N4 Collooney to Castlebaldwin, *Proposed Road Development*

APPENDIX NO. 13.2

Geological Impact Summary

PREPARED BY: **Minerex Environmental Limited**

Document Control

Status	Issued For	Signed	Approved
FINAL	*Publication*	*CQ*	*CQ*

No.	Environmental aspect	Phase	Potential impact	Attribute	Feature	Quality/ value	Attribute importance	Impact consequence	Impact magnitude	Impact significance	Mitigation	Impact duration	Residual impact magnitude	Residual impact significance
SOIL GEOLOGY														
1	Geology	Construction	Removal of soil materials	Soil geology	Soil geology	Low	Low	Requirement to excavate and replace moderate proportion of PEAT, organic soils and/ or soft mineral soils beneath alignment	Moderate adverse	Slight	None	Permanent	Moderate adverse	Slight
2	Geology	Construction	Change in soil structure	Soil geology	Soil structure	Low	Low	Requirement to excavate and replace moderate proportion of PEAT, organic soils and/ or soft mineral soils beneath alignment	Moderate adverse	Slight	Appropriate soil material handling and runoff prevention & management	Permanent	Negligible	Imperceptible
3	Geology	Construction	Contamination of soil by accidental leakage or spillage	Soil geology	Soil chemistry	Low	Low	Requirement to excavate/ remediate small proportion of waste soil	Small adverse	Imperceptible	Appropriate fuel, equipment & material handling	Temporary	Negligible	Imperceptible
4	Geology	Operational	None	Soil geology	None	None	None	None	None	None	None	None	None	None

No.	Environmental aspect	Phase	Potential impact	Attribute	Feature	Quality/ value	Attribute importance	Impact consequence	Impact magnitude	Impact significance	Mitigation	Impact duration	Residual impact magnitude	Residual impact significance
SUBSOIL GEOLOGY														
5	Geology	Construction	Removal of subsoil materials	Subsoil geology	Subsoil geology	Medium	Medium	Requirement to excavate and replace moderate proportion of PEAT, organic soils and/ or soft mineral soils beneath alignment	Moderate adverse	Moderate	None	Permanent	Moderate adverse	Moderate
6	Geology	Construction	Change in soil structure	Subsoil geology	Subsoil structure	Medium	Medium	Requirement to excavate and replace moderate proportion of PEAT, organic soils and/ or soft mineral soils beneath alignment	Moderate adverse	Moderate	Appropriate soil material handling and runoff prevention & management	Permanent	Negligible	Imperceptible
7	Geology	Construction	Contamination of soil by accidental leakage or spillage	Subsoil geology	Subsoil chemistry	Medium	Medium	Requirement to excavate/ remediate small proportion of waste soil	Small adverse	Slight	Appropriate fuel, equipment & material handling	Temporary	Negligible	Imperceptible
8	Geology	Construction	Reduction in protection afforded to groundwater	Subsoil geology	Groundwater	High	High	Minor impact on integrity	Small adverse	Moderate	Appropriate fuel, equipment & soil material handling	Temporary	Negligible	Imperceptible
9	Geology	Operational	None	Subsoil geology	None	None	None	None	None	None	None	None	None	None

No.	Environmental aspect	Phase	Potential impact	Attribute	Feature	Quality/ value	Attribute importance	Impact consequence	Impact magnitude	Impact significance	Mitigation	Impact duration	Residual impact magnitude	Residual impact significance
GROUND CONDITIONS														
10	Geology	Construction	Removal of geological materials	Ground conditions	Ground conditions	Medium	Medium	Requirement to excavate and replace moderate proportion of PEAT, organic soils and/ or soft mineral soils beneath alignment	Moderate adverse	Moderate	None	Permanent	Moderate adverse	Moderate
11	Geology	Construction	Change in soil structure	Ground conditions	Subsoil structure	Medium	Medium	Requirement to excavate and replace moderate proportion of PEAT, organic soils and/ or soft mineral soils beneath alignment	Moderate adverse	Moderate	Appropriate soil material handling and runoff prevention & management	Permanent	Negligible	Imperceptible
12	Geology	Operational	None	Ground conditions	None	None	None	None	None	None	None	None	None	None
SOIL CHEMISTRY														
13	Geology	Construction	Disturbance of contaminated soil	Soil chemistry	None	None	None	None	None	None	None	None	None	None
14	Geology	Construction	Disturbance of contaminated soil	Soil chemistry	None	None	None	None	None	None	None	None	None	None

