

Final

# Planning Justification Report - Addendum Proposed Hallman Pit 1894 Witmer Road, Wilmot Twp.

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Prepared for Jackson Harvest Farms Ltd.  
by IBI Group  
October 21, 2020

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# 1 Introduction

On September 8, 2020, the Region requested an addendum to the initial Planning Justification Report for the Jackson Harvest Farms Ltd. – proposed Hallman Pit, dated October 11, 2019, to specifically address Regional of Waterloo – Regional Official Plan Policy 9.C.4 regarding potential cumulative impacts. The policy states:

**“9.C.4**

*The studies noted in Policies 9.C.3 and 9.D.1 will take into account the potential cumulative impacts that may result from a proposed new mineral aggregate operation when added to other past, present and proposed future mineral aggregate operations in the vicinity of the proposed new operation. The appropriate level of detail, analysis boundaries and baseline data to be used in the cumulative impact assessment will be determined by the Region, Area Municipalities, the Grand River Conservation Authority and the owner/applicant as part of the pre-submission consultation meeting.”*

Based on the above, it is recognized that there are numerous existing licensed pits located in the vicinity of the proposed Hallman Pit which elicits the question of cumulative impacts relative to potential impacts such as noise, dust, traffic, etc. The licensed properties are all located south of Witmer Road and include the following, and which are illustrated on the attached Figure 1:

- A. Cattleland Pit  
The Warren Paving & Materials Group Limited, a subsidiary of Lafarge Canada Inc.  
ARA Licence No. 10600  
Licensed Area: 96.3 hectares  
Class A, Category 2 Pit (pit below water)  
Annual Tonnage: 500,000 Tonnes  
Above Water Table with limited below water table extraction.
- B. Barnes Pit  
The Warren Paving & Materials Group Limited, a subsidiary of Lafarge Canada Inc.  
ARA Licence No. 5725  
Licensed Area: 55.5 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 454,000 Tonnes
- C. Seibert Pit  
The Warren Paving & Materials Group Limited, a subsidiary of Lafarge Canada Inc.  
ARA Licence No. 5553  
Licensed Area: 38.4 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 500,000 Tonnes
- D. Voisin Pit  
Spring Valley Trout Farm Ltd.  
Operated by Steed and Evans  
ARA Licence # 608502  
Licensed Area: 27.7 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 200,000 Tonnes

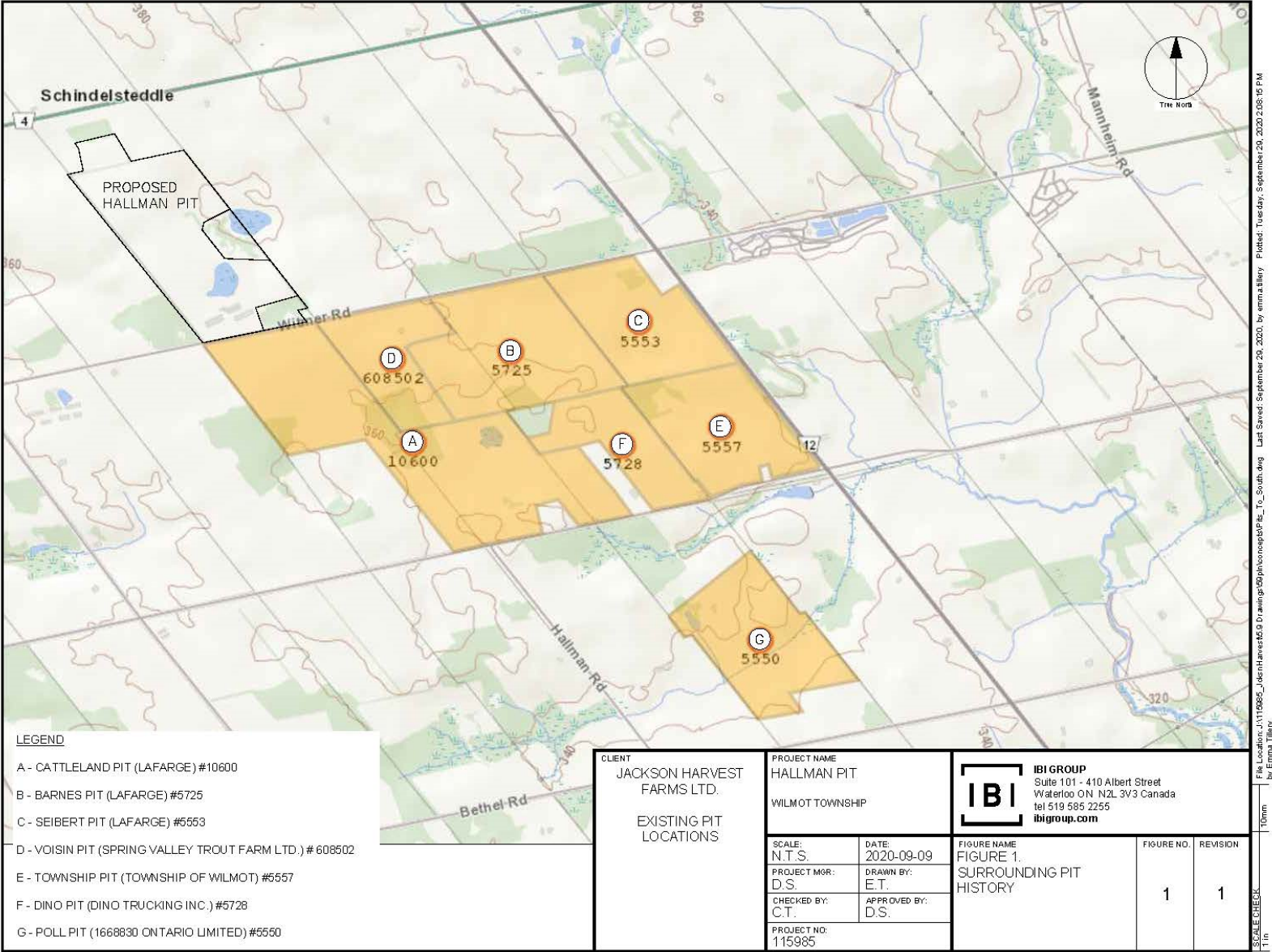


Figure 1 Existing Pit Locations

- E. Township Pit  
Corporation of the Township of Wilmot  
ARA Licence # 5557  
Licensed Area: 41.8 hectares  
Class A, Category 2 (pit below water)  
Annual Tonnage: 75,000 tonnes
- F. Dino Pit  
Dino Trucking Inc.  
ARA Licence # 5728  
Licensed Area: 25.2 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 250,000 Tonnes
- G. Poll Pit  
1668830 Ontario Limited  
ARA License # 5550  
Licensed Area: 45.7 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 50,000 Tonnes

## 2 Status of Existing Pit Operations

Overall, these pits have a total licensed area of 330 hectares with a collective annual extraction limit of just over 2 million tonnes. What is not accessible to the public is the annual production volumes of each of these operations as they are exempt from the Freedom of Information Act.

It is our understanding that the individual status of these pits is as follows:

### A. Cattleland Pit:

This pit was licensed in late 1991 but has never been opened for active extraction. The licensed and extraction boundary extends from Huron Road to the south to Witmer Road to the north and as such, this pit is the closest in proximity to the proposed Hallman Pit. The Site Plans confirm that all extracted material is required to be shipped through the Barnes Pit to the Seibert Pit for processing with the ultimate product shipped to the market via their Queen Street access point.

Of interest, the mid-portion of the site is approved for both limited woodlot removal and below water table extraction. The below water table extraction will primarily create a shallow wetland/marsh about 0.5 metres deep being approximately +/-5.0 hectares in size in addition to a deeper 2.0 hectare pond proposed to be about 6.0 metres in depth. The marsh/pond will be surrounded by an extensive replanting program initially using tree-stock from the existing Phyer and Weaver woodlots.

Extraction in close proximity to the proposed Hallman Pit is identified as Phase 10. However, in advance of Phase 10, and once extraction begins in the northern half of the site (i.e., Phase 6), and during the entire extraction of Phases 6 through 9, a 3.0 metre berm (minimum elevation of 375.0 metres) will be in place at the southern limit of the proposed Phase 10. During the extraction of these phases, extraction (and the related equipment) will proceed to as much as 18.0 metres below the height of that berm.

Resource quality information appears to have been insufficient at the time of licensing as the ultimate extraction of Phase 10 remains contingent on the exposure of an open pit face in the abutting phases (Phases 8 and 9) before extraction would be considered, and then possibly initiated. Phase 10 can be characterized as 'arc shaped' and varies in distance from Witmer Road from about a minimum of 120.0 metres at the mid-portion of the Witmer

Road frontage and increases to 250.0 metres at the west and east site limits. If Phase 10 were to be initiated, the above noted temporary 3.0 metre berm will be relocated and re-constructed to be parallel along the Witmer Road frontage and extraction would extend as deep as 357 masl.

Although limited processing is permitted elsewhere on the site, none is permitted in Phase 10 as all that material must be a 'load and haul' operation with the aggregate placed directly onto a conveyor belt system to be conveyed to the processing area within the Seibert Pit. Based on this, Phase 10 site equipment will be limited to a front-end loader working at lowest pit floor elevation and at the pit face with no processing equipment or haul trucks and therefore no internal haul road.

The Site Plans make no reference to any specific dust control measures and therefore the prescribed dust mitigation standards of the Aggregate Resources Act apply which state:

*3.1 Dust will be mitigated on site.*

*3.2 Water or another provincially approved dust suppressant will be applied to internal haul roads.*

Of note, the lowest extraction depth of the Hallman Pit is 354.5 masl, while remaining 1.5 metres above the seasonally high water level and for the Cattleland Pit, it is 350.0 masl, thereby illustrating the overall north to south sloping of the groundwater. Furthermore, the confirmed groundwater elevation at the southern extent of the Hallman Pit is 352.9 masl, and the open water ponds in the mid-portion of the Cattleland Pit are documented to be 347.5 masl.

The final rehabilitation plan for the whole northern portion of the Cattleland Pit is proposed to be agriculture. Although numerous internal ecological linkages are planned for the Cattleland site, none were envisioned to extend northward to link with woodlots north of Witmer Road.

If the Cattleland Pit site were to be opened for active extraction in the very near future, and if extraction proceeded close to the maximum capacity of 500,000 tonnes/year (being uncharacteristic to their most recent historical operational levels), the extraction of Phase 10 might potentially coincide with the extraction of the most southern extraction phase of the Hallman Pit (Phase 4).

## **B. Seibert Pit.**

This pit was initially licensed under the Pits and Quarries Act, so we know it has been licensed for well over 40 years and includes recycling (concrete, asphalt) and the front portion of the site is zoned to permit an asphalt plant which is currently operated by Coco Paving. Anecdotally, the level of current extraction appears low, but the administration, operational, asphalt plant and processing area continues to be quite active. All pit traffic is directed out to Queen Street.

Physically the site is about 1.75 kilometres from the proposed Hallman Pit. The life expectancy of the pit is unknown but it would appear that there remains significant site reserves and the processing area will continue to be the primary location for processing all material from both the Barnes Pit and the Cattleland Pit.

The Site Plans do not make any reference to any specific dust control measures, and as such, the prescribed dust mitigation standards of the Aggregate Resources Act will apply which state:

*3.1 Dust will be mitigated on site.*

*3.2 Water or another provincially approved dust suppressant will be applied to internal haul roads.*

The final rehabilitation of the site is agriculture.

**C. Barnes Pit:**

The Barnes Pit was initially licensed under the Pits and Quarries Act in February 1980 and as such, has been operational for over 40 years. Based on current aerial photography, this pit is only partially extracted but little active extraction is occurring. Access is available directly onto Witmer Road via an existing gated access, but the Site Plans limit such use only if access to the Siebert Pit were to be unavailable, which seems unlikely since Lafarge owns both sites.

