REGION OF WATERLOO

PLANNING,HOUSING AND COMMUNITY SERVICES
Community Planning

TO: Chair and Members of the Ecological and Environmental Advisory Committee

DATE: January 30, 2007 **FILE CODE:** DO4-20058/DA

SUBJECT: **Proposed Butler Pit Extension, 1180 Cedar Creek Road, North Dumfries Township, Gilholm Marsh Environmentally Sensitive Policy Area [ESPA 58]**

RECOMMENDATION:

1. THAT the Ecological and Environmental Advisory Committee advise Planning, Housing and Community Services staff that it has no objection in principle to the proposed zone change required to permit the extension of the Tullis Estates/Butler Pit located at 1180 Cedar Creek Road, North Dumfries Township, onto property comprising lands within and contiguous to ESPA 58 and contiguous to ESPA 57, subject to the following:

   1.1 That the refined boundary of the Gilholm Marsh ESPA be staked in the field to the satisfaction of Regional staff and reflected on the site plan for the proposed gravel pit.;

   1.2 That the lands within the Gilholm Marsh ESPA on the subject property be zoned open space as required by Policy 4.3.6 of the Regional Official Policies Plan;

   1.3 That, given the fact that the subject property lies within a Sensitivity 2 Wellhead Protection Area, consideration be given by the Ministry of Natural Resources to excluding fuel storage and refueling from the proposed pit operation areas;

   1.4 That the pit licence provide for monitoring water levels and quality at Gilholm Marsh and Barrie's Lake before, during and after extraction activities and that monitoring wells MW1 – MW5 also be maintained for ongoing groundwater quality and quantity monitoring;

   1.5 That areas where sedimentation could occur into the ESPA be identified during the boundary staking process and that the site plan identify such areas and specify appropriate erosion and sedimentation control measures, preferably the construction of earthen berms designed to address this potential risk;

   1.6 That the Region be consulted in the preparation of a detailed rehabilitation plan for landscaping areas adjoining ESPA 58 prior to its approval by the Ministry of Natural Resources; and

   1.7 That the pit licence provide for a long-term ecological monitoring program of the significant biological features and functions of the site, in addition to the groundwater monitoring recommended in item 1.3.

REPORT:

1. Background

This report deals with an expansion of an aggregate extraction proposed for the Tullis Estates Ltd. property at 1180 Cedar Creek Road in North Dumfries Township at the western boundary of the City of Cambridge. This property is adjacent to the existing Butler Pit, and would result in an expansion to the east. The proposed extended portions of the pit are expected to be in operation over a ten to fifteen year period. Progressive rehabilitation is planned during the project period, with rehabilitation to agricultural use on suitable portions of the excavated land, and open space elsewhere.

Two ESPAs are "contiguous" this property according to the definition in the Glossary of Terms (Regional Official Policies Plan, September 2006 Consolidation). Gilholm Marsh ESPA (ESPA 58) covers a substantial portion of the property (Figure 1) and also extends off site to the south-east. It enters the property south of centre on the east side and extends north-west almost crossing the property before veering northwards as far as, and ending at, the CPR line. The lake of Barrie's Lake ESPA (ESPA 57) lies to the north of, and adjacent to the property. Thus, the two ESPA's are effectively contiguous, with only the single-track CPR line between them. The wetlands of both ESPA's are also Provincially Significant Wetlands. ESPA 58 on the subject property also forms the southerly tip of the Blair-Bechtel-Cruickston Environmentally Sensitive Landscape.

On September 30, 2003, EEAC considered staff Report P-EEAC-03-008 and recommended that the Environmental Impact Statement required in support of this application be scoped, as authorised by Section 3.2.4 of the ***Regional Official Policies Plan,*** to address five issues.

a. confirmation of an ecologically appropriate boundary of and buffer to ESPA 58 and the Provincially Significant Wetland on the subject lands;

b. impacts associated with routing, constructing, and operating a haul road or some other system of conveyance across the northern part of ESPA 58 to access the proposed northeastern extraction area;

c. impacts on the features and functions of ESPA 58 likely to arise from the development and operation of the proposed pit;

d. maintaining the quantity and quality of groundwater discharge and surface flows from the subject lands to the regional aquifer and to the Provincially Significant Wetlands within ESPA's 58 and 57; and

e. methods for preventing sedimentation from the proposed extraction areas into ESPA 58.

