commencement of development. Such a plan shall include but shall not be limited to proposals for an alarm system to alert the developer of seepage over and above the agreed acceptable limit.

Reason: In the interest of prevention of pollution.

19. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist within the site. In this regard, the developer shall -

(a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development,

(b) employ a suitably-qualified archaeologist who shall monitor all site investigations and other excavation works, and

(c) provide arrangements, acceptable to the planning authority, for the recording and for the removal of any archaeological material which the authority considers appropriate to remove.

In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that may exist within the site.

20. All service lines and cables servicing the proposed development shall be located underground except where otherwise agreed in writing with the planning authority.

Reason: In the interest of orderly development and visual amenity.

21. Maintenance strips of a minimum width of 10 metres shall be maintained along the Duog Stream, the Simonstown Stream, the Yellow River and the diverted Blake's Stream and any other drainage channels shall be secured on both sides of the channel during and after construction. The drainage channels shall be maintained in accordance with the "*Guidelines on the Protection of Fisheries during the Construction Works in and Adjacent to Waters"* published by Fisheries Ireland in 2016 by the contractor during construction works.

Reason: In the interest of protecting water quality.

22. Prior to the commencement of development, the applicant shall submit details of all oil and fuel storage tanks, hydrocarbons, chemicals and all other materials that pose a risk to waters if spilled for the written agreement of the planning authority. These shall be stored in designated storage areas which shall be bunded to a volume of 110% of the capacity of the largest tank or container within the bunded areas. Filling and draw off points shall be located entirely within the bunded areas. Drainage from the bunded area shall be diverted for collection and safe disposal. The use of bunded pallets for the storage of drums etc. is acceptable.

Reason: In the interest of public safety.

23. A wheelwash facility shall be provided adjacent to the site exit. The location and details of which shall be submitted to and agreed in writing with the planning authority prior to the commencement of development.

Reason: In the interest of traffic safety and convenience and to protect the visual amenities of the area.

24. The Tara Mines Emergency Response Plan shall be updated to include Stage 6 of the tailings storage facility.

    Reason: In the interest of public safety.

25. Prior to the commencement of development, the applicant shall submit a revised landscaping plan to include proposals for landscaping along the western boundary of the site and further details in relation to landscaping along the Milestown Road (L74141) for the written agreement of the planning authority.

    Reason: In the interest of visual amenity.

26. (a) The applicant shall bear full responsibility for the costs associated with overlays due to any damage incurred on the R163, R162, R147 and N51 and any additional safety measures to be carried out at Kilberry Cross arising from traffic associated with the development. This will be based on the structural assessment carried out by the pavement management system limited before and after the development to be carried out in conjunction with the local authority.

    (b) The applicant shall be responsible for the cost of repairing any structural road defects arising from the development.

    (c) The applicant shall meet with the Transportation Department of Meath County Council annually to monitor and address progress and issues in relation to traffic and road safety which may arise during the year.

    (d) The applicant shall establish a liaison committee with local residents' groups to address roads and mobility issues which may arise over the five-year construction term. Details of same shall be submitted for the

written agreement of the planning authority prior to the commencement of development.

(e) The applicant shall apply for a road opening licence for all works on the public road prior to the commencement of development.

Reason: In the interest of traffic and pedestrian safety.

27. The developer shall pay to the planning authority a financial contribution of €150,000 as a special contribution towards the expenditure to be incurred in respect of the cost of implementing safety measures at Kilberry Cross under Section 48(2)(c) of the Planning and Development Act 2000. This contribution shall be paid prior to the commencement of development or in such phased payments as the planning authority may facilitate. An application of indexation required by this condition shall be agreed between the planning authority and the developer or in default of such an agreement the matter shall be referred to An Bord Pleanála to determine.

Reason: It is considered reasonable that the developer should contribute towards the specific exceptional costs which are incurred by the planning authority which are not covered in the Development Contribution Scheme and which will benefit the proposed development.

28. The developer shall pay to the planning authority a financial contribution as a special contribution under section 48(2)(c) of the Planning and Development Act 2000 in respect of works to be carried out at Sillogue Bridge to improve pedestrian and vehicular safety in the vicinity of the bridge. The amount of the contribution shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála for determination. The contribution shall be paid prior to the commencement of development or in such phased payments as the planning authority may facilitate and shall be updated at the time of payment in accordance with changes in the Wholesale Price Index – Building and Construction (Capital Goods), published by the Central Statistics Office.

Reason: It is considered reasonable that the developer should contribute towards the specific exceptional costs which are incurred by the planning authority which are not covered in the Development Contribution Scheme and which will benefit the proposed development.