Extraction closest to the Hallman Pit corresponds with Phase III, being the third of a total of 5 phases. Dust mitigation is detailed on the Site Plans as 'water or an approved suppressant'. The site is also permitted to import inert fill for rehabilitation (side slopes) purposes.

The Site Plans confirm that the primary rehabilitation of the site is to be agriculture with a secondary after use being reforestation.

**D. Voisin Pit:**

This Pit was licensed just over 10 years ago by Spring Valley Trout Farm Ltd. and is operated by Steed and Evans Limited and since opening, extraction has been consistent and active. This pit has access directly onto Witmer Road and the road surface was upgraded between the pit entrance to Regional Road 12 (Queen Street) to eliminate the spring half load restriction.

Processing is limited to the middle portion of the site with specific noise restrictions. The extraction phase closest to the Hallman Pit (Phase 2) includes an operational restriction of no processing and therefore this phase is limited to only be a 'load and haul' operation.

Extraction of the southern portion includes the partial removal of a woodlot and the creation of three shallow ponds. The Site Plans do not make any reference to any specific dust control measures, and as such, the prescribed dust mitigation standards of the Aggregate Resources Act which state:

*3.1 Dust will be mitigated on site.*

*3.2 Water or another provincially approved dust suppressant will be applied to internal haul roads.*

Final rehabilitation will be agriculture in addition to the reforestation/ephemeral ponds in the southern portion of the site that will provide connectivity to the Cattleland Pit rehabilitation as well as an ecological linkage/hedgerow along the west boundary of the site linking up to Witmer Road.

**E. Township Pit:**

The Township Pit has been in use for many years, possibly over 40 years.

The northern portion of the pit is approved for extraction below the water table. We understand that material from the pit is primarily used to top-dress the few remaining local gravel roads and maintain shoulders of the larger network of local paved roads. The property has a gated Queen Street access but the weigh scales front onto Huron Road, therefore, either access could be used. It is our understanding that the pit is sporadically used throughout the year and that activity is light. The site is approximately 2.2 kilometres from the Hallman Pit

Due to an anticipated low rate of annual extraction, it is our expectation that the property continues to have significant reserves.

The final land use outside of the proposed 5.2 hectare pond area is for agriculture.

## **F. Dino Trucking Pit.**

This pit was initially licensed about 1983 when owned/operated by SWAB Investments (initially referred to as the Hallman Pit) but has been owned/operated by Dino Trucking Inc. for the past several decades. The site is approximately 1.5 kilometres from the proposed Hallman Pit and the intervening active operation (Voisin Pit) is almost 800.0 metres away. Anecdotally, and in observing recent aerial mapping, the pit appears to continue to have significant reserves.

Site access is directly onto Huron Road. The Site Plans do not make any reference to any specific dust control measures, and as such, the prescribed dust mitigation standards of the Aggregate Resources Act will apply which state:

*3.1 Dust will be mitigated on site.*

*3.2 Water or another provincially approved dust suppressant will be applied to internal haul roads.*

The Site Plans require the lands to be fully rehabilitated back to agriculture.

## **G Poll Pit:**

This pit has been rarely active for many years. Although the Site Plans permit access directly to Huron Road, that entrance is now overgrown and no longer in use and access is onto Bethal Road to the south. Anecdotally, we understand the site is only occasionally used for testing 'aggregate stockpile stacking' equipment. The site is about 2.9 kilometres from the proposed Hallman Pit with existing woodlots in the intervening lands.

The Site Plans do not make any reference to any specific dust control measures, and as such, the prescribed dust mitigation standards of the Aggregate Resources Act will apply which state:

*3.1 Dust will be mitigated on site.*

*3.2 Water or another provincially approved dust suppressant will be applied to internal haul roads.*

The Site Plans require the lands to be fully rehabilitated back to agriculture.

In summary, it is acknowledged that when looking at the collective limits of all the licenses and/or their 'limits of extraction', that these pits occupy a substantial footprint on the landscape and certainly have the potential to display cumulative impacts if they were to be operated simultaneously and especially at their maximum annual extraction capacity.

However, when looking at these sites as a snap-shot of their existing activity levels, or at the activity level that has been well established over the past decade or more, they become small isolated individual sites with moderate to little activity, limited to:

- The Lafarge/Coco Paving operation/activity being mostly within the Seibert Pit and mostly focused at the Regional Road 12 (Queen Street) access point,
- The Steed & Evans operation of the Voisin Pit which is consistently busy but with a relatively small footprint, and with truck activity focused along their Witmer Road haul road extending to Regional Road 12 (Queen Street).
- The Dino Trucking operation has moderate production throughout the pit footprint with trucking directed onto Huron Road and to Regional Road 12 (Queen Street).
- The Township Pit operation has low activity with equally low traffic onto Huron Road and then to Regional Road 12 (Queen Street).

Although the balance of this report will examine the 'worst-case scenario', in terms of the potential for larger aggregate production throughout all the pits, it is our opinion that significant

weight must be given to the ground-truthing facts that these pits have historically and continue to operate at relatively low extraction levels.

## 3 Technical Studies Undertaken

The following provides an overview of how the Hallman Pit, in conjunction with the assembly of seven licensed properties has addressed the potential for cumulative impacts.

### 3.1 Noise

A Noise Study undertaken for the proposed Hallman Pit was completed by HGC Engineering Ltd. dated September 2019. It is acknowledged that the initial report did not specifically address cumulative impacts with the pits to the south. However, as noted above:

- Cattleland: If the Lafarge were to begin opening the Cattleland Pit for extraction imminently, it is theoretically feasible that its northern phases, and possibly Phase 10, could be in operation when the Hallman Pit is operating in their final Phase 4. However, based on noise study recommendations, restrictions were imposed on this pit at the time of its licensing and include:
  - Construction of a 3.0 metre high berm along the southern limit of Phase 10 to be in place during the excavation of Phases 6-9,
  - Excavation of Phases 6-9 would occur up to 18.0 metres below grade.
  - Subject to confirmation of aggregate being present in the exposed pit faces of Phases 8 and 9, then Phase 10 could proceed.
  - If Phase 10 were to open, the 3.0 metre high berm would be re-constructed to the northern property boundary adjacent to Witmer Road.
  - Extraction of Phases 10 would be limited to a 'load and haul' operation with excavated material being placed on a conveyor and conveyed to the Seibert Pit, therefore resulting in no processing equipment or haul trucks being present.
- Voisin Pit: The Voisin Pit has been very consistent and active and at the current rate, it is unlikely that this pit will still be operational when the Hallman Pit is operating their Phase 4 in proximity to Witmer Road. However, based on noise study recommendations, restrictions were imposed on this pit at the time of its licensing and include:
  - All processing is restricted to an area approximately 185 metres south of Witmer Road and sited behind a 4.0 – 8.0 metre high interim berm.
  - Prior to opening Phase 2, a 3.0 metre high perimeter berm will be constructed along the Witmer Road perimeter.
- No processing will be permitted and therefore only limited equipment will be present.

Notwithstanding that both of these pits were designed to meet MECP guidelines, it is possible that simultaneous operations could occur in abutting phases (i.e., Cattleland - Phases 8-10, Voisin - Phase 2, Hallman - Phase 4), sometime during the life time of the pits and equally, there is the possibility that MECP noise guidelines based at that future date, could potentially be breached. To safeguard against that possibility, the following new noise recommendation is being proposed.

5. *The Licensee shall undertake a noise audit of the Hallman Pit operation to ensure MECP noise guidelines continue to be met upon the opening (active extraction) of the Cattleland Pit (ARA License 10600) Phase 8, Phase 9 and Phase 10, and upon*

*the opening of the Voisin Pit (ARA License 608502) Phase 2. The noise audit shall be undertaken by a qualified acoustical engineer with the results submitted to MNRF, the Region of Waterloo and the Township of Wilmot. Should MECP guidelines be found to be breached, the Licensee shall undertake operational design changes to ensure compliance.*

Although each individual pit has been designed to meet MECP noise guidelines, and the low possibility of the extraction phases in proximity to Witmer Road occurring simultaneously, with the inclusion of the above note as a preventative safeguard, it is our opinion that any potential for cumulative impacts related to noise will be fully addressed.

## 3.2 Dust

As noted above, in addition to any specific dust notes that may apply, prescribed dust mitigation standards of the Aggregate Resources Act that apply to all licensed pits and quarries state:

*3.1 Dust will be mitigated on site.*

*3.2 Water or another provincially approved dust suppressant will be applied to internal haul roads.*

Although some of the existing pits provide additional guidance related to dust mitigation, (use of water), the primary enforcement tool is contingent on the ARA prescribed condition.

Also as noted above, due to operational restrictions within the Voisin and Cattleland Site Plans for those phases in close proximity to Witmer Road, the opportunity of fugitive dust is reduced through the requirement for limited excavation equipment and the use of conveyor belts.

It is acknowledged that GHD Limited did not specifically address cumulative impact in their initial report but have undertaken a revision to the Best Management Practices Plan (Revision 2) which is attached hereto. In summary, the updated report identifies that the potential for adverse effects resulting from cumulative impacts is expected to be minimal and that the construction and operation of the Site will not change this understanding.

Therefore, it is our opinion that there will be no cumulative impacts related to dust.

## 3.3 Vibration

The local deposit is a glacial outwash meaning that it is a sand and gravel deposit which is further defined as un-consolidated deposit, and these sites are referenced as a pit. In contrast is a bedrock deposit which is defined as a consolidated deposit and these sites are referenced as a quarry.

The operational difference between these two is that the industry standard technique to extract consolidated rock is through blasting of the rock which is then recovered by large front-end loaders and the rock requires what is known as a primary crushing to break the rock down so that it can be further processed by a secondary crusher into specific aggregate products. The result of the blasting is that over-pressure and ground-vibration can occur if the blasting program is not carefully monitored and constantly recalibrated. For almost all proposed quarry operations in the province, a Blasting Report is required.

For any sand and gravel pit such as the proposed Hallman Pit, the unconsolidated sand and gravel deposit can be easily retrieved directly through the use of a front-end loader and much less processing (crushing) is required.

Therefore, because the local deposit is not bedrock, and because blasting of the resource is not required, no vibration study was required and ultimately, there can be no cumulative impacts related to vibration due to blasting.

### 3.4 Hydrogeology

With regard to Hydrogeology, please refer to Harden Environmental Services Ltd.'s memorandum dated September 14, 2020 in Appendix A.

Based on the Harden Environmental memo, there will be no cumulative impacts related to hydrogeology.

### 3.5 Traffic

In terms of cumulative impacts due to traffic, the only existing and future traffic that does and will utilize the common road (Witmer Road) with the proposed Hallman Pit, is from the Voisin Pit (operated by Steed & Evans). For completeness, we confirm that the other pits do or will egress as follows:

- Cattleland Pit
  - Unopened but restricted to Regional Road 12 (Queen Street) via the Barnes and Seibert Pits.
- Barnes Pit
  - Restricted to Regional Road 12 (Queen Street) via the Seibert Pit.
- Seibert Pit
  - Restricted to Regional Road 12 (Queen Street)
- Corporation of the Township of Wilmot
  - Primarily onto Huron Road but also has direct access to Queen Street.
- Dino Trucking Pit
  - Restricted to Huron Road and then to Regional Road 132 (Queen Street).
- Poll Pit (1668830 Ontario Limited)
  - Onto Bethel Road

Therefore, all the other pit truck traffic is restricted/directed to Regional Road 12 (Queen Street) by other access points other than Witmer Road (refer to Figure 2).