An Environmental Impact Statement was completed for this project late in 2004 and reviewed by the Butler Pit Extension subcommittee. In its report, the subcommittee noted that while the field work that was done for the Environmental Impact Statement was generally satisfactory, the structure of the report was not structured around the specified scoping terms. Based on the subcommittee's report (EEAC-05-012) EEAC made the following recommendation on June 7, 2005:

> THAT the Ecological and Environmental Advisory Committee advise Regional Planning, Housing and Community Services staff that further consideration of the proposed Butler Pit extension application be deferred until such time as the following items stipulated in the Terms of Reference adopted on September 30, 2003, are satisfactorily addressed:

a. the proposed boundary of ESPA 58 is interpreted to conform to the natural "height of land" around the wetland kettle features on the subject property;

b. consideration is given to alternative routes for the haul road to Phase 2 across ESP 58;

c. potential impacts on the identified features and functions of ESPAs 57 and 58 are more fully assessed;

d. a detailed water balance for the complex of wetland kettle features is completed to assess the full quantitative and qualitative impact of extraction and the proposed post-extraction landscape on the wetland communities in accordance with Policy 5.3.8 (3); and

e. a detailed rehabilitation plan for the proposed pond feature is submitted in accordance with Policy 5.3.8 (4).

In December 2006, series of Appendices to the original EIS was submitted by the project consultant (Planning and Engineering Initiatives Ltd) in response to the issues raised by EEAC. Included as Appendix A was an Environmental Impact Statement Addendum Report (Dougan and Associates, November 2006) submitted. The EIS Addendum Report essentially comprises a copy of EEAC-05-012 with responses appearing as insertions in bold type face throughout the document. In addition, supporting documentation was provided regarding the hydrogeological component of the application and a review of the applicable surface drainage areas. The Addendum and supporting material was reviewed by the subcommittee. In general, the sub-committee is satisfied that the addendum addresses the outstanding ecological issues identified on June 7, 2005.

Based upon its review of the addendum, the sub-committee is prepared to support the proposed re-zoning of the subject property subject to seven conditions intended to conserve the structural and ecological integrity of ESA 58 during and following extraction of the surrounding lands. The first two recommendations apply to the proposed re-zoning of the site by North Dumfries Township which is required to permit extraction. The remaining recommendations relate to the licence and site plan to be approved by the Ministry of Natural Resources. The sub-committee is hopeful that Ministry staff will give serious consideration to its recommendations in approving the site plan notes which will guide the development and operation of the pit.

It is important to note that the area under consideration is no longer identical to that discussed in the previous EEAC report (EEAC-05-012); the northern extent of the subject property, north of the CPR line, i.e. the triangular parcel of land (Phase 5, Figure 2) adjacent to Barrie's Lake ESPA (ESPA 57), has been sold and is no longer included in the proposed area to be licensed. In addition, the removal of material below the water table is no longer being considered in the revised proposal. The attachment Figure 1 shows the current layout of the proposed expansion of the extraction area; Figure 2 is the previous layout.

2. Description of the Project

In accordance with Regional policies prohibiting extraction within ESPA's, extraction is being proposed only on those areas of the property which lie outside ESPA 58. The configuration of the Gilholm Marsh divides the proposed extraction area into three parts identified by phase numbers (Figure 1).

As is now generally the rule, progressive rehabilitation would be implemented. When complete, the flat bottom areas of the extraction zones would be returned to agricultural use. The slopes down to these areas will be returned to agriculture or naturalized as open space, as determined through

consultation with the landowner, MNR, and Region. It is also proposed that open space areas would be rehabilitated with native species of woody and herbaceous plants which occur, or are known to have occurred in the area.