29. Prior to the commencement of development the developer shall pay to the planning authority a sum of money to be agreed in writing with the planning authority following a structural assessment to be conducted by the pavement management services group as a special contribution towards the expenditure to be incurred by Meath County Council in respect of the costs of the works necessary for the overlaying of the Milestown Road and Regional Roads R162, R163 and R147 as well as the N51 in the vicinity of Navan Town to facilitate the proposed development. The charge herein referred to shall apply for the period from the date of this permission to the 31st December, 2017 and will be subject to review on that date and to an annual review thereafter unless previously unpaid.

Reason: In the interest of traffic safety.

Paul Caprani,
Senior Planning Inspector.

27th April, 2017.

APPENDIX 1

Summary of the Proceedings of Oral Hearing (Full Recording of the Hearing contained on File)

Opening Statement by the Inspector

The Oral Hearing commenced with an opening statement by the Inspector setting out procedures to be adhered to at the hearing, the proposed agenda for the hearing, and a roll call of attendees at the hearing. The Inspector then called upon the applicant to commence his formal submission.

Submission on behalf of the Applicant (not necessarily in the order presented in the oral hearing)

Mr. Rory Mulcahy, Barrister-at-law and Counsel on behalf on the applicant, gave a brief overview of the proposed development and proceeded to introduce the various experts which would give witness statements at the hearing. He first called upon Mr. Pascal Walsh the Health, Safety and Environmental Office of Boliden Tara Mines to present his witness statement.

Witness Statement of Mr. Pascal Walsh on the Background to the Proposal

This submission outlined the history of the existing tailings storage facility and of the mine itself. It notes that the storage facility was initially established in the early 1970s. The submission goes on to outline the importance of the mine in terms of the local and national economy. The statement notes that at present between €65 and €70 million is generated by the mine into the local community annually. In terms of interactions with the local community it states that the applicant endeavours to maintain good relationships with the local wider community. The environmental team attend regular meetings with representatives of the local community and the applicant gives approximately €60,000[4] annually to local charities, community events and community projects. The applicants undertake detailed monitoring and environmental controls on site and environment reports are prepared annually for the EPA as part of the licence requirements associated with the facility. The submission also makes reference to the proposed integrated constructed wetland and states that

[4] €100,000 was mentioned elsewhere in the documentation.

the ICW design is based on proven technology and that the technology and design mimics that of a successfully operational ICW at Galmoy lead and zine mines in County Tipperary. It is considered that the integrated constructed wetlands approach is more sustainable in the long term.

It is stated that the extension to the TSF is necessary to enable mining activities to continue beyond 2020. The proposed development is designed for a period of at least 10 years beyond 2019. Further storage capacity is therefore urgently required to facilitate mining activity beyond 2019.

Finally, the submission sets out details of possible alternatives in terms of the further vertical extension to the existing facility, alternative locations and alternative processes. It is stated that the current application before the Board is the most appropriate solution.

Witness Statement of Roger White on the Design of the TSF.

This statement specifically deals with the tailings storage facility design. The submission details the witness's qualifications and experience and states that he has been involved in the design of tailings facilities at Tara Mines, Galmoy Mines, Lisheen Mines and Aughinish Alumina Limited. The submission states that Mr. White is directly responsible for the design of the Stage 6 TSF. The submission goes on to outline details of the design and construction of the Stage 6 facility. Details of the composite lining facility as set out and it isstated that the composite line facility constitutes the best available technology for the storage of tailings. It is also noted that a leak detection survey will be incorporated in the construction of the facility. Seepage from the TSF will be controlled by the low permeability composite lining system and the low permeability of the tailings retained by the facility. A stability analysis for the new cell was carried out using appropriate slope stability software. The stability analysis indicates that the proposed embankment walls have an adequate factor of safety and that the modelling conditions meet all international standards. Groundwater monitoring will be undertaken using piezometers and monitoring wells at five locations. It is concluded that the proposed storage facility has been designed using best available technology to minimise seepage and is a very similar design to that undertaken in the Lisheen Mines which has been successfully filled and decommissioned.

Witness Statement of Mark Dodds Smith

This submission specifically deals with the environmental analysis of alternative options. Mr. Dodds Smith stated that he was directly responsible for the evaluation of alternative options set out in the EIS. A total of five options were considered including:

- Reducing the quantity of tailings requiring disposal, however this was discounted on technical grounds.
- Changing the method of tailings disposal from conventional deposition to one based on paste technology. Again this option involved a number of technical constraints and negative environmental impacts which rendered this option unsuitable.
- The raising of the existing facility vertically to create additional storage. It is stated that this option does not meet the current anticipated requirements as it occupies a progressively smaller surface area.
- Extending the facility latterly to create additional storage. It is stated that in principle a lateral extension in any of the four directions is technically feasible.
- The construction of a tailings pond at a new location would require the acquisition of a large parcel of land and the new location would also require suitable road access and power supply.