Given that the only cumulative traffic volumes onto Witmer Road are from the Voisin Pit, and we confirm that the Traffic Impact Study undertaken by Paradigm Traffic Solutions Inc. dated February 2019, did include those truck volumes. Furthermore, the Traffic Impact Study has been reviewed and approved by the Region of Waterloo and by the Township of Wilmot's peer review consultant, Aecom.

Therefore, it is our opinion that there will be no cumulative impacts related to traffic.

### 3.6 Witmer Road Geotechnical

As noted above, the only truck traffic that jointly uses Witmer Road is the Spring Valley Trout Farm Inc.'s Voisin Pit and as part of that application, Witmer Road was upgraded from that pit entrance to Regional Road 12 (Queen Street).

As part of the Hallman Pit application, CMT Engineering Inc. completed a geotechnical investigation of Witmer Road that included the portion of Witmer Road from the proposed Hallman Pit to the Voisin Pit as well as from the Voisin Pit to Regional Road 12 (Queen Street). Based on their assessment, the length of road from the Hallman Pit to the Voisin Pit will require upgrading as will the balance of the haul road to Regional Road 12 (Queen Street).

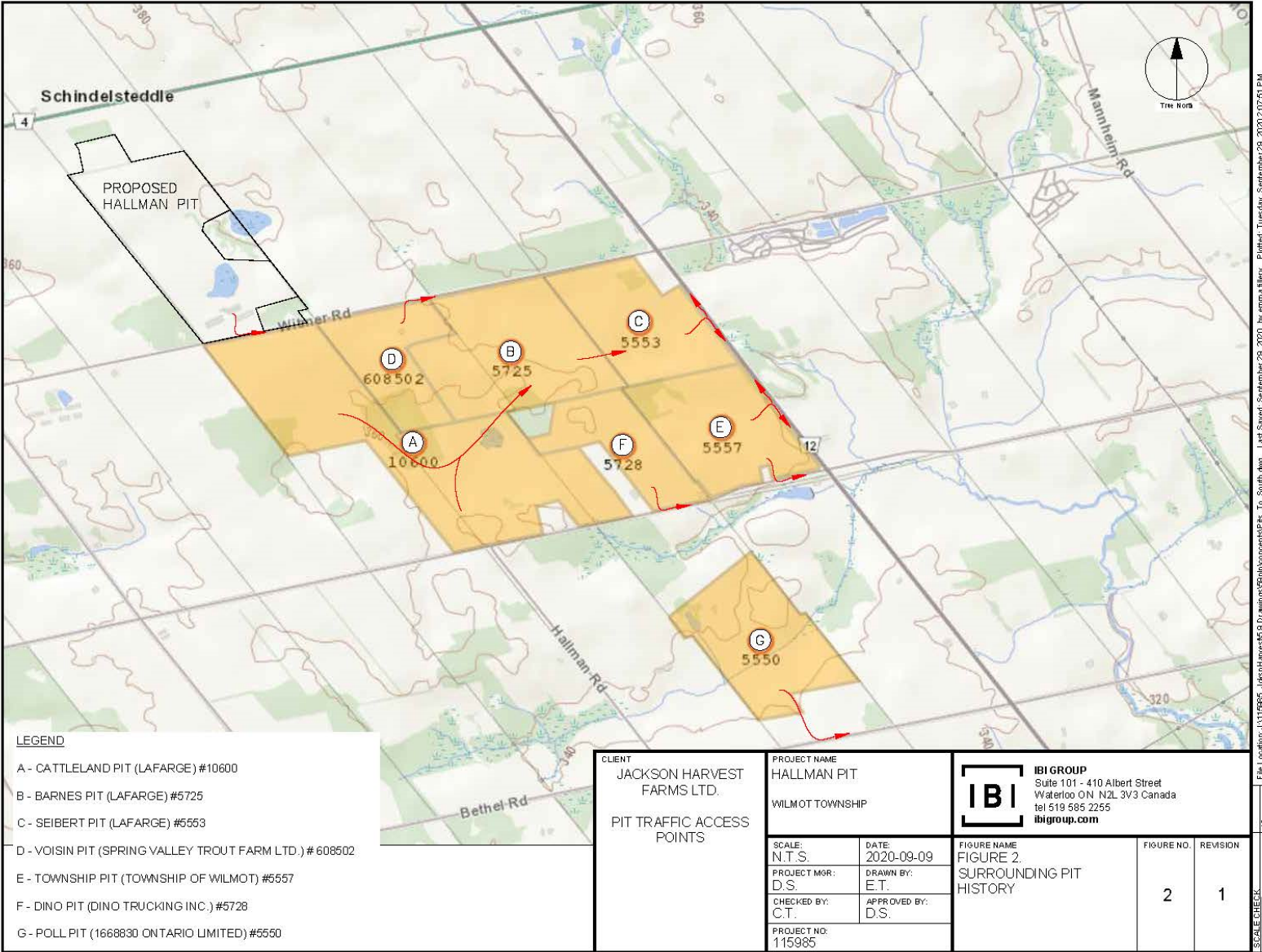


Figure 2 Pit Traffic Access Points

The Township undertook a peer review of the proposed Witmer Road upgrades (GHD Limited) to accommodate truck traffic from both pits and we confirm that they are both in agreement with the recommended upgrades. Furthermore, Jackson Harvest Farms Ltd. has agreed to enter into an agreement with Wilmot Township to ensure that the required upgrades are completed subsequent to the licensing of the lands by MNRF and prior to Witmer Road being used during the half load restriction period.

Therefore, subject to the agreed upon upgrades to Witmer Road from the proposed Hallman Pit entrance/exit to Regional Road 12 (Queen Street) and taking into consideration traffic loads from the existing Voisin Pit, it is our opinion that there will be no cumulative impacts related to the geotechnical integrity of Witmer Road.

### 3.7 Natural Environment/EIS

The initial Natural Environment Report Level 1 and 2 (EIS) was undertaken by Dance Environmental Inc., dated September 2019.

With regard to the potential for cumulative impacts, Dance Environmental has prepared a memo (attached hereto as Appendix C) which concluded that:

*From an ecological perspective, the presence of other aggregate operations south of Witmer Road should be considered within the overall landscape context. Factors to consider would include ecological linkages to the south such as watercourses, valleylands, hedgerows and woodlands.*

*A review of Figure 2 present in the Dance Environmental Inc. (2019) EIS prepared regarding the proposed Hallman Pit, reveals that there are no significant ecological features present immediately south of Witmer Road that provide significant linkage to the ecological features present on the Hallman Pit site. Lands to the south were planted to soybeans during the 2020 growing season.*

*A site visit on September 11, 2020, revealed that there is currently a narrow sparsely-treed hedgerow present along the western margin of the Cattleland Pit (Lafarge), south of Witmer Road. This woodland is large enough that it is expected to qualify as a Significant Woodland under regional policy. It is probable that some mobile wildlife species capable of crossing the Witmer Road right-of-way currently move north and south between the Hallman Pit property and the woodland south of Witmer Road, but this is probably at a very low level of activity. We did not observe significant wildlife movement in this area during inventories associated with preparation of the EIS.*

*Setbacks between extraction and the western margin of the Cattleland property would allow for maintenance of this corridor and continuation of any wildlife movement.*

Therefore, it is our opinion of that there will be no cumulative impacts related to the natural environment.

### 3.8 Archaeology

The archaeological investigations initiated by Jackson Harvest Farms included a review of other archaeological sites within 1.0 kilometre of the site, what the report documented is noted below.

Excerpt from Appendix E ii) of the Planning summary Report entitled Archaeological Assessment Stage 1 and 2, prepared by Archeological Research Associates Ltd. dated November 16, 2018.

#### 1.3.2 Registered or Known Archaeological Sites

*The Ontario Archaeological Sites Database and the Ontario Public Register of Archaeological Reports were consulted to determine whether any registered or known archaeological resources occur within a 1 km radius of the study area. The available MTCS search facility returned a total of ten registered archaeological sites*

*located within at the least a 1 km radius (the facility returns sites in a rectangular area, rather than a radius, potentially resulting in results beyond the specified distance). No other previously identified sites (i.e., unregistered sites) were noted within a 1 km radius during the research component of the study. These sites are summarized in Table 3.*

*Table 3: Registered or Known Archaeological Sites*

| <b>BORDEN<br/>NUMBER</b> | <b>SITE<br/>NAME</b>   | <b>TIME<br/>PERIOD</b> | <b>AFFINITY<br/>SITE</b> | <b>TYPE</b>              | <b>DISTANCE<br/>FROM<br/>STUDY<br/>AREA</b> |
|--------------------------|------------------------|------------------------|--------------------------|--------------------------|---------------------------------------------|
| AiHd-18                  | Baden Hill             | Woodland               | Late<br>Neutral          | Village                  | > 1 km                                      |
| AiHd-74                  | Baechler<br>Woodland   | Late,<br>Woodland      | Middle<br>Indigenous     | Camp/Campsite            | > 1 km                                      |
| AiHd-81                  | Hofstetter             | Pre-Contact            | Indigenous<br>Burial     | Cemetery                 | > 1 km                                      |
| AiHd-82                  | Sluyter                | Woodland               | Late<br>Indigenous       | Village                  | > 1 km                                      |
| AiHd-83                  | Hunsburger<br>Creek    | Archaic                | Indigenous               | Camp/Campsite            | > 1 km                                      |
| AiHd-84                  | Warren<br>Cattleland 1 | Other                  | Unspecified              | Camp/Campsite            | > 1 km                                      |
| AiHd-85                  | Warren<br>Cattleland 2 | Unspecified            | Unspecified              | Unspecified              | > 1 km                                      |
| AiHd-87                  | Warren<br>Cattleland 4 | Woodland               | Late<br>Indigenous       | Unknown                  | > 1 km                                      |
| AiHd-90                  | Ranger<br>Woodland     | Late<br>Indigenous     | Iroquoian                | Camp/Campsite,<br>Midden | > 1 km                                      |
| AiHd-148                 | Freeman                | Archaic                | Middle<br>Indigenous     | Findspot                 | 50–300 m                                    |

None of these archaeological sites are located within or immediately adjacent to the project lands; accordingly, they have no potential to traverse the study area. The Freeman site (AiHd-148) is located within 300 metres of the study area, however, and must be considered as a relevant feature of archaeological potential.

Therefore, it is our opinion that there is no cumulative impacts related to archaeology.

### 3.9 Lifespan of Pit/Rehabilitation

**Lifespan:** As documented in the Planning Summary Report (Section 4.0) the lifespan of the pit is estimated to be a minimum 19 years. Jackson Harvest Farms Ltd. has no other inventory of aggregate operations in Waterloo Region and as such, this site will not be held in reserve and is anticipated to be actively and continuously extracted to accommodate the local, regional and provincial markets. The potential duration of all the existing pits is unknown.

**Rehabilitation:** Provincial, Regional and Wilmot Township policies are very specific inasmuch that in prime agricultural areas, the subject lands are to be returned to an agricultural use as noted below:

### Provincial Policy Statement

#### 2.5.4.1

*In prime agricultural areas, on prime agricultural land, extraction of mineral aggregate resources is permitted as an interim use provided that the site will be rehabilitated back to an agricultural condition.*

### Regional Official Plan Policy

#### 9.F.1

*All proposals for new mineral aggregate operations, including wayside pits and quarries, will include a rehabilitation plan to the satisfaction of the Region and Area Municipalities that will ensure that:*

- (a) progressive rehabilitation will be carried out whenever feasible so that depleted areas are restored while extraction continues in other areas of the site;*
- (b) final rehabilitation will comply with the land use designations contained in this Plan and Area Municipal official plan, and be compatible with the character of surrounding land uses;*
- (c) within the Prime Agricultural Area and Rural Areas designations, rehabilitation to agriculture will be the first priority, as follows:*
  - i) within the Prime Agricultural Area, substantially the same land area will be rehabilitated back to an agricultural condition to allow for the same range and productivity of crops common in the area; and*

### Township of Wilmot Official Plan

#### 7.2.2

*New mineral aggregate extraction within the Prime Agricultural Area and Rural Areas designation may be permitted as an interim use, subject to the policies of this Plan, provided that agricultural rehabilitation is maximized.*

From a land-use policy stance, the post-extractive final land use is required to be agriculture. Therefore, regardless of what the existing or planned post-extractive land uses are for the existing licensed pits south of Witmer Road, the rehabilitation of the Hallman Pit are required to be agriculture. We can confirm that the proposed Hallman Pit is proposing to progressively rehabilitate the subject lands to an agricultural use. It is however acknowledged that the in an effort to protect groundwater sources from the on-going application of nitrogen based fertilizers, that its use will be restricted within the 'Issues Contributing Area' as identified on the Site Plans.