3. ESPA Boundaries

The first item to be addressed in the scoped EIS is the 'confirmation of an ecologically appropriate boundary of and buffer to ESPA 58 on the subject lands.'

The westerly portion of ESPA 58 on the subject property consists of a complex of kettle features containing wetlands, all of which are part of a larger PSW Complex. Several Regionally significant plant species have been observed in these wetlands, which are also used by waterfowl. Some of the slopes above the wetlands are wooded and others consist of meadow habitat. The upland areas are of lesser ecological quality than the wetlands due to past disturbance and the widespread presence of invasive non-native species, but they play an important role in sustaining the wetlands and also offer substantial potential for restoration to the type of savanna habitat which reportedly occupied this locality at the dawn of European settlement. The slopes comprise the self-contained catchment area within which these wetlands are situated. They convey surface runoff to the wetlands, they buffer them from human activity on the surrounding tableland, and they provide upland habitat required by wildlife which also uses the wetlands.

The EIS originally stated that buffers around the ESPA were not considered necessary. EEAC's response was that the proposed boundary of ESPA 58 should be interpreted to conform to the natural "height of land" around the wetland kettle features on the subject property. In the Addendum Report, buffer zones have been established comprising a 15 m setback/buffer along the eastern boundary of Phase 1 and a buffer of 1.5 times the average tree height (approximately 15-20 m) along the eastern edge of the central woodlot. The subcommittee feels that these buffer widths will be sufficient to provide protection to the ESPA features.

The addendum indicates that the ESPA boundary generally conforms to the natural height of land or the catchment area of the kettle features on the subject property. The buffers proposed for the ESPA have been established relative to the adjacent features. It is recommended that the refined boundary of the Gilholm Marsh ESPA be staked in the field to the satisfaction of Regional staff and reflected on the site plan for the proposed gravel pit.

4. Zoning of Gilholm Marsh

A zone change from agricultural to extraction is required to permit the extraction of aggregate on the subject property. Even though the ESPA would not be included within the extraction area, it would be inappropriate to zone it for extraction. Consistent with Policy 4.3.6 of the ROPP, it is recommended that the ESPA, as refined on the subject property, be re-zoned as open space.

5. Haul Road across ESPA 58

The second item in the scoped EIS dealt with impacts associated with routing, constructing, and operating a haul road or some other system of conveyance across the northern part of ESPA 58 to access the proposed northeastern area'. The sub-committee was earlier concerned that the EIS did not give explicit consideration to alternative routes and the sub-committee requested that alternatives be considered so that the best location could be chosen for the haul road.

The Addendum report provides additional details regarding the location of the temporary haul road and notes that this is the only feasible route to move material from phase 1. According to the

Addendum report, potential alternate routes would either require access across adjacent land (not owned by the proponent) to the east, or through wetland or woodland habitats which would involve considerably more ecological disruption to the ESPA. Access to and from the north is not feasible due to the presence of the active CPR railway line; in addition those lands to the north of the railway line are no longer owned by the proponent and have been withdrawn form the proposal. The proposed crossing already exists as a farm laneway which would require upgrading to support the passage of heavy equipment.

As requested by EEAC, the Rehabilitation Plan now specifies that the haul route will be restored to meadow and prairie habitat.

5. Impacts on Features and Functions of ESPA 58

The third item addressed by the scoped EIS is 'impacts on the features and functions of ESPA 58 likely to arise from the development and operation of the proposed pit.'

The original EIS reported on background information and fieldwork on the biological resources of ESPA 58. The presence of some Regionally significant plant species already on record for ESPA 58 was confirmed. An additional fourteen Regionally significant plant species, including two provincially rare species, were found in the portion of ESPA 58 on the subject property.

The EIS noted that several Regionally Significant tree and shrub species such as Black Oak (*Quercus velutina*), Hackberry (*Celtis occidentalis*), and American Hazel (*Corylus americana*) have been observed in Hedgerows 27, 28, and 33. Although the hedgerows are not technically part of either ESPA 57 or 58 their presence on the boundary between the existing pits and the proposed pit extension area concerned the sub-committee as it was inferred that these hedgerows were to be removed to permit the excavations operations to proceed.