The submission goes on to address specific concerns in respect of issues raised in relation to alternatives in the third party appeal. It concludes that the analysis of alternatives suggests that a lateral extension to the existing facility in any direction could be an acceptable option but a lateral extension to the north of the existing facility emerges as the preferred option. There is no indication that any other option available would give rise to a lesser environmental impact.

Witness Statement. Mr. Stephen Ward, Town Planning and Development Consultant

The statement contains a brief overview of the site location and description, a review as to how the proposal complies with national regional policy and conforms with local planning policy and development management requirements. The submission also

sets out the Planning Authority assessment of the proposal together with internal and external responses and details of the decision and conditions attached. In relation to Condition No. 2, the applicant would request that in the event that planning permission is granted by An Bord Pleanála, Condition No. 2 be altered so it cannot be mistakenly interpreted as inferring the five-year period incorporates both the construction and operational periods.

The final section of the submission specifically addresses concerns raised in the third party appeals submitted. In conclusion it is stated that the proposed development is a logical and essential extension to the existing permitted facility and the development meets all relevant development management requirements and local and regional policy requirements referred to in the submission.

Mr. Brendan O'Reilly Acoustic Consultant, witness statement in respect of noise and vibration.

It states that the key issues in relation to noise impact will arise from the construction phase and increased traffic flow along the local network. The submission notes that noise limits are already in place as per Condition 5 of the Industrial Emissions Licence. In terms of construction noise it is noted that there are no mandatory noise limits for construction in Ireland. Reference is however made to the limits set out in the NRA Guidelines and these are set out in the submission. In terms of construction it is stated that the highest predictive noise levels will be less than 55 dB(A) and will be typically less than 50 dB(A). In terms of road traffic noise generated by the proposed development, it is stated that the most significant impact will be on the L-74141 from the T junction with the R163 to the entrance of the development site where the maximum increase in levels along this route will be in the order of 6 dB(A) during peak periods. Noise levels at all other locations will be increased by between approximately 0.5 and 3 dB(A). Finally, the submission sets out the mitigation measures which will be employed. It is also stated that any impacts associated with noise generated from the road traffic will be short-term and of marginal impact on dwellings.

Witness Statement of Sharon Connolly, Roads and Transportation.

The submission sets out the anticipated impact arising from the proposed development based on the original three-year construction timeframe. The second

part of the submission specifically identifies the impacts resulting from the revised changes set out in the TIA submitted to the Planning Authority by way of additional information. Most notably the amount of material to be imported was reduced from c.1.1 million cubic metres to 0.57 cubic metres. All other material will be sourced on site. Furthermore, the construction period has been broadened from three years to five years with a consequential lesser impact in terms of trip intensity. Under the new operating scenario, it is estimated that approximately seven HGV trips will arrive and depart on site during the AM and PM peak based on a 40-hour working week. If the working week is reduced to 35 hours, the number of vehicles arriving and departing will increase from 7 to 9. The submission goes on to specifically address third parties concerns in relation to traffic volume, the suitability of the traffic survey and concerns in relation to inadequate carriageway width and road surface as well as safety issues for motorists, pedestrians and cyclists. Finally, it is stated that the applicant will commit to comply with Conditions 14 and 15 of the notification of the grant of planning permission which relates to traffic measures.

Dr. Patrick Moran, Witness Statement on Terrestrial Ecology.

This submission sets out the key findings with regard to terrestrial ecology on site and the summary of predicted impacts as well as measures proposed to mitigate against predicted impacts. The submission goes on to specifically address concerns raised in relation to terrestrial ecology in third party submissions to the Board. The submission concludes that in respect of terrestrial flora and fauna the footprint of the proposed development is of limited ecological value consisting primarily of heavily disturbed, low- ecological-type habitats. The submission suggests that the habitats that will be provided as a by-product of the proposed development will be of high local and potentially regional importance with regard to ecology. While small areas of habitat of ecological value such as the area of mixed broadleaved woodland and adjacent pond will be lost during the proposed development, the mitigation measures proposed which include largescale planting of native trees will more than compensate for the loss of these habitats. It is considered that the proposal will result in an increase in biodiversity of both flora and fauna and the habitats provided will be linked via several major ecological corridors and will provide a stepping stone habitat for numerous species of conservation concern. In the absence of human

disturbance and intensive agricultural management the area will result in a wildlife refuge.