Notwithstanding the above, we can confirm the following:

- Cattleland Pit
  - The majority of the subject lands will be rehabilitated to agriculture and specifically the lands in proximity to both Witmer Road and Huron Road, (i.e. nearest the proposed Hallman Pit). The exception will be the middle portion of the site which will be rehabilitated to a marsh/wetland / deep pond that will be surrounded by woodlot and ecologically connected to the surrounding woodlots (Phypers, Schwartzentruber and Weaver).
- Barnes Pit
  - Agricultural rehabilitation
- Seibert Pit
  - Agricultural rehabilitation

- Voisin Pit
  - Agricultural rehabilitation for the lands nearest Witmer Road and ephemeral ponds and reforestation in the southern portion as part of an overall ecological connection with the Cattleland Pit rehabilitation plan. A hedgerow is proposed along the western limit of the site to connect up to Witmer Road.
- Township Pit
  - Agricultural rehabilitation with the exception of the +/-5.2 hectare pond area in the northern portion of the site.
- Dino Trucking Inc.
  - Agricultural rehabilitation
- Poll Pit
  - Agricultural rehabilitation

Based on the above, the vast majority of the post-extractive land area of all the existing licensed pits south of Witmer Road are to be rehabilitated to an agricultural land use, and therefore be a common land use with the proposed Hallman Pit. Refer to Figure 3. Consequently, there will be no cumulative impact based on the final rehabilitated land use of agriculture.

It is acknowledged that the mid-portion of the licensed pits are to be rehabilitated with a series of shallow ponds and a deep pond all to be surrounded by reforestation. These ponds and reforestation will provide ecological linkages to abutting and surrounding woodlots including the Schwartzentruber, Phypers and Weaver woodlots. As well, a proposed hedgerow is being proposed along the western limit of the Voisin Pit northward to Witmer Road which will provide connectivity to the FODM5-9 [Dry-Fresh Sugar Maple Hardwood Deciduous Forest] located in the south-east corner of the subject lands, but excluded from extraction and licensing. As such, for the lands south of Witmer Road and the proposed rehabilitation designs for some ecological uses, these will all be surrounded by agricultural fields, similar to those being proposed for the Hallman Pit.

Therefore, it is our opinion that there will be no cumulative impacts related to life span or rehabilitation.

### 3.10 Technical Review Summary

Cumulative impacts have been assessed regarding: i) noise, ii) dust, iii) hydrogeology, (groundwater), iv) traffic, v) geotechnical, vi) natural environment, vii) archaeological and viii) rehabilitation.

Based on the above review, it was determined that no cumulative impacts are present regarding iii) hydrogeology, (groundwater), archaeological and iv) rehabilitation. No assessment was undertaken regarding vibration. Based on the above, it was determined that cumulative impacts are possible but have been mitigated as follows:

- i) Noise: A new noise note referenced as Noise Note 5.
- ii) Geotechnical: Upgrading of Witmer Road.

**Schindelsteadle**

**PROPOSED HALLMAN PIT**

**Wilmot Rd**

**AGRICULTURE**

**AGRICULTURE**

**AGRICULTURE**

**Hallman Rd**

**Bethel Rd**

**Mannheim Rd**

**THE NORTH**

**LEGEND**

A - CATTLELAND PIT (LAFARGE) #10600

B - BARNES PIT (LAFARGE) #5725

C - SEIBERT PIT (LAFARGE) #5553

D - VOISIN PIT (SPRING VALLEY TROUT FARM LTD.) # 608502

E - TOWNSHIP PIT (TOWNSHIP OF WILMOT) #5557

F - DINO PIT (DINO TRUCKING INC.) #5728

G - POLL PIT (1668830 ONTARIO UNITED) #5550

|                                                                                                                      |  |                                                                                       |  |                                                                                                                     |                                                            |                        |                      |
|----------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------|----------------------|
| <b>CLIENT</b><br>JACKSON HARVEST FARMS LTD.<br>FINAL REHABILITATION LAND USES                                        |  | <b>PROJECT NAME</b><br>HALLMAN PIT<br>WILMOT TOWNSHIP                                 |  | <b>IBI GROUP</b><br>Suite 101 - 410 Albert Street<br>Waterloo ON N2L 3V3 Canada<br>tel 519 585 2255<br>ibigroup.com | <b>FIGURE NAME</b><br>FIGURE 3.<br>SURROUNDING PIT HISTORY | <b>FIGURE NO.</b><br>3 | <b>REVISION</b><br>1 |
| <b>SCALE:</b><br>N.T.S.<br><b>PROJECT MGR:</b><br>D.S.<br><b>CHECKED BY:</b><br>C.T.<br><b>PROJECT NO:</b><br>115985 |  | <b>DATE:</b><br>2020-09-09<br><b>DRAWN BY:</b><br>E.T.<br><b>APPROVED BY:</b><br>D.S. |  |                                                                                                                     |                                                            |                        |                      |

15

## 4 Summary

Regional Official Plan Policy 9.C.4 requires that technical studies undertaken in support of a proposed new mineral aggregate operation shall take into account the potential for cumulative impact that may result when added to other past, present and proposed future mineral aggregate operations in the vicinity of the proposed new operation.

Based on this requirement, this report has specifically looked at the potential for cumulative impacts that may be triggered by the proposed Hallman Pit when introduced into a landscape south of Witmer Road that is dominated by existing licensed pits (7 in total). That landscape totals approximately 330 hectares of licensed lands and has the potential to produce as much as 2 million tonnes per year.

The report has identified that although there is a large footprint of licensed properties, there has historically been, and currently remains only modest amounts of extraction occurring, with large portions of this footprint remaining unopened as licensed reserves. Although practically it is unlikely that maximum extraction would suddenly begin on all these sites, the report has made such a 'worst-case' assumption.

Based on that, this report has looked at numerous issues related to land use compatibility where cumulative impacts could potentially arise including:

- i) Noise,
- ii) Dust,
- iii) Hydrogeology (groundwater),
- iv) Traffic,
- v) Geotechnical,
- vi) Natural Environment,
- vii) Archaeological, and
- viii) Life of Pit/Rehabilitation.

It is noted that there is the possibility of cumulative impacts as it relates to noise, and geotechnical (Witmer Road) but each of these have been mitigated as follows:

Noise: The introduction of a new noise note that will be based on real time monitoring at the time of potential impact based on MECP noise restrictions that will apply at that future date. The noise note will be triggered when (if) specific extraction phases in close proximity to the Hallman Pit were to become operational. The specific noise note is as follows:

5. *The Licensee shall undertake a noise audit of the Hallman Pit operation to ensure MECP noise guidelines continue to be met upon the opening (active extraction) of the Cattleland Pit (ARA License 10600) Phase 8, Phase 9 and Phase 10, and upon the opening of the Voisin Pit (ARA License 608502) Phase 2. The noise audit shall be undertaken by a qualified acoustical engineer with the results submitted to MNRF, the Region of Waterloo and the Township of Wilmot. Should MECP guidelines be found to be breached, the Licensee shall undertake operational design changes to ensure compliance.*

As a result of the above, at this time, Jackson Harvest Farms Ltd. is prepared to revise the Operational Plan to include the new noise note to facilitate cumulative impacts.

Geotechnical: The proposed haul road for the proposed Hallman Pit will traverse Witmer Road from the pit's entrance/exit to the Regional Road 12 (Queen Street) intersection. Because the Voisin Pit also uses Witmer Road and because it historically had a spring ½ load restriction, the portion of the road from the Voision Pit to the intersection was specifically assessed. As such, not only will the haul road from the Voisin Pit to the Hallman Pit need to be upgraded, but as a

Submitted to Jackson Harvest Farms Ltd.

result of the cumulative impact of both pits, the portion from the Voisin Pit will also need to be upgraded again.

At this juncture,

- a) Both the consultant representing Jackson Harvest Farms Ltd. (CMT Engineering) and the Township of Wilmot peer reviewer (GHD), have agreed to the specific technical road upgrades that will be required to ensure Witmer Road is adequately constructed to accommodate the existing and proposed truck traffic from both pits.
- b) Jackson Harvest Farms Ltd. has agreed to cover the costs of the upgrades and to sign an agreement with the Township to confirm same.

Therefore, we are of the opinion that the necessary Site Plan upgrades necessary to accommodate potential cumulative impacts have been or can be incorporated into the Site Plans or externally through an Agreement with the Township (road upgrades).

Yours truly

IBI GROUP



David R. Sisco, BA, MCIP, RPP  
Senior Planner

DRS/baw  
Encl.



I hereby certify that this Planning Justification Report Addendum was prepared by a Registered Professional Planner, within the meaning of the Ontario Professional Planner's Institute Act, 1994.

Oct. 21, 2020



Date

David R. Sisco, BA, MCIP, RPP

## **APPENDIX A**

---

**HARDEN ENVIRONMENTAL SERVICES LTD. MEMORANDUM DATED  
SEPTEMBER 14, 2020**



Harden Environmental Services Ltd.  
4622 Nassagaweya-Puslinch Townline Road  
R.R. 1, Moffat, Ontario, L0P 1J0  
Phone: (519) 826-0099 Fax: (519) 826-9099

Groundwater Studies  
Geochemistry  
Phase I / II  
Regional Flow Studies  
Contaminant Investigations  
OMB Hearings  
Water Quality Sampling  
Monitoring  
Groundwater Protection  
Studies  
Groundwater Modelling  
Groundwater Mapping

## Memorandum

**Harden File: 1728**

**Wilmot Township File: File 11/19**

**Date: September 14, 2020**

**Prepared by: Stan Denhoed, P.Eng., M.Sc.**

### **1.0 Introduction**

We are pleased to provide an addendum to our response to the Region of Waterloo specifically regarding the potential for a cumulative issue with respect to groundwater and surface water. We are responding to a request to clarify the potential for the Hallman Pit to have a cumulative impact as defined in the following ROW policy.