The Addendum report provides additional information regarding the flora and fauna found within and near the ESPAs on the subject and adjacent properties. Included among the concerns expressed in the previous report was the presence of Regionally Significant tree and shrub species within hedgerows (not located within either ESPA 57 or 58). The concern regarding the potential removal of these species are addressed noting that the significant species were only present in one of the three hedgerows, and that as this hedgerow is located on land no longer owned by the proponent it is no longer in the area to be licensed.

The sub-committee had previously expressed concern that the proposed grading and reconfiguration to convert the farm laneway into a haul road would disturb a 10 metre wide strip across ESPA 58. As some of the significant species as Sky-blue Aster are associated with the type of dry meadow habitat in this area, the sub-committee was of the opinion that the area to be affected needed to be assessed in detail to determine if this and potentially other significant species will be affected.

The Addendum includes provisions for the restoration of the temporary haul road to a meadow and prairie condition. These provisions are specified on the Final Rehabilitation Sheet submitted with the addendum report. The sub-committee support the inclusion of this requirement in the site plan.

The 2004 EIS included incidental wildlife observations but no detailed herpetofaunal survey was conducted to affirm the possible presence or absence of significant species. Background information reported in the EIS stated that certain Regionally significant amphibian species inhabit the Gilholm-Salisbury Provincially Significant Wetland, of which the Gilholm Marsh wetland is a part. Field conditions in ESPA 58 do not afford typical habitat for the Jefferson Salamander, *Ambystoma jeffersonianum – laterale*. In 2005, the sub-committee requested confirmation whether such

Regionally significant amphibian and reptile species, as Milk Snake (*Lampropeltis triangulum*) and Bull Frog (*Rana catesbeiana*) inhabit the wetlands on the subject property.

Additional surveys were conducted on the subject property in response to EEAC's concerns. Although the presence of Bullfrogs was confirmed on the subject property, Milksnakes were not observed. The Addendum report provides some discussion regarding the difficulties involved in direct observations of Milksnakes but indicates that there is ample suitable habitat throughout the ESPA area. Since the area where extraction is to take place tends to be unsuitable habitat for Milksnakes (i.e. agricultural land), it is concluded that extraction activities are unlikely to have a significant impact on Milksnakes that might be present on the subject property. The report also indicates that while it is possible that some Milksnakes might meet their demise as result of vehicular traffic on the temporary haul road through the ESPA, the long-term prospect for the species is positive as the eventual rehabilitation of the road is expected to result in an increase in overall suitable habitat. In addition, the rehabilitation will not only provide a more permanent connection within ESPA 58 but also improved connection with Barrie's Lake ESPA and the Blair-Bechtel-Cruickston Environmentally Sensitive Landscape to the north.

The EIS concludes that there will be no significant impact from the proposed aggregate extraction project on ESPA's 58 and 57, or on the features which led to their designation. It is a continuing concern with EEAC that such conclusions are drawn, and indeed are endorsed by EEAC, with little or no feedback later on to verify them. The sub-committee recommends that the site plan notes include a program developed to monitor biological features of the site, in addition to the groundwater monitoring already been recommended in the EIS. The biological monitoring program would focus on evaluating ecological indicators that could easily be monitored, and would allow for baseline comparison. Criteria used for selecting ecological indicators could include features or species identified as having significant status, a sensitivity to disturbance and/or specific habitat requirements. Other criteria may be warranted.

The sub-committee is also concerned about the eventual vegetation cover on the lands surrounding the kettle features. The sub-committee accordingly recommends that the region have some input into the landscaping component of the detailed rehabilitation plan for these areas.

6. Quality and Quantity of Water Flows

The fourth item of the scoped EIS dealt with 'maintaining the quantity and quality of groundwater discharge and surface flows from the subject lands to the regional aquifer and to the Provincially Significant Wetlands within ESPA's 58 and 57.' In the previous subcommittee report, concern was expressed at the intention to extract aggregate from below the water table and the potential impacts this would have on the hydrological regime of the ESPAs, wetlands, ponds and lakes on the subject and adjacent properties.