Witness Statement of Ms Laura Kennedy on Aquatic Ecology

Ms. Laura Kennedy was then invited to address the hearing in respect of aquatic ecology. The submission outlined the key issues in relation to aquatic ecology, flora and fauna and specifically addressed various concerns in relation to same submitted by third parties. In relation to concerns that the tailings storage facility is leaking, it is stated that the TSF facility is considered to be compliant with the requirements Water Framework Directive as it is not resulting in the deterioration of the status of water quality in the vicinity. While the Yellow River has been receiving base flows with elevated sulphate concentrations for some time, the overall impact on the Yellow River and the Blackwater downstream are considered to be insignificant. The assimilative capacity of the River Blackwater has been modelled for groundwater discharge and the results indicate that there is virtually no change in surface water quality during high or medium flows. There is a very slight increase in the physio-chemical concentrations during low flow conditions. However, all parameters remain within acceptable ranges. It is concluded therefore that no significant impacts have been identified furthermore extensive mitigation measures have been proposed in tandem with monitoring to ensure compliance limits are not exceeded.

Mr. Caolan Harrington, Witness Statement on the proposed Integrated Constructed Wetland.

This submission sets out details of integrated wetland construction technology and argues that the ICW is a comprehensive ecosystem based approach and the most appropriate passive treatment system for the interception of management of all run-off associated with the post-closure phase on the tailings facility. The construction and operation of the ICW will provide sustainable and efficient treatment of all mine influenced water and will not negatively impact on surrounding terrestrial or aquatic environments and will assist in invigorating important eco-systems which have been lost in the area. It is noted that ICWs have been used for a wide range of wastewater treatment types in Ireland and has proven to work flawlessly. A number of case studies where ICW treatment has been successfully used are referred to in the submission.

Jane Sladen, Witness Statement on hydrology and hydrogeological issues.

This submission details the key issues in relation to hydrogeology and addressed concerns raised in third party appeals specifically in relation to seepage from the existing TSF, the leaching of hazardous substances and potential risk to the aquifer. The submission notes that the tail mining's are classified as non-hazardous under the European Waste Code. It states that the main risk to the water environment is from seepage through the embankment walls and base of the TSF. Concentrations fluctuate but it is considered that the interceptor channel is effectively capturing seepage from the tailings storage facility. An annual water quality monitoring review is being undertaken in accordance with the industrial emissions licence. The proposed composite lining system for the proposed Stage 6 extension will ensure that seepage will be contained within the extended area.

The submission also deals with the issue of flood risk and it is stated that a site specific flood risk assessment was carried out as part of the response to the further information request and it concluded that the proposal would not result in any adverse impact on the hydrological regime of the area.

Dr. Brian Sheridan, Witness Statement on Air Quality.

The submission sets out details of the monitoring which is currently undertaken as part of the development including details of the monitoring techniques currently used in assessing air quality. Details are provided in respect of a variety of air quality parameters including benzene and toluene, nitrogen dioxide, sulphur dioxide, carbon monoxide and particulate matter. In relation to the latter, it is stated that there have been no exceedance above 50 µg per m^3 over the measurement period between 2010 and 2015. Details of the monitoring undertaken at the various directional dust gauges around the facility are also set out. The report outlines the mitigation measures that will be employed during the construction and operation of the facility which will help control fugitive dust emissions in the area. It is concluded that, based on the results of the monitoring regime, the existing tailings facility does not give rise to any significant air quality impact and complies with relevant regulations pertaining to air quality. It is also concluded that the proposed extension will not result in any significant change to air quality in the vicinity.

Ann Merkle Witness Statement on the Landscape and Visual Impact arising from the development.

This submission details the key issues in relation to landscape and visual impact. The submission concludes that there would be no visual impact on the vast majority of views within the study area due to the abundant intervening vegetation as well as topography. In a small number of locations, the visual impact will range from moderate/minor to moderate/major. The major impact will be reduced with the implementation of the closure, restoration and aftercare management plan. In order to improve the appearance of the proposed facility particularly from locations to the immediate north of the site, it is proposed to plant a woodland belt along the northern boundary as an additional mitigation measure.

Mr. Padraic Cregg Witness Statement on the Natura Impact Statement

The submission specifically addressed concerns raised in third party appeals in respect of invasive species and the effect of pollutants on local wildlife and animals. It states that the proposal has been evaluated with regard to the designated Natura 2000 sites within the wider study area. Potential significant effects on the qualifying interests of the River Boyne and River Blackwater SAC and the River Boyne and River Blackwater SPA have been evaluated with specific reference to water quality impacts affecting Annex II listed River Lamprey, Atlantic Salmon and indirectly the Annex II listed species Otter and the Annex I listed Kingfisher. It is stated that with the successful implementation of mitigation and monitoring measures as set out in the NIS, and the response for further information, it is considered that the proposed development either alone or in combination with other plans or projects will not result in significant adverse effects on the integrity of European sites in view of the site's conservation objectives.

James Crilly, Witness Statement on Animal Health and Food Safety.