#### **9.C.4**

*The studies noted in Policies 9.C.3 and 9.D.1 will take into account the potential cumulative impacts that may result from a proposed new mineral aggregate operation when added to other past, present and proposed future mineral aggregate operations in the vicinity of the proposed new operation. The appropriate level of detail, analysis boundaries and baseline data to be used in the cumulative impact assessment will be determined by the Region, Area Municipalities, the Grand River Conservation Authority and the owner/applicant as part of the pre-submission consultation meeting.*

There are several nearby licensed aggregate sites as shown on Figure 1 prepared by the IBI group. Table 1 provides details of those sites.

| Site | Information                                                                                                                                                                                                                                                                                                                                |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A    | <p><b><u>Cattleland Pit</u></b><br/> The Warren Paving &amp; Materials Group Limited, a subsidiary of Lafarge Canada Inc.<br/> ARA Licence No. 10600<br/> Licensed Area: 96.3 Ha.<br/> Class A, Category 2 Pit (pit below water)<br/> Annual Tonnage: 500,000 Tonnes<br/> Above Water Table with limited below water table extraction.</p> |
| B    | <p><b><u>Barnes Pit</u></b><br/> The Warren Paving &amp; Materials Group Limited, a subsidiary of Lafarge Canada Inc.<br/> ARA Licence No. 5725<br/> Licensed Area: 55.5 Ha.<br/> Class A, Category 3 (pit above water)<br/> Annual Tonnage: 454,000 Tonnes</p>                                                                            |
| C    | <p><b><u>Seibert Pit</u></b><br/> The Warren Paving &amp; Materials Group Limited, a subsidiary of Lafarge Canada Inc.<br/> ARA Licence No. 5553<br/> Licensed Area: 38.4 Ha.<br/> Class A, Category 3 (pit above water)<br/> Annual Tonnage: 500,000 Tonnes</p>                                                                           |
| D    | <p><b><u>Witmer Pit</u></b><br/> Spring Valley Trout Farm Ltd.<br/> Operated by Steed and Evans<br/> ARA Licence # 608502<br/> Licensed Area: 27.7 Ha.<br/> Class A, Category 3 (pit above water)<br/> Annual Tonnage: 200,000 Tonnes</p>                                                                                                  |
| E    | <p><b><u>Township Pit</u></b><br/> Corporation of the Township of Wilmot<br/> ARA Licence # 5557<br/> Licensed Area: 41.8 Ha<br/> Class A, Category 2 (pit below water)<br/> Annual Tonnage: 75,000 tonnes</p>                                                                                                                             |
| F    | <p><b><u>Dino Pit</u></b><br/> Dino Trucking Inc.<br/> ARA Licence # 5728<br/> Licensed Area: 25.2 Ha.<br/> Class A, Category 3 (pit above water)<br/> Annual Tonnage: 250,000 Tonnes</p>                                                                                                                                                  |
| G    | <p><b><u>Poll Pit</u></b><br/> 1668830 Ontario Limited<br/> ARA License # 5550<br/> Licensed Area: 45.7<br/> Class A, Category 3 (pit above water)<br/> Annual Tonnage: 50,000 Tonnes</p>                                                                                                                                                  |

The Cattleland Pit and the Township Pit are currently licensed to proceed below the water table. All other pits are licensed for above water table extraction only. In



consideration of these nearby licensed sites, the following cumulative impacts from the Hallman Pit are addressed in this addendum.

- 1) Added Cumulative impact of below-water-table extraction
- 2) Added Cumulative impact of water taking as permitted by the Ministry of the Environment Conservation and Parks (MECP)
- 3) Added Cumulative impact of land use changes to streamflow in the Nith River

## **2.0 Added Cumulative Impact of Below-Water-Table Extraction**

The proposed Hallman Pit is an above-water-table pit. Therefore, there will be no added cumulative impact arising with respect to mining below the water table.

## **3.0 Added Cumulative impact of water taking as permitted by the Ministry of the Environment Conservation and Parks**

There are two Permits to Take Water associated with aggregate extraction in this area as follows;

| Pit        | MECP<br>Permit | Volume<br>(Liters Per Day) | Source                    |
|------------|----------------|----------------------------|---------------------------|
| Cattleland | 0251-B68JG2    | 272,000                    | Groundwater               |
|            | 0251-B68JG2    | 2,700,000                  | Groundwater               |
| Poll       | 6407-B65LPD    | 3,630,000                  | Surface Water/Groundwater |

The groundwater sources listed are usually ponds that are directly connected to the groundwater, not water wells. There is no discharge off-site from any of these permits, therefore any losses that occur are from evaporation and entrainment with the shipped aggregate. This is a small fraction of the overall volume of taking listed above.

There is the potential for the proposed Hallman pit to obtain a Permit to Take Water from the MECP. This may not be required by the operator as the aggregate is relatively coarse-grained and does not necessarily require processing through a wash plant. Any water taking will involve recirculation of water on-site and there will be no discharge of water off-site. Any losses of water will occur from increased evaporation and entrainment in the shipped aggregate. This water taking has been considered from an overall on-site water balance perspective and a cumulative drawdown perspective.

### **3.1 Overall Water Balance**

In Response 5.21 to the ROW (Harden, July 14, 2020) we present several scenarios of extraction including scenarios where water is used for processing 500,000 tonnes of aggregate per year. This is a conservatively high estimate of aggregate to be processed. The analysis shows that under all scenarios there will be an increase in infiltration at the site. This arises from decreased evapotranspiration in disturbed areas (i.e. no vegetation). In this way we show that there can be no additional loss of groundwater and therefore no cumulative impact with other aggregate operations.

### **3.2 Cumulative Drawdown**

The drawdown in the wash pond is estimated to be a maximum of one metre. Our Response 6.23 in Harden, July 14, 2020 explains that the area of influence of the drawdown is short lived on a daily basis and will not extend more than 110 metres from the wash pond. This does not extend off-site, therefore, there can be no cumulative drawdown effect on any private wells.

### **4.0 Added Cumulative impact of land use changes to streamflow in the Nith River**

The Level I and Level II report prepared by Harden (September 3, 2019) includes the following section.

#### **7.3 REGIONAL CUMULATIVE IMPACT**

*The site falls within the Middle Nith Groundwater Assessment area as defined in the Grand River Integrated Water Budget Report, 2009. The present stress level for this assessment area is Low. The report states that the maximum monthly groundwater demand from all water taking in the area is 142 L/s. The maximum monthly demand is 7% of available water. A low stress level is maintained at less than 10% groundwater demand.*

*The consumption of water from a wash plant is approximately 89 L/tonne (Golder, 2006). This results in a consumptive loss of 66,750 m<sup>3</sup>/year or 2.1 L/s. The maximum monthly water demand will increase to 144 L/s resulting in a maximum monthly demand of 7%. The stress level of the Middle Nith River will not change.*

*The overall water balance at the site during and post extraction is that there will be an increase in water available for infiltration.*

It is our conclusion that the stress level will not change for the Middle Nith Groundwater Assessment Area which accounts for all existing permitted water taking including that of nearby licensed aggregate sites.

## 5.0 Summary

The propose Hallman Pit cannot have a cumulative impact regarding groundwater and surface water when added to past, present and proposed future mineral aggregate operations nearby. A surplus of groundwater occurs as a result of removed vegetation during the extraction phases, even if water is used for processing the aggregate. The drawdown effect of the wash pond is temporary and will not extend off-site. There will be no impact to private wells, municipal wells or cumulatively, on the Nith River.

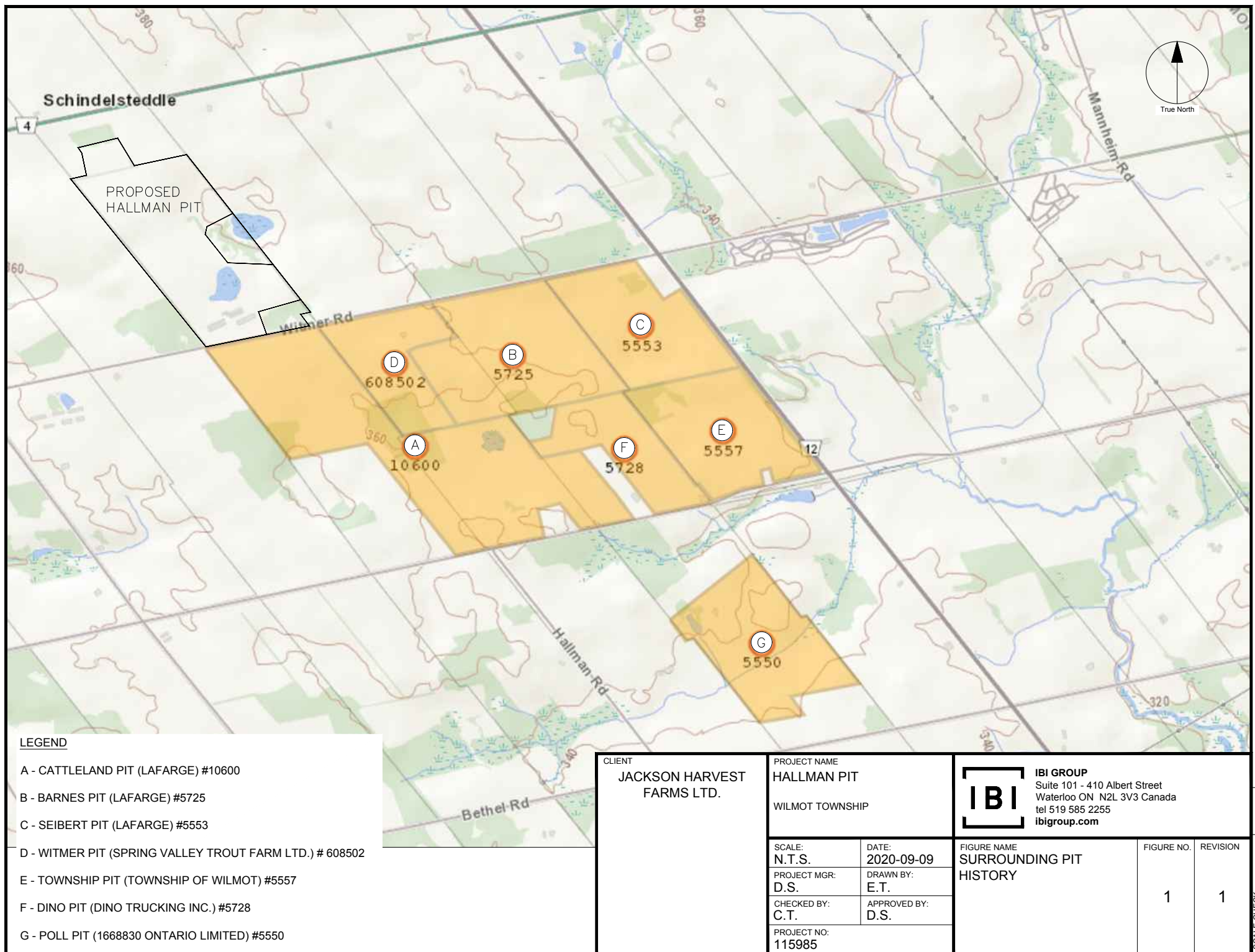
A monitoring plan is in place to verify these findings.

Harden Environmental Services Ltd.



