CBM CODRINGTON PIT PROPOSAL
VISUAL IMPACT ASSESSMENT
(MHBC Planning, Feb. 17, 2012)

1.0 INTRODUCTION

The proposed Codrington Pit is located at Part Lots 32-34, Concession 6, in the Municipality of Brighton, County of Northumberland. The site is located interior to a prominent hill feature approximately 2 km southeast of the Village of Codrington, 1.5 km east of County Road 30, and to the north of Old Wooler Road (see Figure 1). The area subject to the Official Plan Amendment and to be licensed under the Aggregate Resources Act is ±105 ha (± 259 ac), with ±80 ha (±198 ac) proposed for extraction. The proposed pit consists of an East and West parcel, separated by an unimproved (gravel surface) municipal road allowance. The site is currently a mix of agricultural croplands and forested areas, with a seasonal pond (see Figure 2). The proposed pit operation is for aggregate extraction from above the water table only. Processing will occur through the use of equipment located within the excavation area.

Aggregate haulage will occur using a private road on St. Marys owned lands located between the northwest corner of the site (West Parcel) and County Road 30 to the west. The private haul road was specifically designed to eliminate the need to access the site from Old Wooler Road and Ferguson Hill Road. The western section of the haul road and entrance onto County Road 30 is already in place, associated with an existing licensed pit (Archer) owned by St. Marys. These features will require improvements/upgrades to accommodate truck traffic from the Codrington Pit operation. The eastern portion of the haul road, between the Codrington site and the Archer Pit, will be new construction and will be located alongside a hydro transmission corridor. The private haul road approach significantly reduces the effects on the community surrounding the pit, including visual considerations, and maintains the current character of the area.

2.0 METHODOLOGY

In summary, MHBC's methodology for the Visual Impact Assessment (VIA) has been as follows:

i) gather base and field information;
ii) undertake technical analyses;
iii) identify where potential views of the site may be available under existing conditions (i.e. no operational mitigation);
iv) where views are available, assess the effect of mitigation measures in the current proposal that reduce or eliminate potential views;
v) provide recommendations to address any views that are not mitigated, and, improve or enhance the effect of proposed mitigation measures.

MHBC has considered a VIA Study Area bounded by the closest local roads and County Road 30, along which there is associated residential development. The Study Area includes the Village of Codrington. The roads included are Old Wooler Road and Towerline Road to the south, County Road 30 to the west, Aranda Way to the north, and Cameron Road and Jamieson Road to the east.

The Study Area was visited in December 2011 by MHBC in order to describe the physiography, topography, and land uses, and identify other notable features. This was combined with file information, aerial and ground-based photos and topographic contour mapping, to provide the base data necessary to assess potential views and visual impact considerations.

To provide the proper policy context for the VIA, reference was made to the staff report of the Manager of Planning Services for the Municipality of Brighton (Dec. 1, 2011), the peer review report by The Ainley Group (Dec. 1, 2011), and relevant policies in the Township of Brighton Official Plan (August 2000), which were also referenced in the municipal and peer review reports.

A viewshed mapping exercise was undertaken to understand anticipated views of the proposed pit site under existing conditions, and under operational conditions. The private haul road was also given consideration. Viewshed maps are a tool used in combination with field observations and topographic mapping to identify where the pit may be exposed to public view from representative locations within the Study Area, referred to as viewpoints. The maps are generated through the use of specifically designed computer software by a trained technician. Topographic contour information is taken from an elevation surface database held by the Provincial government (Land Information Ontario).

The viewpoints selected for the viewshed mapping exercise were located on public travelled roads and at specific residential locations, two of which are the McNichol and Ferguson homes at the southwest corner of the Western Parcel (see Figure 2). These homes were specified for particular consideration in the VIA by the Municipality.

For purpose of the analysis, the viewshed mapping exercise did not include the screening effect of existing intervening vegetation. Tree lines and forested areas lying between the site and the viewing location can provide an effective visual screen of the pit operation and haul road, depending on the relative locations and elevations of the feature and the viewing point. A result of this conservative approach is that the potential viewsheds 'over-represent' views that may be available.

Undertaking the viewshed mapping exercise results in an identification of where there are potential visual impacts of the site. Where the site was found to be visible, the technical analysis was re-done with consideration for operational features of the proposed pit that provide a visual mitigation function, such as berms, to determine whether views remain and

any additional mitigation is recommended. For the Codrington Pit proposal, visual mitigation is provided by the perimeter berms required for noise control.