It is stated that between 1995 and 2015, four animal health surveys have been carried out on farms adjacent to the Randalstown TSF. These studies have consistently demonstrated that there has been no discernible adverse effect on health or productivity of livestock on the study farms and there is no evidence of

increased levels of heavy metals in the soil herbage or livestock as a result of the land's or livestock's' proximity to the tailings pond. In terms of water pollution, it is stated that domestic wells in the vicinity are routinely monitored and have been found to be within acceptable regulatory limits set down by relevant legislation and guidelines.

Periodic monitoring of heavy metals particularly cadmium in blood, milk and animal tissues of livestock are also assessed and to date there is no evidence of toxicity occurring. Periodic animal health surveys together with animal studies carried out on site provide an objective and transparent characterisation and assessment of potential animal health and food safety risks. Tara Mines was one of the first companies to include periodic animal health studies as an integral part of the environmental monitoring programme. The studies have demonstrated that there has been no discernible adverse effects on health or productivity of livestock or evidence of any increase levels of heavy metals in the soil, herbage or livestock as a result of the proximity to the tailings pond.

This submission concluded the formal submissions on behalf of the applicant to the Oral Hearing.

Questioning of the Applicant

Mr. Frank Burke on behalf of the local residents' action group put a number of questions and made a number of comments in relation to the traffic impact assessment carried out. Mr. Burke asserted that the traffic impact assessment was inadequate in that it underestimated considerably the number of trips which would be generated by the proposed development and the capacity of the road network to accommodate these trips. Specifically, it was argued that the number of trucks delivering materials to the development were seriously underestimated on the basis that the trucks in question would not be able to hold the large volumes of materials as suggested in the TIA. It was suggested that most of the material would be delivered particularly from the Slane area in the form of rigid HGVs as opposed to the large articulated trucks. The former trucks are limited in the volume of material they hold. This would give rise to significant adverse impacts in terms of traffic generation.

It is further suggested that the traffic arising from the proposed development will have a significant adverse impact on the capacity of a number of junctions not least of which is the “O junction” in Navan town which is currently operating at over capacity.

Concerns were also expressed that Meath County Council’s condition requiring a structural survey of the integrity of the road before and after the construction of the development was not appropriate and was insufficient in that the HGV movements associated with the construction phase will contribute to the deterioration of the structural integrity of the roadway. However, this will not be apparent in the survey work undertaken. Some discussion also took place as to whether or not the surveys were undertaken during school periods. However, the applicant maintained that on the day of the survey schools were operating as normal.

Mr. O’Cinneide suggested that the southern entrance to the tailings pond could be used for traffic egressing from the facility after delivering materials. He argued that this would have significant benefit for residents along the R163 in the vicinity of the site. Mr. Gibney on behalf of Meath County Council however objected to the use of this entrance as it would bring traffic through significant residential areas in the north-western environs of Navan and would also bring heavy articulated trucks in the vicinity of St. Paul’s School.

Mr. Joe O’Reilly of Wolfe Tones Gaelic Club (appellants) asked a number of questions in relation to the costings to be undertaken for the road improvement works to be carried out at Kilberry Cross and suggested that any such works to be undertaken by Meath County Council should be the subject of public consultation. Mr. Gibney on behalf of Meath County Council indicated that the financial contribution to be levied on the developer for works at Kilberry Cross (€100,000) will enable footpaths to be constructed along the R162 for a distance of approximately 130 metres north and south of the junction and will also allow for the construction of a bus lay-by along the R162.

The Residents’ Action Group (appellants) also suggested that the applicant should pay for road safety measures which will address the existing bend on the R163 which is currently considered to be very dangerous. Other questions put to the applicant in relation to roads suggested that there was no detailed inspection of

bridges and culverts and how they may be affected as a result of the traffic arising from the development.

Mr. Sweetman put a number of questions to the applicant in relation to air monitoring and suggested that baseline studies should not be based on the existing tailings facility but should be based on a greenfield site. It was also suggested that fugitive dust and particulate matter could be impacting on silage production in the vicinity of the site.

With regard to the amount of materials being sourced for the proposed embankments around the TSF, it was suggested that the amount of material available on site may have been underestimated and that the applicant would be required to import more material than suggested in the further information response.

In relation to the validity of the planning application, it is suggested that no valid map was submitted outlining the applicant's entire landholdings. Furthermore, it was suggested that the absence of the pipeline route from the Tara Mines facility to the tailings facility at Randalstown, would also invalidate the planning application. The appellants argued that details of the pipeline extension to discharge tailings into the Stage 6 facility are also not contained on file. No details are provided in relation to all the pumping stations for Stage 6. In response the applicant stated that this information is available on page 73 of the EIS.

With regard to landscaping, many of the third party appellant's express concerns that a number of trees have been chopped down near the entrance to the facility and therefore the applicant rather than augmenting landscaping in the area is removing woodland which exacerbates the visual impact.