No.	Environmental aspect	Phase	Potential impact	Attribute	Feature	Quality/ value	Attribute importance	Impact consequence	Impact magnitude	Impact significance	Mitigation	Impact duration	Residual impact magnitude	Residual impact significance
15	Geology	Construction	Disturbance of contaminated soil	Soil chemistry	None	None	None	None	None	None	None	None	None	None
16	Geology	Construction	Placement of surplus PEAT inside CPO	Soil chemistry	Soil geology	Low	Low	Minor impact on integrity	Small adverse	Imperceptible	Appropriate soil material handling and runoff prevention & management	Temporary	Small adverse	Imperceptible
17	Geology	Construction	Placement of surplus PEAT inside CPO	Soil chemistry	Subsoil geology	Medium	Medium	Minor impact on integrity	Small adverse	Slight	Appropriate soil material handling and runoff prevention & management	Temporary	Small adverse	Slight
18	Geology	Operational	None	Soil chemistry	None	None	None	None	None	None	None	None	None	None
BEDROCK GEOLOGY														
19	Geology	Construction	Removal of rock materials	Bedrock geology	Bedrock geology	Medium	Medium	Loss of small part of bedrock geology	Small adverse	Slight	None	Permanent	Small adverse	Slight
20	Geology	Construction	Reduction in protection afforded to groundwater	Bedrock geology	Groundwater	High	High	Minor impact on integrity	Small adverse	Moderate	Appropriate fuel, equipment & soil material handling	Temporary	Negligible	Imperceptible
21	Geology	Operational	None	Bedrock geology	None	None	None	None	None	None	None	None	None	None
REMOVAL OF ROCK MATERIALS														

No.	Environmental aspect	Phase	Potential impact	Attribute	Feature	Quality/ value	Attribute importance	Impact consequence	Impact magnitude	Impact significance	Mitigation	Impact duration	Residual impact magnitude	Residual impact significance
22	Geology	Construction	None	Structural geology	Karst features	None	None	None	None	None	None	None	None	None
23	Geology	Operational	None	Structural geology	Karst features	None	None	None	None	None	None	None	None	None
KARST FEATURES														
24	Geology	Construction	Collapse of identified karst features	Karst features	Karst features	High	High	Loss of small part of karst features	Small adverse	Moderate/ slight	Appropriate drainage control, backfilling with material of similar permeability, use of geogrid & supervision by karst expert	Permanent	Small adverse	Moderate/ slight
25	Geology	Construction	Collapse of unidentified karst features	Karst features	Karst features	High	High	Loss of small part of karst features	Small adverse	Moderate/ slight	Appropriate drainage control, backfilling with material of similar permeability, use of geogrid & supervision by karst expert	Permanent	Small adverse	Moderate/ slight
26	Geology	Construction	Collapse of identified or unidentified karst features	Karst features	Road development	High	High	Impact on integrity or loss of part of attribute	Small adverse	Moderate/ slight	Appropriate drainage control, backfilling with material of similar permeability, use of geogrid & supervision by karst expert	Permanent	Small adverse	Moderate/ slight

No.	Environmental aspect	Phase	Potential impact	Attribute	Feature	Quality/ value	Attribute importance	Impact consequence	Impact magnitude	Impact significance	Mitigation	Impact duration	Residual impact magnitude	Residual impact significance
27	Geology	Operational	None	Karst features	Karst features	None	None	None	None	None	None	None	None	None
LANDUSE														
28	Geology	Construction	Change in land use	Land use	Land use	High	High	Loss of small part of land use	Small adverse	Moderate/ slight	None	Permanent	Small adverse	Moderate/ slight
29	Geology	Operational	Change in land use	Land use	Land use	High	High	Loss of small part of land use	Small adverse	Moderate/ slight	None	Permanent	Small adverse	Moderate/ slight