Where changed views were identified, with allowance for proposed operational mitigation, further appropriate mitigation can be proposed in keeping with the objectives derived from the planning policy review and peer review comments (see Section 3.0), as follows:

1) provide effective screening of the operations; and,
2) design of screening features to be compatible with the existing landscape and maintain rural character.

3.0 OFFICIAL PLAN POLICY AND PEER REVIEW

At the time of the Codrington Pit application, the August 2000 Township of Brighton Official Plan (OP) was in effect. The specific OP policies referenced in The Ainley Group's peer review report are as follows:

Section 6.12.3.2 iii:

"*the proposed operation will be effectively screened to preserve the scenic nature and rural attributes of the area and that the screening is effectively established prior to the commencement of the operation.*"

and,

Section 6.12.4.1:

"Minimum distance separations shall be established in the Zoning By-law amendment for each new pit or quarry which will require minimum setbacks between the excavated area and the public road allowance and adjoining uses. In addition, minimum setbacks may also be required between buildings, structures and other uses on the site and adjoining uses."

The Ainley peer review report states the use of mitigation measures should be explored particularly for residences to the south and west of the proposed pit, to address OP section 6.12.3.2 iii) and 6.12.4.1 to preserve scenic nature and rural attributes.

4.0 LANDSCAPE FEATURES

The Study Area and the Codrington hill in particular has been assessed in terms of topography, physiography, forest and other vegetation conditions, and land uses. These attributes have been used to develop the Rural Landscape and Viewpoints Map for the Study Area (see Figure 3). Specific components of the regional and local landscape are described below.

4.1 Topography

The location for the proposed Codrington Pit is at the top of a prominent hill feature with a relatively flattened top (nominal elevation 185-200 m above sea level (asl)) that rises over 50 metres above the surrounding clay plain (nominal elevation 135 m asl on the west side). Geologically, the hill results from glacial events during the last ice age. The hill is the dominant landscape feature in the Study Area, occurring over some 800 ha (2000 acres). The flanks of the hill are generally forested. Access to the area is readily available as it is possible to drive around the entire hill using local municipal roads and County Road 30. While road allowances do occur at the top of the hill, they are not built to municipal standard and currently provide gravel trail type access.

The flanks of the hill are steeply sided at the western, southern and eastern margins, with the northern flank somewhat less pronounced. A ravine at the northeastern portion of the hill is mostly contained within the hill landscape. This is identified as the Codrington East Ravine Natural Area by Lower Trent Conservation. The proposed Codrington Pit is sited at the southern portion of the hill, on the generally flatter area at the top of the hill. As such, the proposed pit site does not dissect any of the flanks of the hill.

The other major physiographic feature in the area is the Murray Marsh, an extensive Provincially Significant Wetland located immediately north of the Codrington hill. There are other features of glacial origin in the immediate area, notably an esker ridge on the south side of Old Wooler Road on which some homes are built.

4.2 Forested Areas

Respectively, approximately 60 percent and 40 percent of the West and East parcel extraction areas are forested. At the West parcel, the forest occurs as a single block in the central area, with remnant hedgerows and tree lines bordering individual agricultural fields. Tree lines also border the gravel road that separates the West and East parcels. The forest at the East parcel occurs at the northeast and eastern portions.

The bulk of the forested portion of the Codrington hill lies to the north of the proposed pit site, and on the north side of a hydro corridor. There is a large area of forested land immediately west of the pit site, at the western flank of the hill, which is connected to the on-site forest. Lands to the east of the pit site, south of the transmission line, are a mix of original forest and naturally regenerating forest in former agricultural fields. The flanks of the hill are generally forested. Some areas on the less steep slopes which were historically cleared for agricultural activities are now regenerating.

4.3 Land Uses

Formal land uses occurring on the Codrington hill include farming, an existing sand/gravel pit, an organized snowmobile trail and isolated residential uses. A major (high-voltage) hydro transmission corridor is a notable feature. Informally, the hill is used for private recreational activity such as hiking, camping and hunting. There is no public land or activity on the hill except for public use of unimproved gravel road allowances.

The clay plain bordering the hill on its western and eastern sides is dominated by agricultural croplands. There has been some progression of farming activity onto the hill deposit, most of which has occurred and continues to occur at the Codrington Pit site (corn). More historic cropland uses have occurred at the remainder of the southern portion of the hill and at the northern end of the hill.

The hydro transmission corridor is approximately 130 m wide, and carries twin steel tower high voltage lines in an east-west direction across the hill. The tower corridor is a prominent visual feature, given the height/size of the towers, and the width and exposure of the corridor. It forms the northern limit of the Codrington site and a portion of it will be required for the eastern section of haul road.