In response the applicant stated that these trees were cut down on foot of recommendations from an arborist report (copy of which was submitted to the Board at the Oral Hearing and is included in the pouch containing the submissions on behalf of the applicants). The report suggests that the trees required to be removed were as a result of storm damage which affected the stability of the trees in question. The third parties express a number of concerns in relation to the visual impacts from the proposed development.

A number of environmental issues were also raised in relation to sulphate levels in the groundwater which may be resulting in impacts on fish.

Concerns were expressed that the importation of material would result in invasive species being brought into the area. A number of questions were asked in respect of groundwater displacement arising from the Yellow River.

Questions were put to the applicant's experts in relation to aquatic and terrestrial ecology and third parties also expressed concerns in relation to excessive noise generation which would arise as a result of the proposed development.

It was suggested that the diversion of Blake's Stream through the site could result in additional discharges into the Yellow River which would exacerbate flooding.

In respect of animal health, a number of third parties stated that they were not convinced with the information contained on file that the existing and proposed development, particularly through airborne dust deposition, was not adversely impacting on animal health. Concerns were expressed that veterinary reports carried out by the applicants in respect of livestock in the area were not made available to the public, and in particular the owners of the livestock.

In relation to archaeology Meath County Council were asked to express an opinion as to whether or not there was any concern that the proposed development could impact on the historic setting of the Toltan Games which is located approximately 2.5 kilometres to the east of the subject site. The heritage officer on behalf of Meath County Council stated that she had no concerns in this regard.

This concluded the questionnaire and cross-examination of the applicant's experts.

Planning Authority's Submission to the Oral Hearing

The planning inspector then called upon the Planning Authority to make a formal submission to the hearing. The Planning Authority indicated that it did not wish to make a formal submission to the hearing but was happy to answer any questions which may be put to it by any of the parties concerned.

Third Parties Submissions to the Oral Hearing

The inspector then requested third parties and observers to make submissions to the hearing.

Submission from Fiacra O'Cinneide

Mr. O'Cinneide only read part of his submission into the record during the proceedings of the Oral hearing. However, for completeness it is summarised below.

Concerns are expressed in relation to traffic and while Meath County Council have required Tara Mines to reduce peak traffic to 20 movements per hour, the community have to endure HGV movements for a prolonged five-year period as opposed to a three-year period. Concerns are expressed in relation to vehicles overturning on the R163 dangerous bend. The proposal could impact on Stackallen National School and Childcare Centre. It is suggested that the Windtown Road, which provides a southern entrance onto the tailings facility, could be utilised and this would reduce the traffic for residents along the northern access route by 50%.

It is suggested that a fund should be created for community benefit. It is not unusual for companies to set up community game funds for major planning applications. Reference is made to Bord na Mona and the Drehid facility in County Kildare where over 300 grants with a total value of €2 million were awarded to community groups and other such organisations. It is suggested that there has been very poor, if even disrespectful community engagement by Tara Mines. It is contended that meetings held by the local committee with Tara Mines were nothing more than a "box ticking exercise".

It is contended that leakage from the tailings dump has resulted in massive increases in sulphate levels in the groundwater (see map attached to Mr. O'Cinneide's submission). The tailings dump is leaking and has failed in its ability to operate within planning conditions.

It is suggested that the further extension of the Tara Mines facility into the "Tara Deep" Mines will result in the need for an additional tailings facility. Tara Mines had already indicated to the local community that there will be no further vertical extension to the tailings dump.

With regard to considerations of alternatives, Tara Mines previously stated that it was proposed that the volume of tailings to be backfilled into the mine would rise from 50% to 71% thus the amount of material being transported to the tailings dump would be reduced to 29%. Notwithstanding these statements, the increase in

material to be backfilled was never realised. The reduction of tailings to 29% did not form part of the consideration of alternatives.

It is argued that the proposal represents project splitting as Meath County Council have refused planning permission for the ICW. It is also argued that Tara Mines should have been refused permission for the entire project as the ICW forms an integral part of the overall development. Granting one aspect of the proposal while refusing in integral part of the overall development constitutes projecting splitting.

Finally, the submission makes reference to the closure plan and in particular the proposed integrated constructed wetlands. It is suggested that the ICW is not a proven technology and would represent an enormous environmental risk. Integrated constructed wetlands are also the subject to seasonal variations and would be less effective during snow or drought conditions or freezing conditions. It is suggested that the existing trial set out at Tara Mines which comprise of two domestic gardener's type polytunnels do not constitute significant trials for a tailings dump on the size and magnitude that exists on site.