As the application has been modified to remove below water table extraction, many of the concerns of the subcommittee have been allayed regarding groundwater. In addition, the proponent submitted several items related to the hydrogeological component of the application. Based on a review of the material provided, the subcommittee is satisfied that the clarification provided does support above watertable extraction activities. In addition to the clarification, the consultants have provided a monitoring program that includes ongoing water level monitoring at Gilholm Marsh and Barrie's Lake as well as a full long-term monitoring program including monitoring at Gilholm Marsh, Barrie's Lake and five additional monitoring wells. Water levels and temperatures, water quality analysis and photodocumentation are included in the monitoring program.

Although the impacts from extraction above the water table are likely to be minimal given the hydrogeologic settings within the general physiography, that statement should be qualified with

regard to the potential sensitivity of the adjacent groundwater linkages. If the adjacent and contiguous wetlands are very sensitive to slight changes in water level beyond the natural trend, a cautionary approach needs to be taken in order to make allowances and alterations in response to observed negative impacts. For this reason a carefully designed and implemented monitoring program and an adaptive management approach is critical as the operation proceeds through the phased extraction. Extraction should begin as far as possible from wetland features so that initially there is a buffer of maximum size and the ongoing monitoring can be used to refine ongoing impact assessment.

The sub-committee recommends that water levels and quality at Gilholm Marsh and Barrie's Lake be monitored before, during and after extraction activities and that monitoring wells MW1 – MW5 also be maintained for ongoing groundwater quality and quantity monitoring. If negative impacts are identified, appropriate modifications to the operation will need to be made.

Further, given the fact that the subject property lies within a Sensitivity 2 Wellhead Protection Area, consideration should be given to excluding fuel storage and refuelling from the proposed pit operation areas.

8. Sedimentation into ESPA 58

The EIS was required to address 'methods for preventing sedimentation from the proposed extraction areas into ESPA 58'.

The recommended refinement of the ESPA boundary to coincide with the height of land between the extraction areas and the kettle features is intended to minimize the possibility of surface drainage, and hence sedimentation into the ESPA's. Nevertheless, in Phase 2, there are some areas where the land surface slopes into ESPA 58. North of the farm lane, the slope is at maximum about 5% (Sheet 1, PEIL, 2004), but mostly less than this. In the southern third of the Phase 2 area, the slope may be as high as 20%. This area of high slope is in an area designated to be licensed, but not excavated. The EIS does not give an indication of why this restriction on excavation is planned. The sub-committee felt that the issue of sedimentation into ESPA 58 from the Phase 2 area may have been addressed, but not adequately explained. The sub-committee supported having some part of the Phase 2 area as a buffer to the ESPA.

The boundary now proposed for the ESPA generally follows the limits of the major drainage areas supporting the wetland features, however, the proponent indicates that there are still four locations where the drainage comes from outside the proposed ESPA limits. Three of those four areas are within the proposed extraction limits, however, it is stated that "[t]? conditions of the adjacent lands are such that any potential impacts to the wetland from the interception of surface runoff would only occur under storm events or during spring freshette [sic] when the ground is frozen" (p.5). The report indicates that the decrease in potential runoff from these three areas would be minor (1.4%), and also notes that there is little potential for sediment-laden run-off into the wetlands as the adjacent lands are and will remain well vegetated. Although the report indicated that additional setbacks and buffers were not specified in these areas, the committee recommends that areas where sedimentation could occur into the ESPA be identified during the recommended boundary refinement process, and that, if necessary, the site plan include erosion and sedimentation control measures such as earthen berms in these localities to trap sediment and ensure that it does not have opportunity to accumulate even in the well vegetated areas.

The issue of sedimentation, as it relates to the construction and operation of the haul road, is dealt with above under the heading 'Haul Road across ESPA 58'.