Stan Denhoed, M.Sc., P.Eng.  
Senior Hydrogeologist





**LEGEND**

- A - CATTLELAND PIT (LAFARGE) #10600
- B - BARNES PIT (LAFARGE) #5725
- C - SEIBERT PIT (LAFARGE) #5553
- D - WITMER PIT (SPRING VALLEY TROUT FARM LTD.) # 608502
- E - TOWNSHIP PIT (TOWNSHIP OF WILMOT) #5557
- F - DINO PIT (DINO TRUCKING INC.) #5728
- G - POLL PIT (1668830 ONTARIO LIMITED) #5550

CLIENT  
**JACKSON HARVEST  
FARMS LTD.**

PROJECT NAME  
**HALLMAN PIT**  
  
WILMOT TOWNSHIP

|                              |                             |
|------------------------------|-----------------------------|
| SCALE:<br><b>N.T.S.</b>      | DATE:<br><b>2020-09-09</b>  |
| PROJECT MGR:<br><b>D.S.</b>  | DRAWN BY:<br><b>E.T.</b>    |
| CHECKED BY:<br><b>C.T.</b>   | APPROVED BY:<br><b>D.S.</b> |
| PROJECT NO:<br><b>115985</b> |                             |



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FIGURE NAME  
**SURROUNDING PIT  
HISTORY**

| FIGURE NO. | REVISION |
|------------|----------|
| <b>1</b>   | <b>1</b> |

## APPENDIX B

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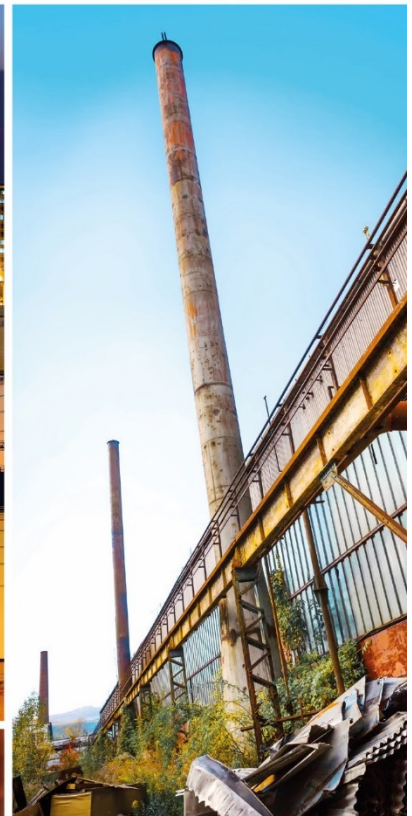
### **BEST MANAGEMENT PRACTICES PLAN FOR CONTROL OF FUGITIVE DUST EMISSIONS – REVISION 2 DATED OCTOBER 19, 2020**



# **Best Management Practices Plan for Control of Fugitive Dust Emissions**

Jackson Harvest Farms Ltd.  
1894 Witmer Road  
Wilmot, Ontario

Revision 2





## Foreword

This Dust Best Management Practices Plan (BMPP) documents the practices that will be in place to control potential fugitive dust at the Jackson Harvest Farms Ltd. operations at 1894 Witmer Road in Wilmot, Ontario (Facility or Site) and has been prepared in accordance with the requirements of the Ontario Ministry of the Environment, Conservation and Parks (MECP) Technical Bulletin "Management Approaches for Industrial Fugitive Dust Sources", published in February 2017.

As operations change and new fugitive dust sources are added to the Facility, this Plan will be updated as required. In order to maintain version control all pages in the Dust BMPP have been dated and documented with a version number. This Plan is Revision 2. The version number will change if the entire report is re-issued; if individual pages are provided to update small portions of the Plan then they will be issued with a X sub-revision number and the updated pages will be listed on the following Revision Control Page.



## Version Control

| Version | Date         | Description of Changes                                            | Updated Pages | Approved By                                                                 |
|---------|--------------|-------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------|
| 0       | October 2019 | Original                                                          | NA            | Glenn Turchan, GHD Limited<br>Bryan Rubie, GHD Limited<br>Rick Esbaugh, JHF |
| 1       | April 2020   | Additional detail on crusher operation and daily site inspections | Various       | Glenn Turchan, GHD Limited<br>Bryan Rubie, GHD Limited<br>Rick Esbaugh, JHF |
| 2       | October 2020 | Additional Section 8 to discuss potential cumulative impacts      | Various       | Glenn Turchan, GHD Limited<br>Bryan Rubie, GHD Limited<br>Rick Esbaugh, JHF |

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## 1. Introduction

This document entitled "Best Management Practices Plan for Control of Fugitive Dust Emissions" (Dust BMPP) has been prepared for the Jackson Harvest Farms Ltd. (JHF) Hallman Pit (Facility or Site) to be located at 1894 Witmer Road in Wilmot, Ontario. The Facility location is presented on Figure 1. The Site is a proposed sand and gravel extraction pit, which will be licensed under the Aggregate Resources Act through the Ministry of Natural Resources and Forestry (MNRF).

The purpose of this Dust BMPP is to provide details about the best management practices that will be in place to control potential fugitive dust emissions, as well as planned strategies for dealing with potential fugitive dust issues, based on the dust conditions observed.

This Dust BMPP has been prepared in accordance with the requirements of the Ontario Ministry of the Environment, Conservation and Parks (MECP) Technical Bulletin "Management Approaches for Industrial Fugitive Dust Sources", published in February 2017.

This Dust BMPP include the following information:

- Description of the operational activities at the Site.
- Identification of the main sources of fugitive dust emissions at the Site.
- Potential causes for high dust emissions and opacity resulting from these sources.
- Preventative and control measures in place or under development to minimize the likelihood of high dust emissions and opacity issues from the sources of fugitive dust emissions.
- Potential for cumulative impacts from nearby aggregate operations.
- Inspection and maintenance procedures and monitoring initiatives to ensure effective implementation of the preventative and control measures.
- Training requirements of Site personnel.
- Opportunities for continuous improvement of the Dust BMPP.

Upon commencement of operations at the Facility, JHF shall immediately implement the Dust BMPP for the control and mitigation of potential fugitive dust emissions resulting from the Site's operations. This Dust BMPP will be followed throughout the lifespan of the Site and be revised based on "as-constructed" conditions or to circumvent dust issues. The Dust BMPP will be a "living" document.

## 2. Responsibilities

The following identifies the responsibilities held by each of the employment levels at the Site as they pertain to this Dust BMPP.



### *JHF Management*

The JHF Management Representatives, or designates, are responsible for:

- Reviewing the effectiveness of the current dust control measures at the Site on an ongoing basis.
- Ensuring the required resources are in place to execute the Dust BMPP.
- Scheduling and coordinating the implementation of fugitive dust control measures, as required.
- Maintaining documentation of schedules and daily logs.
- Ensuring the training of all applicable Site personnel and contractors on the plan and best management practices for the prevention of fugitive dust emissions.
- Completing Fugitive Dust Checklists, as necessary.

### *Applicable Site Personnel*

All Site Personnel/Contractors who could be engaged in the associated work outlined in this Dust BMPP are responsible for:

- Reviewing the effectiveness of the current dust control measures at the Site on an on-going basis.
- Following the best available practices for dust control that are currently in place.

## **3. Process Description**

JHF owns the Hallman Pit with plans to operate it as a sand and gravel extraction pit. The area to be extracted covers an area of 57.3 hectares and it is expected that no more than 750,000 tonnes per year of aggregate will be removed from the pit. The operations at the Site will consist of mobile equipment used to extract, process, and transport the aggregate. The mobile equipment on-Site will include, but not be limited to; scrapers, bull dozers, power shovels, and dump trucks for stripping and rehabilitation, front-end loaders, dump trucks, crushers, conveyor belts, and other portable processing equipment for material extraction.

There are three primary areas on-Site where the majority of the operations will occur: the processing area, the wash plant area, and the recycling area. The processing area will consist of the primary extraction processing in addition to some dry screening operations. There will be a few stockpiles associated with the screened materials in the processing area. The wash plant area will further screen the aggregate material into five different stockpiles. The material will be sent through a sprayer prior to screening and will be transported using open conveyor belts. The recycling area will receive and process used concrete. The concrete will be pulverized and crushed so that any steel components can be separated. There will be one or two stockpiles associated with the crushed concrete in this process area. All processing operations will occur at the lowest pit floor elevation, with the exception of the screening operations. The screening operations will still occur well below the upper level of the pit.

The only pit entrance/exit will be located at the southern boundary of the Site with access onto Witmer Road. The weigh scale and scale house facilities will be located near the entrance/exit. Earthen berms will be located at key points along the property boundary. These berms will range in height from 0.5 metres (m) to 5 m and will be vegetated with a perennial legume/grass to control erosion and prevent dust generation.

Table 1 below presents general information about the Facility relevant to this Plan.

**Table 1 Facility Description**

|                                        |                                                                                                    |
|----------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Facility:</b>                       | Jackson Harvest Farms Ltd. Hallman Pit                                                             |
| <b>Location:</b>                       | 1894 Witmer Road, Wilmot, Ontario                                                                  |
| <b>Main activities/equipment used:</b> | Sand and Gravel Pit                                                                                |
| <b>Area occupied:</b>                  | 57.3 hectares                                                                                      |
| <b>Production:</b>                     | Up to 750,000 tonnes of aggregate per year                                                         |
| <b>Nearest sensitive receptors:</b>    | Residences in Shingletown, which is located just beyond the northern property boundary of the Site |

A Site location map is presented on Figure 1. A Site operational plan is presented on Figure 2, which shows the buildings, property line, and berm locations. Figure 2 also summarizes key best management practices that will be applied to limit fugitive dust generation.

## 4. Fugitive Dust BMPP Methodology

This fugitive Dust BMPP has been developed by following the Plan Do Check and Act (PDCA) cycle according to ISO guideline as follows:

- **PLAN** - identifies and characterizes the emission sources and BMPs at the Site.
- **DO** - documents the schedule for implementation of the proposed improvements.
- **CHECK** - describes the monitoring procedures and a recordkeeping system.
- **ACT** – describes, when necessary, the BMPP review and update procedures in order to promote its continuous improvement.

## 5. Identification and Classification of Fugitive Dust Emission Sources

Fugitive dust emissions occur due to mechanical disturbances of granular materials exposed to the air. Dust generated from these open sources is termed "fugitive" because it is not discharged to the atmosphere in a confined flow stream, such as in an exhaust pipe or stack.

The mechanical disturbance may be equipment movement, the wind, or both. Therefore, some fugitive dust emissions occur and/or are intensified by equipment use, while others, i.e., wind erosion emissions, are independent of equipment use.



The main factors affecting the amount of fugitive dust emitted from a source include characteristics of the granular material being disturbed (i.e., particulate size distribution, density, and moisture) and intensity and frequency of the mechanical disturbance (i.e., wind conditions and/or equipment use conditions). Precipitation and evaporation conditions can affect the moisture of the granular material being disturbed and, therefore, have an indirect effect on the amount of fugitive dust emitted.

Once dust is emitted, its travelling distance from the source is affected by various parameters. Namely climatic conditions; specifically wind speed, wind direction and precipitation, and particle size distribution. Higher wind speeds increase the distance travelled while precipitation can accelerate its deposition. Finer particulates can travel longer before settling and, therefore are of more concern.

The potential sources of fugitive dust emissions that have been identified for the Site include the following:

- On-Site traffic
- Processing operations
- Material conveyance systems
- Material stockpiles
- Material loading/unloading

## **5.1 On-Site Traffic/Roads**

The Site will receive a number of trucks on a daily basis which will load and transport out the aggregate material. Therefore, on-Site traffic is expected to be a potential source of fugitive dust emissions. Within the property there will be a mixture of paved and unpaved roads. Prior to exiting the Site, all heavy vehicles will need to pass over a grizzly screen system where dirt on the tires will be knocked off. This will help minimize dirt track-out.

### ***Paved Roads/Areas***

Paved roads significantly reduce the potential for fugitive dust emissions from vehicle traffic. The haul road is unpaved up to the grizzly on the scale and paved after the scale to the road as it will see the most traffic. However, the status of the roads on-Site will continuously be evaluated to understand the need for additional paving. The paved road will be maintained to mitigate the accumulation of dirt on the road surface. By sweeping or clearing the paved road, the potential for dust emissions and dirt track-out will be minimized.

### ***Unpaved Roads/Areas***

Unpaved roads have a much greater potential to release fugitive dust emissions than paved roads. These gravel roads release dust emissions as the accumulation of dust on the road surface is disturbed by vehicular traffic. Vehicle speed, vehicle weight, moisture content, and silt content are all critical factors in the amount of fugitive dust emitted from the roads. Should a significant amount of dust be generated on the roads, water suppressant will be applied to reduce fugitive dust release. A water truck will be used to apply water to the road surface on a daily basis and as needed thereafter based on weather conditions.

## **5.2 Processing Operations**

At the Site, processing operations will occur at the processing area, the wash plant area, and the recycling area. Each of these areas will involve some form of screening or crushing operations which are expected to be potential sources of fugitive dust emissions. The crusher will be equipped with a spray bar to minimize the potential for fugitive dust emissions from the crushing operations. Furthermore, with the exception of the screening operations, all processing operations will occur at the lowest pit floor elevation, which will reduce the potential for dust emissions from these activities. The screening operations will still occur well below the upper level of the pit.