Submission on behalf of Mr. O Cinneide by Simon Hughes BL

A separate submission was made on behalf of Mr. O'Cinneide by Mr. Simon Hughes Barrister-at-law. Mr. Hughes made three legal points in respect of the proposed development. The first point related to EIA and Mr. Hughes stated that there is a requirement of the Board to assess the totality of the proposed developments in accordance with the EIA Directive as set out in Part 10 of the 2000 Act. It notes that the tailings pipe was not delineated on the map submitted and the environmental impact arising from the tailings pipe was not assessed in accordance with the Directive. It is suggested that the pipeline should have been included in the EIA process. It is therefore argued that the proposed development is contrary to the EIA process.

The second issue raised in Mr. Hughes's submission relates to appropriate assessment and in this regard specific reference is made to Kelly v. An Bord Pleanála. The Board are requested to ensure that the issue of mitigation is not confused with compensation in accordance with the Habitats Directive. The submission suggests that the applicant makes reference to compensatory measures throughout the EIS. However, compensatory measures under appropriate

assessment can only be invoked under the provisions of Article 6(4) of the Directive and the Board should ensure that the issue of compensation and mitigation is adequately and appropriately assessed in the context of the Habitats Directive.

Finally, Mr. Hughes's submission makes reference to Condition No. 7 and the need to ensure that the closure and reclamation management plan is also assessed as part of the overall development.

Submission of Local Residents' Action Group

This submission was made on behalf of the group by Tom Finnegan, local resident. The submission details the opposition to the proposed development from the local community. The intensification of such an industrial activity in a rural area is questionable. There are very real fears in the local community that there will be further applications to extend the tailing facility in future. As the host community, the Residents' Action Group believe it is entirely reasonable to expect to be kept fully informed of all matters affecting their lives. The submission states that the local community immediately surrounding the site are the community most affected by the operation of the tailings facility. While Navan undoubtedly benefits economically from the operation, Tara Mines those living in closest proximity to the tailings facility have benefited little. The Board should seriously consider the adequacy of the financial bond attached to any grant of planning permission issued.

It is stated that the R162 from Navan to Kingscourt is one of the busiest regional roads in the country and the staggered junction at Kilberry has a high incidence of road traffic accidents. Children using the school bus are not picked up from their home on the Kilberry/Randalstown Road. Parents of young children use the road when dropping off their children to schools and playschools in the Wilkinstown/Kilberry/Gibbstown area. Local residents are not satisfied that adequate provision has been made for improvements to the 2 kilometre stretch of the R164 between Kilberry and Randalstown which bears the full volume of additional HGV traffic. Concerns raised by the community in relation to speeding and overtaking are summarily dismissed by the Council.

It is requested that An Bord Pleanála, should it be minded to grant planning permission, would make a 'community benefit scheme' a condition of the grant of

permission. It is requested that this should be dedicated to the Parish of Oristown/, Kilberry for community development, sporting and educational projects.

The residents also wish that all information relating to test results of air, soil, water and tissue samples would be published on a regular basis. People could be informed of the matter through a dedicated website.

The Board are urged whatever its decision, to take into account the cumulative negative impact of this facility on the rural community for 40 years. Should the Board be minded to grant planning permission the following conditions should be attached.

- The applicant should be requested to incorporate improvements to the dangerous bend at Sillogue Bridge on the R163.
- Proposals for and road improvements at Kilberry Cross should be put on public display to allow for submissions by the residents.
- The cost of these works should be borne by the applicant.
- Works should be completed before the construction of the tailings facility.
- A condition should be included allowing delivery times to the site by HGV traffic from 8.30 a.m. to 4.30 p.m. Monday to Friday.
- An annual contribution be paid to Meath County Council for the maintenance of the R163 and the L-74141.
- A contribution to be paid in advance for its provision of an overlay from Junction 2 to Kilberry Cross.
- The continuation of the monitoring and liaison committee were representatives of the local community to deal with all matters relating to the testing of water, soil, air and livestock.
- The establishment of a significant community benefit scheme for the local community.

A separate submission prepared by Dr Imelda Shanahan (TMS Environmental Limited) on behalf of the 3rd Party appellants was submitted along with the submission from the Local Residents Action Group. This submission was not read into the public record. This submission is attached to the written submission of the Local Residents Action Group.

Submission from Kealy and Sheridan Family

Mr. Benny Sheridan who made the submission at the oral hearing is the occupier of Woodview House. This structure is acknowledged by the planning officers of Meath County Council to be a good example of vernacular architecture whose setting should be protected. The owner of this house has invested heavily in the 17-hectare farm.

It is argued that the proposed development is contrary to the vision statement set out in the current County Meath Development Plan where "*Meath is a county that fosters sustainability throughout its vibrant communities, dynamic economic and unique cultural and natural heritage*". The consistent message from the mining operation down through the years was the life of the mine was short-term and relied on the goodwill and faith of the local community. The tailings storage facility is a dirty industry and will impact for thousands of years to come. In the immediate area surrounding the facility, the local population has dropped and this, it is argued, is directly attributed to the presence of this facility. The decision to permit an additional 22-metre high tailings facility directly opposite the appellants residence is a shock.