The Archer Pit is located at the western flank of the hill, immediately north of the hydro corridor. There has been no extraction at the site in recent years, although the historic extraction face is visible from County Road 30 and the western end of Old Wooler Road as it has been excavated into the hillside.

Other notable features in the Study Area include the village of Codrington and just to the south of it, the Codrington Community Centre. A recently re-opened café (and residential use) is located on County Road 30 directly opposite the Archer Pit haul road. A wellness centre/bread and breakfast establishment operates at the base of the hill on Old Wooler Road, east of Ferguson Hill Road.

There are no permanent buildings and/or structures proposed for the pit site. A portable processing plant will be initially located on site in the north-central portion of the West Parcel and will move through the extraction area subject to restrictions outlined on the Aggregate Resources Act site plan. Small temporary structures may be located on-site subject to applicable approvals and will be removed at the end of the life of the pit. The scales and scalehouse facilities for the pit operation are proposed to be located along the private haul road for the pit, and not in the licensed area.

Residential land use around the proposed extraction area occurs on single lots, with the more recent development occurring by severance. Most of the homes around the site are located at the base of the Codrington hill. The exceptions to this are the McNichol and Ferguson residences either side of the south corner of the pit site (Western Parcel). Also, there are a few homes to the south of the site, on the south side of Old Wooler Road, which are built on the esker ridge at a higher elevation of approximately 160 masl. There is also a home built at an elevated location on the flank of the hill to the northwest of the site.

5.0 VIEWS

Views of the Codrington Pit site and haul road location have been studied from surrounding travelled roads and specific locations such as the Ferguson and McNichol residences, other

elevated residential locations, Codrington Community Centre and the café business/residence at County Road 30. Abutting and bisecting the site are unimproved municipal road allowances, two of which consist of gravel trails. One is located at the south boundary of the site and the other separates the West and East parcels of the site. Our observations are that these trails are used by walkers/hikers, horseback riders and other visitors for recreational purposes. Vehicular access is possible although it would be limited given the condition of the trails. There is a use of the trails by all-terrain vehicles in the summer months and snowmobiles in the winter months. Given the nature of the use of the trails and their proximity to the pit operation, no dedicated visual mitigation measures are considered necessary from these areas. Berming required for noise mitigation would serve to effectively screen views from one segment of the trail. Existing tree screening in the excavation setback areas of the site will partially block views alongside all trail segments.

5.1 Potential Viewsheds

In the case of the Codrington hill, the slopes or flanks of the hill are the prominent and most visual aspect. These hillsides are for the most part forested and it is these forested areas, and not the relatively small amount of on-site forest, which form a forested landscape view which includes the hill. Therefore, while the site is the high point of the Study Area, many of the potential viewing opportunities that may occur from local dwellings and roads are at elevations topographically 'below' the site. Since pit operations are not broaching the forested slopes of the hill, and allowing for mitigation provided by berms, the operation will not be visible from a majority of travelled roads and residences in the Study Area.

As described earlier, the Study Area for the VIA was selected on the basis of local municipal roads and County Road 30, which are the closest travelled public roads to the site and the Codrington hill, and are proximal to the base of the hill. Viewpoints used in the viewshed mapping exercise are located along the subject travelled roads. Specific residential locations were also selected as viewpoints on the basis of direction received from the Municipality and the peer reviewer (Ainley). Also considered were houses located in elevated areas, as this could possibly serve to increase the potential for views into the site.

The conclusion is that for the overriding majority of the Study Area, the site is fully screened by the existing topography (it is noted that while not included in the technical viewshed analysis, existing vegetation provides even greater screening effect).

The following chart describes where views of the site are and are not available from the subject viewpoint locations (photographs are provided at Appendix 1 taken from the viewpoint location, where access was possible).