9. Dust Control

Dust creation and dust control are issues with potential to impact vegetation and wildlife in the ESPA's, and also have the potential to adversely affect water quality of surface runoff and infiltration. Dust creation by heavy equipment, in close proximity to the vegetation and other features of the ESPA's, is a concern. The subcommittee's previous report noted that although dust control was proposed in the EIS, methods to be used were not specified.

The Addendum report and the Operational Notes indicate that an MOE approved dust suppressant will be used on internal haul roads as required.

10. Conclusion

Based on its review of the Addendum report, the subcommittee concludes that this application can be supported as revised. However, there are a number of recommendations that the subcommittee proposes to ensure that the features and functions of the ESPAs on and contiguous to the subject property are afforded an adequate level of protection. While many of these items have been encapsulated in the EIS and the Addendum report, the subcommittee feels it important to state them explicitly to ensure that they are not overlooked.

ATTACHMENTS

Figure 1. Revised Butler Pit proposed expansion relative to ESPAs 57 & 58.

Figure 2. Proposed Butler Pit Extension: Extraction Area and Phases.

PREPARED BY: Butler Pit Extension Sub-committee: Ted Creese (Chair), Kim Denouden, Les Misch, Derek Parks, Bill Blackport

Figure 1. Revised Butler pit proposed expansion relative to ESPAs 57 & 58. Extraction limits shown in black outline. (2006 imagery)