## **5.3 Material Conveyance Systems**

The excavated aggregate will be sent through screening equipment to filter out the various material grades. Conveyance systems will be in place to transfer the material within the Site. The transportation of the material through this process is a potential source of fugitive dust emissions. The conveyance system used at the main processing area will handle dry material and the conveyance system used at the wash plant will handle wet material. The conveyance of the wet material is not expected to be a source of fugitive dust.

## **5.4 Material Stockpiles**

On-Site will be several outdoor stockpiles of various aggregate products of different types and sizes reflecting the range of product demand, and each will be active in terms of being continuously drawn from and replenished as demand warrants. These stockpiles will potentially be a source of fugitive dust emissions from wind erosion. Under normal operating conditions, these piles are not expected to be a significant source of fugitive dust emissions. However, extremely dry and windy conditions could pose a concern. Therefore, the weather will be actively monitored and water suppressant will be applied to the piles, if needed. There will be stockpiles at each of the three processing areas. The wash plant is expected to have up to five different stockpiles; however, material that is added to those piles will be wet from the washing that occurs within the area.

## **5.5 Material Loading/Unloading**

Material loading and unloading will occur at various stages of the process operations occurring on-Site. Each loading and unloading event represents a potential source of fugitive dust emissions.

Material loading occurs anytime a piece of equipment (like a front end loader) is being used to pick up material. To minimize potential emissions, material loading should be carefully completed at a reduced speed to limit disturbance.

Material unloading occurs anytime material is dropped from one height to another. Examples of this would include material being dropped into a dump truck and material being dropped from a conveyance system to a stockpile. To minimize potential emissions, the drop distance of materials should be minimized.

## 5.6 Summary

Table 2 below summarizes each potential source of fugitive dust emissions and the potential cause for increased emissions.

**Table 2 Sources of Fugitive Dust Emissions within the Site and Potential Causes for High Emissions**

| Source Description          | Potential Causes for High Emissions and Opacity from Each Source                                                                                                                   |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Paved roads                 | Increased accumulation of dirt on road surface<br>Increased vehicle traffic frequency<br>Increased vehicle speed and weight<br>Dry conditions<br>High wind speed                   |
| Unpaved roads               | Increased vehicle traffic frequency<br>Increased vehicle speed and weight<br>Dry conditions<br>High wind speed                                                                     |
| Processing areas            | Increased processing activities<br>Increased elevation of processing activities<br>Dry conditions<br>High wind speed                                                               |
| Material conveyance systems | Increased processing activities<br>Increased speed of conveyance systems<br>Increased elevation of processing activities<br>Dry conditions<br>High wind speed                      |
| Material stockpiles         | Increased stockpile size<br>Increased elevation of stockpiles<br>Fine materials included in the stockpiles<br>Dry conditions<br>High wind speed                                    |
| Material loading/unloading  | Larger drop distance during loading/unloading<br>Increased frequency of operations<br>Fine materials included in the loaded/unloaded material<br>Dry conditions<br>High wind speed |

## 6. Control Measures

Control measures to reduce fugitive dust emissions should take into account the source of the dust emissions, the dispersion conditions, and the location of sensitive areas in order to avoid relevant impacts of dust emissions on receptors.

Control measures are implemented to reduce the generation and/or dispersion of fugitive dust emissions. These control measures can be classified as follows:

- **Preventative Procedure:** Measures pertaining to the design and installation of structures and the operating procedures which are implemented on a regular basis in order to prevent the generation of dust and/or the dispersion of dust emitted reaching sensitive areas.
- **Reactive Control Measures:** Measures which are implemented in the event of unexpected circumstances which can lead to the generation of dust and/or the dispersion of dust emitted reaching sensitive areas.

Table 3 presents a list of preventative procedures and control measures that will be used to mitigate fugitive dust emissions that are associated with the Site's operations. Key dust management practices are highlighted on Figure 2.

**Table 3 Description of Preventative Procedures and Control Measures for Potential Fugitive Dust Emissions at the Site**

| Preventative Procedure/Control Measure | Description                                                                                                                                                                                                                                                                                                                                                                  | Frequency                                                                                                                                      |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Applying water suppressant             | Water suppressant will be sprayed on the roads. Applying water to the road surfaces will reduce the potential for dust to be picked up by winds.                                                                                                                                                                                                                             | Water will be applied to the roads on a daily basis based on climatic conditions (e.g., windy dry day vs. a precipitation day).                |
| Spray bar                              | The crushing equipment will be equipped with spray bars. Applying water suppressant to the crushed material will reduce the potential for dust to be picked up by winds.                                                                                                                                                                                                     | The watering rate will be set, as needed, to suppress visible dust based on climatic conditions (e.g., windy dry day vs. a precipitation day). |
| Grizzly screen system                  | Prior to exiting the Site, all heavy vehicles will need to pass over a grizzly screen system where dirt on the tires will be knocked off. This will help minimize dirt track-out.                                                                                                                                                                                            | All heavy vehicles will need to pass over grizzly screen prior to leaving site.                                                                |
| Road sweeping                          | The paved road areas will need to be maintained to mitigate the accumulation of dirt on the road surface. By sweeping the paved roads, the potential for dust emissions and dirt track-out will be minimized.                                                                                                                                                                | The paved roads should be assessed on a daily basis and swept, as needed.                                                                      |
| Optimized truck routes                 | The truck routes will be optimized for each transport activity occurring on Site to minimize the distances travelled. The optimized truck routes for on-Site traffic provide the most appropriate traffic flow for the activities occurring at the Site. This is an effective best management practice as it reduces the amount of dust kick up by minimizing trip distance. | The truck route optimization will be subject to change as the Site develops.                                                                   |

| Preventative Procedure/Control Measure                                       | Description                                                                                                                                                                                                                                                                              | Frequency                                                                                                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum speed limit                                                          | A maximum speed limit of 20 kilometres per hour will be required throughout the Site to minimize emissions of fugitive dust from vehicular traffic.                                                                                                                                      | This speed limit will be required for all vehicles travelling on-Site at all times.                                                                                          |
| Maintaining the stockpile sizes, appropriate drop heights, and material type | The size of each stockpile is to be maintained relatively consistent. The piles are to be kept as intended and not have any fines added.<br>Materials are dropped onto the stockpiles by loader, conveyor, or truck. Efforts will be made to minimize the drop height wherever possible. | Stockpile size, location, material type, and material drop heights to be monitored and maintained daily.                                                                     |
| Berms                                                                        | The Site will have various earthen berms around the property line based on the phase of the operational plan.                                                                                                                                                                            | Berms will be constructed prior to operational activities begin on-Site. Maintenance of the berms and pit slopes on-Site will be carried out throughout the life of the pit. |
| Vegetation                                                                   | A schedule of vegetation planting has been defined by JHF. Prior to each phase of excavation, JHF will ensure the designated vegetation will be in place. This vegetation will help prevent fugitive dust from escaping the Site.                                                        | Vegetation will be planted prior to the operational activities of each project phase begin.                                                                                  |

The highest risk source of fugitive dust emissions is considered to be vehicle traffic on unpaved roadways. Therefore, applying water suppressant to the roads is considered to be the highest priority with respect to fugitive dust mitigation.

The images below demonstrate the water suppressant and grizzly screen mitigation methods that will be in use on-Site.



**Figure 6.1 Water truck (left) and Grizzly screen (right)**

## 7. Meteorological Data

As the Site will process aggregate material in an outdoor environment, there is the potential for wind to pick up and transport fine dust particles. Therefore, it is important to have an understanding of the local meteorological conditions and how they might affect fugitive dust emissions.

Meteorological data was acquired from the Kitchener/Waterloo Municipal Airport through Environment Canada's historical climate data portal for period from January 2014 through December 2018. This is the closest weather station to the Site (approximately 19 km northeast) and is therefore the most representative data available for the Site.

The weather station (Kitchener/Waterloo) is a continuous hourly station that has been in operation since 2002. Monthly meteorological data for the weather station was downloaded and organized into a spreadsheet where it was checked for completeness. The data was 99.81 percent complete for wind speeds and 96.13 percent complete for wind direction.

The data was converted into a wind rose plot (WRPLOT) supported file format (USEPA SAMSON format). Wind roses and wind speed frequencies were then generated using WRPLOT to assess the local wind speeds and wind directions. The wind rose plot is presented on Figure 3 and the wind class frequency distribution is presented on Figure 4.

The wind rose plot demonstrates that the predominant wind directions are blowing to the east (and southeast and northeast) and that approximately 54 percent of the winds have a speed of 4.5 metres per second (m/s) or less.

A review of the area has identified that there are a few residences located along Witmer Road in addition to residences located in Shingletown immediately north of the Site. The planned control measures will effectively minimize the impact that residences along Witmer Road may encounter from westerly winds. In addition, there is existing tree cover along the southwest and southeast corners of the Site that would reduce potential impacts at those receptors along Witmer Road. The residences in the Shingletown area would be subject to minimal fugitive dust impact without implementing the best management practices presented herein, as there are infrequent winds coming from the south and the majority of them are of low wind speed.

## 8. Potential for Cumulative Impacts

It is recognized that there are several existing aggregate operations located in the vicinity of the proposed Site. At the request of the Region of Waterloo, a cumulative dust impacts assessment has been completed as part of the best management practices that will be in place at the Site to control potential fugitive dust emissions.

The pits that are located in the vicinity of the proposed Site are included in Figure 5 and Figure 6 and are listed as follows:

1. Cattleland Pit  
ARA Licence No. 10600  
Licensed Area: 96.3 hectares  
Class A, Category 1 (pit below water)  
Annual Tonnage: 500,000 tonnes  
(*Never opened for extraction*)
2. Barnes Pit  
ARA Licence No. 5725  
Licensed Area: 55.5 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 454,000 tonnes  
(*No extraction for many years*)
3. Siebert Pit  
ARA Licence No. 5553  
Licensed Area: 38.4 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 500,000 tonnes  
(*No/minimal extraction. Asphalt plant operation currently*)



4. Spring Valley (Voisin) Pit  
ARA Licence No. 608502  
Licensed Area: 27.7 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 200,000 tonnes  
(Open)
5. Township Pit  
ARA Licence No. 5557  
Licensed Area: 41.8 hectares  
Class A, Category 1 (pit below water)  
Annual Tonnage: 75,000 tonnes  
(Open – Minimal annual activity)
6. Dino Pit  
ARA Licence No. 5728  
Licensed Area: 25.2 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 250,000 tonnes  
(Open/Rehabilitation – Minimal annual activity)
7. Poll Pit  
ARA Licence No. 5550  
Licensed Area: 45.7 hectares  
Class A, Category 3 (pit above water)  
Annual Tonnage: 50,000 tonnes  
(Closed/Rehabilitation)

As a general comment, aggregate extraction operations are primarily associated with ground-based emissions sources, which have limited potential for dispersion across a significant distance. In addition, aggregate operations typically occur well below grade, which further restricts the potential for dust to disperse beyond the property line. Therefore, the potential for adverse effects resulting from cumulative impacts is expected to be minimal from these types of operations.

However, the following provides more information on the nearby pits and the potential for cumulative impacts. As a note, this cumulative assessment discussion will focus on potential impacts in the immediate vicinity of the Site.

The location of the various operations with respect to each other is a key factor in understanding the potential for cumulative impacts. As shown on Figures 5 and 6, the Site is located generally upwind to the northwest compared to the other existing pits in the generally vicinity. This location isolates it from the other pits and reduces the potential for cumulative impacts from most of the other pits. It should also be noted that only two or three of the seven pits are generally open for extraction (Barnes, Spring Valley, and Township Pit).

The operations at Cattleland Pit, located directly south of the Site, and the Spring Valley (Voison) Pit, located southeast of the Site, were further reviewed to evaluate the potential for cumulative impacts.