Viewshed Descriptions – With No Mitigation						
Map Ref. (Fig.3,4)	**Location**		**Direction of Site**	**View**	**Description**	**Photo Ref. (App.1,2)**
Travelled Roads						
Rd1	Old Wooler Rd. at Ferguson Hill Rd.		north	No	Southern flank of hill blocks view	1A, 1B
Rd2	Old Wooler Rd. at Lord Rd.		north and northwest	No	Southern and southeastern flank of hill blocks view	1C
Rd3	Cowan Rd. at Jamieson Rd.		west	No	east flank of hill blocks view	1D
Rd4	Jamieson Rd.	west of Cameron Rd.	west	No	east flank of hill blocks view	1E
Rd5	Cameron Rd.	north of Jamieson Rd.	west	No	east flank of hill blocks view	1F
Rd6	Aranda Way	east of County Rd. 30	southeast	No	West flank of hill blocks view	1G
Rd7	County Rd. 30 at hydro line		east	No	West flank of hill blocks view	1H
Rd8	Old Wooler Rd. at County Rd. 30		northeast	Yes	Parts of southwest portion of Western Parcel	2E
Rd9	Old Wooler Rd. at Towerline Rd.		northeast	Yes	Parts of southwest portion of Western Parcel	2F, 2G
Residential (elevated locations)						
Res1	Immediately west of West Parcel (McNichol)		east	Yes	Parts of southwest portion of Western Parcel	*see below*
Res2	Immediately south of West Parcel (Ferguson)		north	Yes	Parts of southwest portion of Western Parcel	2A, 2B, 2C, 2D
Res3	On elevated ridge at south side of Old Wooler Rd.		north	Yes	Parts of southwest portion of Western Parcel	n/a
Res4	South side of Aranda Way		southeast	No	Northwest flank of hill blocks view	n/a

There are some locations from where partial/limited views of the site are potentially available. These occur where existing topographic screening provided by the flanks of the hill is not sufficient to block the views. The locations of these viewpoints are:

- Old Wooler Rd. at County Rd. 30 (Map Ref. Rd8);
- Old Wooler Rd. at Towerline Rd. (Map Ref. Rd9);
- McNichol house immediately west of West Parcel (Map Ref. Res1);
- Ferguson house immediately south of West Parcel (Map Ref. Res2); and,
- House on ridge at south side of Old Wooler Rd. (Map Ref. Res3).

Photographs of these views are provided at Appendix 2, where access was possible. The mitigation of these views is discussed in Section 6.0.

5.2 Access/Haul Road

The Codrington Pit application as submitted by St. Marys/CBM includes consideration of truck access to/from the site to transport aggregate materials. As described in the Introduction, haulage is proposed to occur using an existing haul road that extends from County Road 30 to the Archer Pit, and, on a proposed section of haul road, between the Archer Pit and the proposed Codrington Pit. This feature of the proposal eliminates the need to use local roads as the haul route, and therefore is a significant factor in reducing effects on the local scenery and rural attributes as perceived by the community. As described below, there will be no to minimal views of the proposed haul route itself, except at the County Road 30 entrance which is pre-existing (see photograph at Appendix 2). Truck traffic using the road will be the most visual aspect of the haul road.

The existing portion of the access road located between County Road 30 and the existing Archer Pit is not obvious except for its entrance onto County Road 30. The haul road has been used for both pit purposes and farm purposes for many years (although there has been minimal pit activity recently). The road is located on the flat-lying agricultural lands which surround the Codrington hill feature. There is no vegetation screening alongside the road except for at its mid-section where it is located in a heavily treed area. At its entrance onto the County road, the haul road resembles any other farm laneway that is common in the area. Trucks using this section of road would be visible from County Road 30, Old Wooler Road and Towerline Road, and residential uses alongside these areas.

A café/residential use is located on the west side of the County road, directly opposite the haul road entrance. This location provides a view of the west end of the haul road and its usage by truck traffic. Given that both the café and Archer Pit use have been established for many years, the views available are a pre-existing condition.

The eastern section of haul road is proposed for construction between the Archer Pit and the proposed Codrington Pit. From the Archer Pit, the road would be built over the west flank of the hill, and then easterly onto the flattened topography at the top of the hill. Here, it would be located alongside the north edge of the hydro transmission corridor which would then be crossed to connect with the proposed Codrington Pit site. While the final proposed location for the road will be determined by engineering studies, preliminary field work undertaken by natural heritage specialists has recommended the above-described route location.

For residential uses around the proposed pit site, truck traffic using some sections of the access road would be visible from alongside County Road 30 and at the west end of Old Wooler Road. The only house (of those previously considered) to have a view would be the McNichol house with the view being that of the existing section of haul road.

6.0 VIEW MITIGATION

Analysis shows that views of the proposed pit site are present from the Ferguson and McNichol homes, from the western portion of Old Wooler Road, and from the ridge to the south of Old Wooler Road (see Figure 4). As would be expected, the most significant views of the pit site are from the McNichol and Ferguson residences.

When the analysis occurs under pit operational conditions, under which the screening effect provided by perimeter earth berms are factored-in, results indicate there are no views into the site from the McNichol and Ferguson houses. There do still remain views from the western portion of Old Wooler Road. However, they are every limited in extent and exposure. Given these results and the fact that the viewing locations are on a travelled road, the change in views were found to be insignificant.