Region of Waterloo

Planning, Housing and Community Services

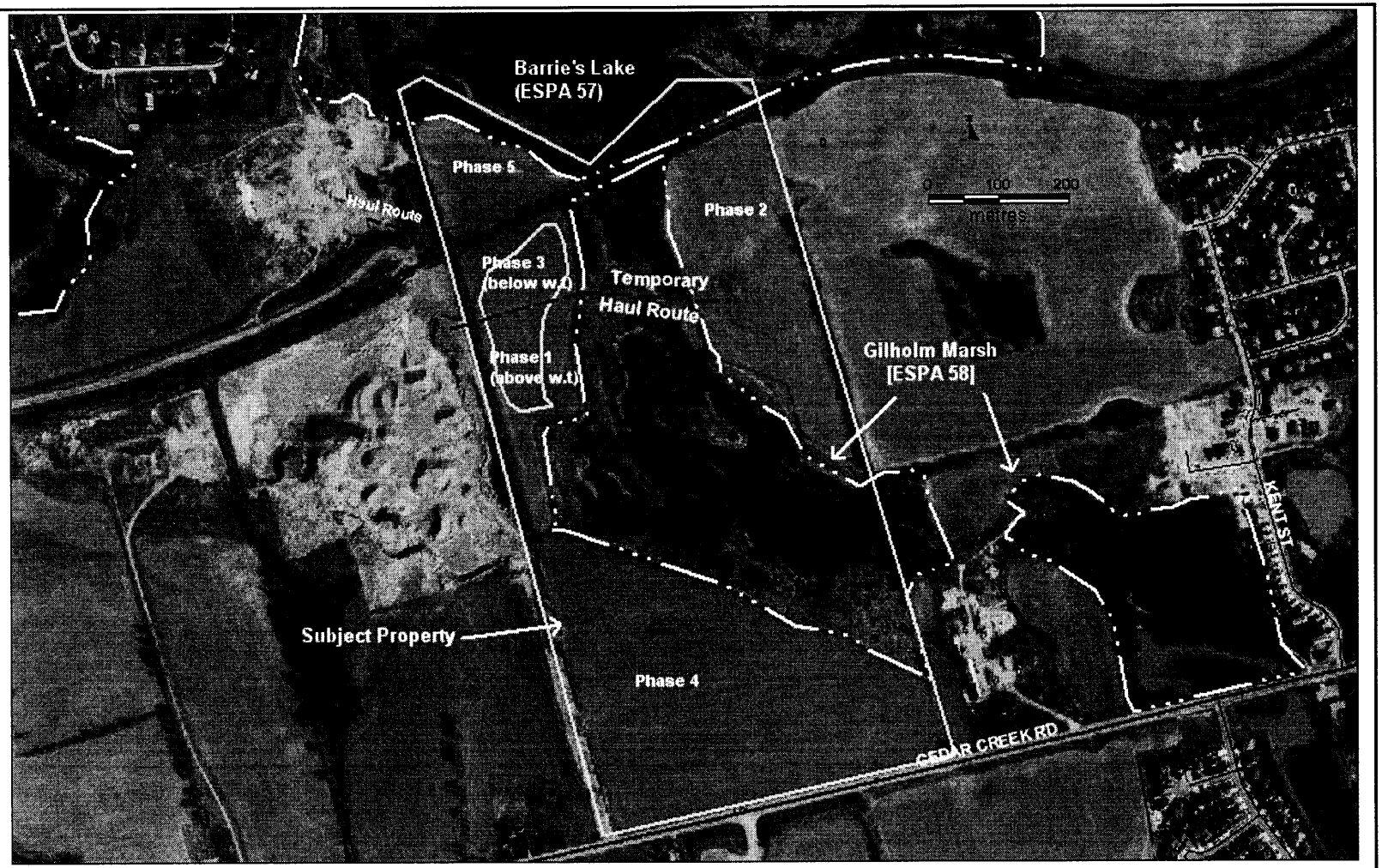

Figure 2. Proposed Butler Pit Extension: Extraction Area and Phases

Planning, Housing and Community Services

Region of Waterloo

Report: EEAC-07-001.1

REGION OF WATERLOO

PLANNING,HOUSING AND COMMUNITY SERVICES
Community Planning

TO: Chair Deanna Zenger and Members of the Ecological and Environmental Advisory Committee

DATE: February 27, 2007 **FILE CODE:** DO4-20058/DA

SUBJECT: **PROPOSED BUTLER PIT EXTENSION, 1180 CEDAR CREEK ROAD, NORTH DUMFRIES TOWNSHIP, GILHOLM MARSH ENVIRONMENTALLY SENSITIVE POLICY AREA [ESPA 58]**

RECOMMENDATION:

1. THAT the Ecological and Environmental Advisory Committee advise Planning, Housing and Community Services staff that it is of the opinion that the proposed extension of the Tullis Estates/Butler Pit located at 1180 Cedar Creek Road, North Dumfries Township is not expected to result in adverse environmental impacts, as defined in the Regional Official Policies Plan, on either ESPA 58 or ESPA 57 and that therefore the application may be supported pursuant to Policy 4.3.14 of the ROPP, subject to the following:

    1.1 That the refined boundary of the Gilholm Marsh E.S.P.A., corresponding generally to the height of land around the kettle features, be staked in the field to the satisfaction of Regional staff and reflected on the site plan for the proposed gravel pit.;

    1.2 That the lands within the Gilholm Marsh ESPA on the subject property be zoned open space as required by Policy 4.3.6 of the Regional Official Policies Plan;

    1.3 That, given the fact that the subject property lies within a Sensitivity 2 Wellhead Protection Area, that the Region strongly request that the Ministry of Natural Resources exclude fuel storage and refuelling from the proposed pit operation areas;

    1.4 That the pit licence provide for monitoring water levels and water quality at Gilholm Marsh and Barrie's Lake before, during and after extraction activities and that monitoring wells MW1 – MW5 also be maintained for ongoing groundwater quality and quantity monitoring;

    1.5 That 4 additional water monitoring wells be placed at locations identified in Figure 3 (Attachment 3) to ensure that a comprehensive long-term monitoring program of the groundwater quantity and quality (including but not limited to hydrocarbons) within the ESPA is achieved;

    Continuous water level loggers should be used at all monitoring wells to record water levels before, during and after extraction occurs. In addition, quarterly manual measurements should be made at all wells to verify recorded levels and for visual inspection of the monitoring sites;

    1.6 That areas where sedimentation could occur into the ESPA be identified during the boundary staking process (Item 1.1 above) and that the site plan identify such areas and specify appropriate erosion and sedimentation control measures such as the construction of earthen berms designed to address this potential risk;

    1.7 That the Region be involved in the preparation of a detailed rehabilitation plan for