Reference is made to catastrophic failures of other tailing ponds in Romania and Canada. It is further suggested that the tailings pond would make an attractive environmental target for terrorists' attacks giving that ISIS are infiltrating western European countries. The facility could also be susceptible to more aggressive changes in climate including earthquakes, hurricanes and tornadoes.

It is noted that the applicants have also applied for an industrial emissions licence for the extension of the tailings facility. It is suggested that the application is flawed in many respects as the EPA have had to issue two significant requests for additional information.

The EIS and IED licence review application are flawed because they do not consider the cumulative impact arising from the existing and proposed facility. The submission goes on to set out various concerns in relation air quality impacts and noise impacts arising from the proposed development. It is suggested that the EIS fails to consider the maximum concentrations of metals and other toxins in the tailings and fails to provide baseline levels of toxic metals.

The fact that the applicants had stripped back soil and subsoil on the subject site will result in increased infiltration to groundwater recharge. It is suggested that the application fails in several regards to comply with the requirements of the Planning and Development Regulations which is a statutory requirement.

It is also argued that the issue of project splitting obviously applies to the current application as both the horizontal and vertical extensions are being developed by way of habitual routine.

This concluded the formal submissions on behalf of third parties at the hearing.

The Board will note that a written submission was made by Kilberry Amenity and Heritage Group which was handed in at the Oral Hearing but not read into the public record. This submission highlights concerns particularly in respect of roads and traffic. The Board will note that many of the concerns relate to the original information contained in the EIS in respect of traffic. This information was superseded by a revised traffic impact assessment submitted to Meath County Council by way of additional information.

Closing Submissions

The inspector then requested any party to make a closing submission at the Oral Hearing. The inspector indicated that the making of a closing submission was at the discretion of any party and that parties were not obliged to make closing submission should they choose not to. It was indicated to the Inspector that the applicant and that Mr. Tom Finnegan on behalf of the local residents' action group wished to make closing submissions.

Mr. Mulcahy BL made the following closing submission on behalf of the applicant. It stated that there had been some misinformation put forward at the Oral Hearing with regard to the environmental impact arising from the proposed development. In this regard it notes that the transportation assessment should be based on the traffic impact assessment submitted by way of additional information than the information contained in the original EIS. It is stated that there is an adequate robust and comprehensive information before the Board to make a decision on the proposed development. The submission stated that, while the

applicant has endeavoured to carry out meaningful consultation with the local community, it is acknowledged that there is room for improvement in terms of consultation. With regard to the developments itself, it is stated that the principle of a tailings facility at this location has already been acknowledged and has the benefit of planning permission. It is therefore suggested that the principle of development at this location is appropriate. It is suggested that the environmental impact assessment should not disregard the baseline environment in regard to the presence of an existing facility. With regard to the issue of project splitting it is stated that there is no project splitting in that the entirety of the development has been the subject of EIA. The existing permitted development which includes the pipeline leading from Tara Mines to the tailings facility is already existing permitted development and need not be the subject of EIA for the purposes of this application. It is noted that the NIS is not an issue and none of the objectors raise it as a substantive issue in either the grounds of appeal or the Oral Hearing. It is considered that the closure, restoration and after management plan is a separate entity in itself and will not impact on EPA conditions in relation to the operation of the facility. With regard to the integrated constructed wetlands it is stated that the technology to effectively and sustainably treat discharge from the tailings pond is proven both nationally and internationally. It is stated that the ICW must be constructed and commissioned as soon as possible as it will only be licensed by the EPA when it is up and running.

With regard to the issue of community benefit, it is stated that the current application is not strategic infrastructure development and as such a condition cannot be imposed on the applicant as would be the case under strategic infrastructure development. In conclusion therefore Mr. Mulcahy stated that the proposed development would not have any adverse impact on the environment and would by consequence be in accordance with the proper planning and sustainable development of the area.

Closing Submission by Mr. Tom Finnegan

It is argued that the local residents' action group performed robustly in challenging the proposed development notwithstanding the fact that it had limited expertise and resources in comparison to the applicants. It is stated that the Board should refuse planning permission on the grounds that the proposal would have an unacceptable environmental impact, would have an unacceptable traffic and transportation impact.

However, should the Board consider it appropriate to grant planning permission, it would be appropriate that a condition be attached requiring the applicant to make monies available for a community benefit scheme. This concluded Mr. Finnegan's statement.

Closing of the Hearing

After thanking the participants for their conduct at the hearing the presiding inspector closed the hearing at 5.45 p.m.