The most exposed view of the operation occurs from the ridge on the south side of Old Wooler Road, on which some homes have been built. The off-site ridge is over 750 m away, with the view limited to the uppermost portion of a locally elevated area at the southeast corner of the West Parcel. The impact of this viewing area is considered minimal given its distance from the ridge and its limited relative extent with consideration to the entire landscape view. Further, from an operational position, the change in view would be reflected in the loss of some forest view (and this may be further minimized or eliminated if intervening vegetation screening is considered). Extraction of the subject elevated area is to occur from the north, thereby not resulting in any pit face type views, which may be perceived as being of concern.

Given their proximity to the site, MHBC's has considered the two closest residences to be a special case. Analysis shows the perimeter berm will be effective to block view into the pit operation from the McNichol and Ferguson homes. This is a condition that fully meets the Township Official Plan policy of effective screening.

A secondary aspect of the Official Plan policy is that the site be "*effectively screened to preserve the scenic nature and rural attributes of the area".* It is widely accepted in land use planning for aggregate resources that extraction activity is a rural land use. As such, pits are deemed compatible with rural land uses such as farming, and a properly designed and buffered/separated pit can exist and operate in an area of rural residential development. Features such as berming are an intrinsic part of pit operations, for purposes of noise control, visual screening, overburden storage and rehabilitation. As such, berms themselves can be considered part of the rural landscape, and further, they are not an uncommon feature at farm operations. Notwithstanding this, however, an extractive proposal can be enhanced if measures to improve berm design and construction are explored, on a case by case basis.

Truck traffic using the private haul road would be visible from County Road 30, the western end of Old Wooler Road, and the McNichol residence. The most significant views would be experienced by the café business and residential use opposite the haul route entrance. However, these views and that of the view from the McNichol residence relate to the pre-existing built portion of the haul road which is an established land use associated with the

existing Archer Pit. The portion of haul road to be constructed will be at the top of the hill and at the western slope of the hill, the majority of which is on the Archer Pit lands. Views of truck traffic using this section of haul road may potentially occur from County Road 30 and the west end of Old Wooler Road, although the views would be very limited. The limited visual effect of using this access point is minimal as compared to the alternative of using local roads for haulage.

7.0 CONCLUSION AND RECOMMENDATIONS

This Visual Impact Assessment has been prepared to address the Official Plan policy and municipal direction with respect to ensuring the proposed Codrington Pit operation is effectively screened and such screening serves to preserve the scenic nature and rural attributes of the Codrington area. Addressing these requirements raises two primary issues: views of the pit operation (and associated activity), and changes to the rural landscape setting as a result of the pit.

Analysis has shown that with the screening effect of perimeter berming factored-in, the only potential views of on-site operations will be from residences on the ridge at the south side of Old Wooler Road. Mapping shows the view is very limited, consisting of a forested ridge at the south-central portion of the pit site.

For any earth berms constructed adjacent to the McNichol and Ferguson properties, it is recommended that St. Marys/CBM consider landscape design options to mitigate the visual impact of the berm itself. Options to consider would include techniques such as specialized berm design (eg. variations in height, slope and orientation while maintaining noise control specifications), and a tree/shrub planting plan. It is further recommended that St. Marys approach the subject homeowners to request their participation in discussion around the design and content of the planting plan.

With regards to the haul road, the only significant views will be of the existing haul road and entrance location, which are an established land use condition. The haul road and associated truck traffic views will be unobtrusive from County Road 30 as the road is located on flat-lying agricultural lands. The café business and residential use opposite the entrance will experience the most significant views. While the existing land use condition of the haul road and entrance is recognized, it is recommended that St. Marys/CBM provide some consideration to mitigating the visual impact. This can be included as part of a landscaping plan associated with upgrades and improvements to the entrance/exit as required to accommodate pit truck traffic. For sections of the haul road where no tree screening is in place, plantings can be considered.

For that section of the proposed haul road which is to be constructed, there may be potential views of the road as it crosses the slope of the hill. Careful road positioning and use of existing vegetative screening can eliminate or minimize any views. It is also noted that the sloped portion of the road will be constructed within a licensed pit operation and hence,

extraction is an approved land use activity which will result in a visual impact in and of its own. The pit haul road takes advantage of an existing licensed pit operation and its associated existing haul road such that there is no net change to existing or approved land use conditions.

The Visual Impact Assessment also showed that with the regards to the scenic nature and rural attributes of the area, there would essentially be no change to these factors in a landscape or regional perspective. The mosaic of forested areas and agricultural lands on the flanks of the hill and at the top of the hill, surrounding the pit site, will provide a screening effect. As such, in terms of visual impacts, this is a good location for a pit operation.