

November 26, 2018
File: 113678238

Attention: Mr. Norris Morgan
CPE Oil & Gas Management Corporation
Suite 1180, 625 Howe Street
Vancouver, BC V6C 2T6

Dear Mr. Morgan,

Reference: Brazeau County – Secondary Emergency Egress Route

Stantec Consulting Ltd. has been requested by Coast Pacific Oil and Gas Management Corporation to provide a high-level opinion on the feasibility of utilizing an existing, semi-graded access road, as a secondary point of egress for residents located on Township Road (Twp Rd) 500, east of Rocky Rapids and Range Road (Rge Rd) 71 and south of Twp Rd 501A. This secondary point of egress would be considered “as needed” in times of an emergency evacuation of residents in the area, should Twp Rd 500 be otherwise blocked or impassible. There are approximately 15 affected properties within this area being considered.

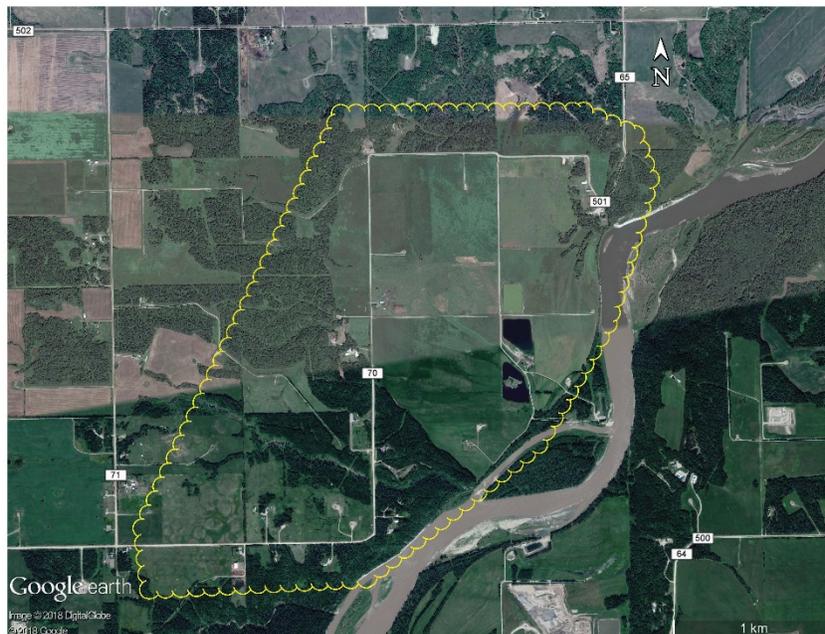


Figure 1- Area Plan

Reference: Brazeau County – Secondary Emergency Egress Route

The existing private access is located on the east end of Twp Rd 501A and connects north to Rge Rd 65. A site visit was conducted on November 20, 2018, mid-afternoon, to observe the condition and characteristics of the road and determine whether the road could be safely traversed by a vehicle. The roadway has been carved out along the edge of a forested embankment, sloping downward both north to south and east to west. The road was snow covered at the time of review, however travelled frequently enough by vehicles to present clear, packed tracks for a vehicle in a single direction. It is assumed that the access road has a graveled top surface. During the review, two other vehicles were witnessed using the roadway; one travelling north, while the other travelling south.



Figure 2 – Project Site Review Area

The elevation of the roadway increases from south to north as it climbs the embankment, with an elevation change of approximately 36m over a length of 485m (referencing Google Earth topography). The roadway varies in grade with both steep and flatter sections. The site review was conducted using a mid-sized SUV and did not experience any difficulties climbing or descending the access road under the packed snow and icy conditions. It should be noted that travelling along Rge Rd 70, approximately 500m north of Twp Rd 500, the existing roadway has vertical characteristics similar to that of the access road but accommodating two-way traffic.

Reference: Brazeau County – Secondary Emergency Egress Route

The private access roadway has a wide 90 degree turn at the base of the hill, and slight curvature ascending the hill. The road width varies slightly, but consistently appears greater than 4m in surface width. The roadway slopes from east to west with a shallow ditch on the east side of the access road, however no formal drainage conveyance system was apparent, and surface water appears to shed across the roadway in locations that are generally flatter. Approximately three quarters of the way up the hill, a partial wash out of the west half of the roadway exists that has been fenced off with traffic barricades and warning signs. This section of roadway is still accessible as vehicles hug the east side of the road to pass the area safely.



Figure 3 – Access Road Entrance – Looking West



Figure 4 – Wash Out area – Looking South

Reference: Brazeau County – Secondary Emergency Egress Route



Figure 5 – North of Wash Out Area – Looking South



Figure 6 – Top of Escarpment – Looking South

The site review was conducted under less than ideal conditions due to snow and ice being present on the road surface. The condition of the road presented minimal concerns for a driver of a passenger vehicle in a single direction. However, in its current state, and under conditions of snow and ice, it is less likely that a pick-up truck and trailer could climb or descend the hill safely, and likely require minor modifications to improve operations. If the roadway were to be considered as a formal egress route for area residents, under emergency conditions, modifications to the access road would be recommended to ensure reliability for future operations. Improvements would include, but are not limited to;

- Minor regrading of short steep sections to maintain vertical grades of less than 8%
- Minor regrading of the east ditch to provide consistent conveyance of drainage

Reference: Brazeau County – Secondary Emergency Egress Route

- Drainage culverts under the road where required
- Reconstruction of wash out area, to repair and strengthen road cross section

Although partially protected by the surrounding trees and forest, heavy snow fall in the region could render the roadway impassible for regular passenger vehicles. Although statistically unlikely to occur at the time of an emergency egress, alternative measures should still be considered for the possibility of occurrence. Options could include the use of some form or tracked vehicle to carry passengers to the top of the hill and beyond as required. These solutions would be dependent on the availability to have a vehicle on site, and available operator. Alternatively, a formal winter maintenance program could be considered to ensure consistent access is available

Should further considerations be made towards formalizing the above-mentioned access road, further assessment would be required to establish specific areas of improvements. A detailed survey would be required along with approvals and easements established to formalize and define the operations of the proposed roadway.

Regards,



J. Brad Tiedemann, P.Tech(Eng.)

Associate

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Attachment:

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