The Cattleland Pit, although never opened, is the closest aggregate operation to the Site and has the highest potential to contribute to cumulative impacts. The Cattleland Pit was licensed in 1991 but has never been opened for any active extraction to date. It is understood that the Cattleland Pit is licensed for an operational plan consisting of 10 planned phases.

The first five phases are to be located in the southeastern portion of the pit. This area of the pit is located over one kilometre away from the Site and therefore are expected to result in negligible cumulative impacts.

The last five phases are to be located just south of Witmer Road and would be the closest aggregate operation to the proposed Site. It is understood that when/if these phases are to commence, a three metre tall berm will be constructed between the operations and Witmer Road. In addition, it is understood that the extraction operations and associated equipment will be located as much as eighteen metres below the height of the berm.

Finally, it is understood that all extracted material from the Cattleland Pit will be shipped out via conveyor through the Barnes Pit to the Seibert Pit for processing with the final product shipped out via the Queen Street access point. This arrangement will significantly reduce dust generation from material transport since vehicles will not need to access Witmer Road where the Site is to be located. Therefore, should the Cattleland Pit ever commence operation, it is expected to result in minimal cumulative impacts in consideration of the operation of the Site.

The Spring Valley (Voison) Pit is the second closest aggregate operation to the Site and therefore has the potential to contribute to cumulative impacts. The pit was licensed over ten years ago and has been in consistent operation since.

It is understood that the Spring Valley Pit is associated with two phases. Phase one consists of processing operations that occur near the center of the licensed area and are surrounded by a four metre tall berm. Phase two only consists of 'load and haul' operations. The portion of the pit located closest to the Site operations will only involve phase two operations and therefore will not include any processing operations.

Due to the close proximity of residences along Witmer Road, the portable processing operations are also required to be shielded by a barrier with a minimum height of 10 to 12 metres. This shield will greatly minimize the potential impact from dust generation. The access point to the Spring Valley Pit is located off of Witmer Road, which is located just under one kilometre from the Site. Finally, a three metre tall berm is located at the northern perimeter of the pit along Witmer Road and vegetation has been proposed for planting. Therefore, the Spring Valley Pit is expected to result in minimal cumulative impacts in consideration of the operation of the Site.

Based on available information on the remainder of the pits, many are operating minimal activities or appear to have completed active extraction and are to undergo rehabilitation. It is understood that the Barnes Pit (which has been open for over 40 years) has not been open for active extraction in many years. It is understood that the Seibert Pit (which has been open for over 40 years) is associated with minimal extraction operations in recent years. However, the Seibert Pit is permitted for and operates an active asphalt plant. It is understood that the Township Pit is associated with minimal annual extraction operations. It is understood that the Dino Pit is still open but only produces less than 50,000 tonnes per year and is undergoing rehabilitation. Finally, it is understood that the Poll Pit is not undergoing any active extraction operations any longer and is required to undergo

rehabilitation as part of its site plans. All of these pits are also located over one kilometer away from the Site. Based on the understanding of how dust disperses from ground-based sources, which are located below grade, these pits are expected to result in negligible cumulative impacts in consideration of the operation of the Site.

The specifics of the dust mitigation practices that the other pits are or will be utilizing are not fully understood. However, based on the prescribed conditions that apply to Category 1 (Class A Pit Below Water) and Category 3 (Class A Pit Above Water), license holders are subject to the following conditions:

*3.1 Dust will be mitigated on site.*

*3.2 Water or another provincially approved dust suppressant will be applied to internal haul roads and processing areas as often as required to mitigate dust.*

*3.3 Processing equipment will be equipped with dust suppressing or collection devices, where the equipment creates dust and is being operated within 300 metres of a sensitive receptor.*

With these conditions in mind, it is expected that all of the pits operating in the area will be held to a certain standard of fugitive dust control independent of other operations. If all pits are operated in accordance of these conditions, the potential for cumulative impacts will be minimized.

In summary, the potential for adverse effects resulting from cumulative impacts is expected to be minimal and that the construction and operation of the Site will not change this understanding.

## **9. Inspection, Maintenance, and Documentation**

The presence of visible dust will be monitored continuously and control measures will be implemented on an as-needed basis. In addition, daily process inspections by all operation and maintenance staff will be conducted at the Site to monitor the effectiveness of dust control practices. The housekeeping practices will be reviewed as part of these daily inspections, and further practices required, if any, are identified at that time. As part of the daily process inspections, the weather conditions will be reviewed and the temperature and windspeed will be documented in the daily logs. If the temperature is greater than 20 degrees Celsius (°C) and wind speeds are in excess of 5 m/s, process inspections will occur twice per day.

The dust management and inspection responsibility falls on the technical Operations Manager at the Site. On a bi-weekly basis, the Operations Manager or alternate will conduct a full Site walkthrough, including perimeter inspections to identify any potential areas of concern related to the generation of fugitive dust. The Operations Manager should also make note of visible activities being conducted at the nearby pits. Should any off-site operation cause concern for adverse dust impacts near the Site, the site may need to implement more regular inspections and maintenance procedures. Additionally, all applicable Site personnel will be directed to be cognizant of any potential fugitive dust emissions from the Site operations and will be instructed to communicate potential issues to the Operations Manager immediately upon detection.



The bi-weekly inspection will include special attention to the following areas:

- Unpaved roads/areas
- Outdoor stockpiles (wind erosion and drop operations)
- Material loading/unloading areas
- Property boundary berms

Daily observations will be logged and filed as per standard Site procedures. Bi-weekly fugitive dust checks will be completed in a similar fashion to the example checklist provided in Appendix A. Based upon the findings, equipment maintenance is completed and housekeeping practices are reviewed and modified, as appropriate.

The documentation requirements for this fugitive dust BMPP includes JHF recording, in a log book, each time a specific preventative and control measure described in the Dust BMPP is implemented. JHF shall record, at a minimum:

- The date when each emission control measure is installed, including a description of the control measure.
- The date when each new preventative measure or operating procedure to minimize emissions is implemented, including a description of the preventative measure or operating procedure.
- The date, time of commencement, and time of completion of each periodic activity conducted to minimize emissions, including a description of the preventative measure/procedure and the name of the individual performing the periodic activity.

## 10. Training

As part of maintaining best management practices for controlling and preventing fugitive dust emissions, an initial and ongoing training program will be provided for all applicable staff.

The training will address the existing control techniques in place for managing fugitive dust emissions and how to maintain them; how to conduct a fugitive dust observation check and complete the associated paperwork; what to do in the case of an unexpected fugitive dust release; and, who to notify of any concerns or problems pertaining to fugitive dust emissions. Refresher training will be provided, as necessary, based on changes to the fugitive dust emission control techniques or process operations.

JHF will ensure that all new hires, including JHF personnel and contractors that will be engaged in the associated work listed in this Dust BMPP will be familiar with this Dust BMPP.

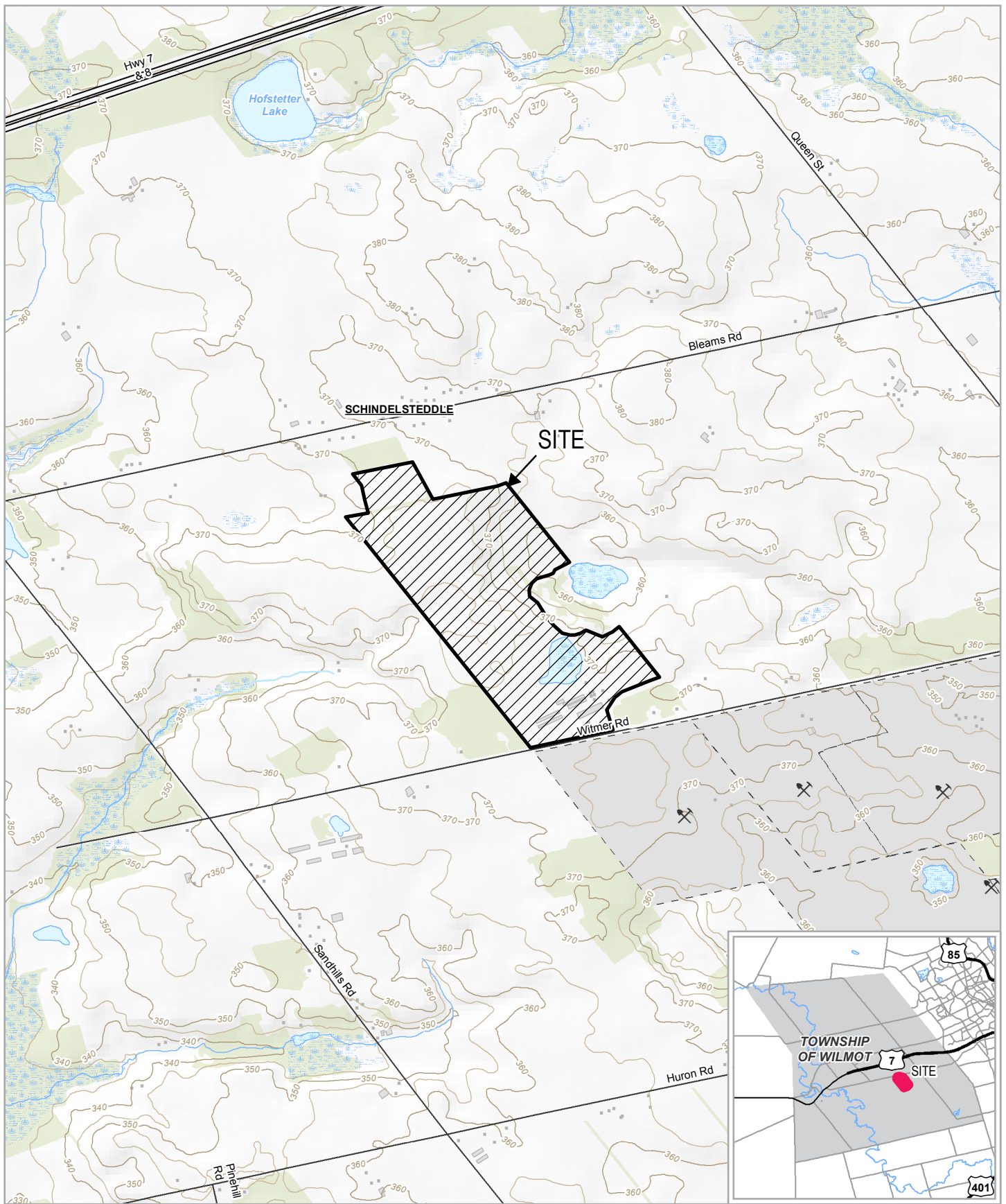
## 11. Dust BMPP Review and Continuous Improvement

Inspections and monitoring procedures will assist JHF personnel with the maintenance of an effective Dust BMPP. The Dust BMPP should be monitored and updated, as follows:

- If there are significant changes in the fugitive dust emissions sources (e.g. "as-constructed" site, etc.).
- If there are verified complaints associated with fugitive dust emissions from the Site.
- When there are visible dust emissions occurring more frequently and/or at a higher rate (excluding seasonal conditions).

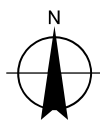
Review of the Dust BMPP is intended to evaluate the effectiveness of the dust control practices and focus on the identification of improvement opportunities that can reduce the risk of complaints related to fugitive dust emissions. A review of the Dust BMPP will ensure it is remaining effective in controlling fugitive dust emissions.

As part of implementing a successful fugitive Dust BMPP, it is important to be aware of areas where fugitive dust emissions can be reduced further. The Site will endeavor to improve its capacity for controlling fugitive dust emissions by identifying areas for potential future improvements and implementing additional practices as appropriate.



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Meters

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N

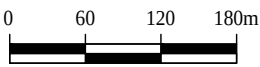
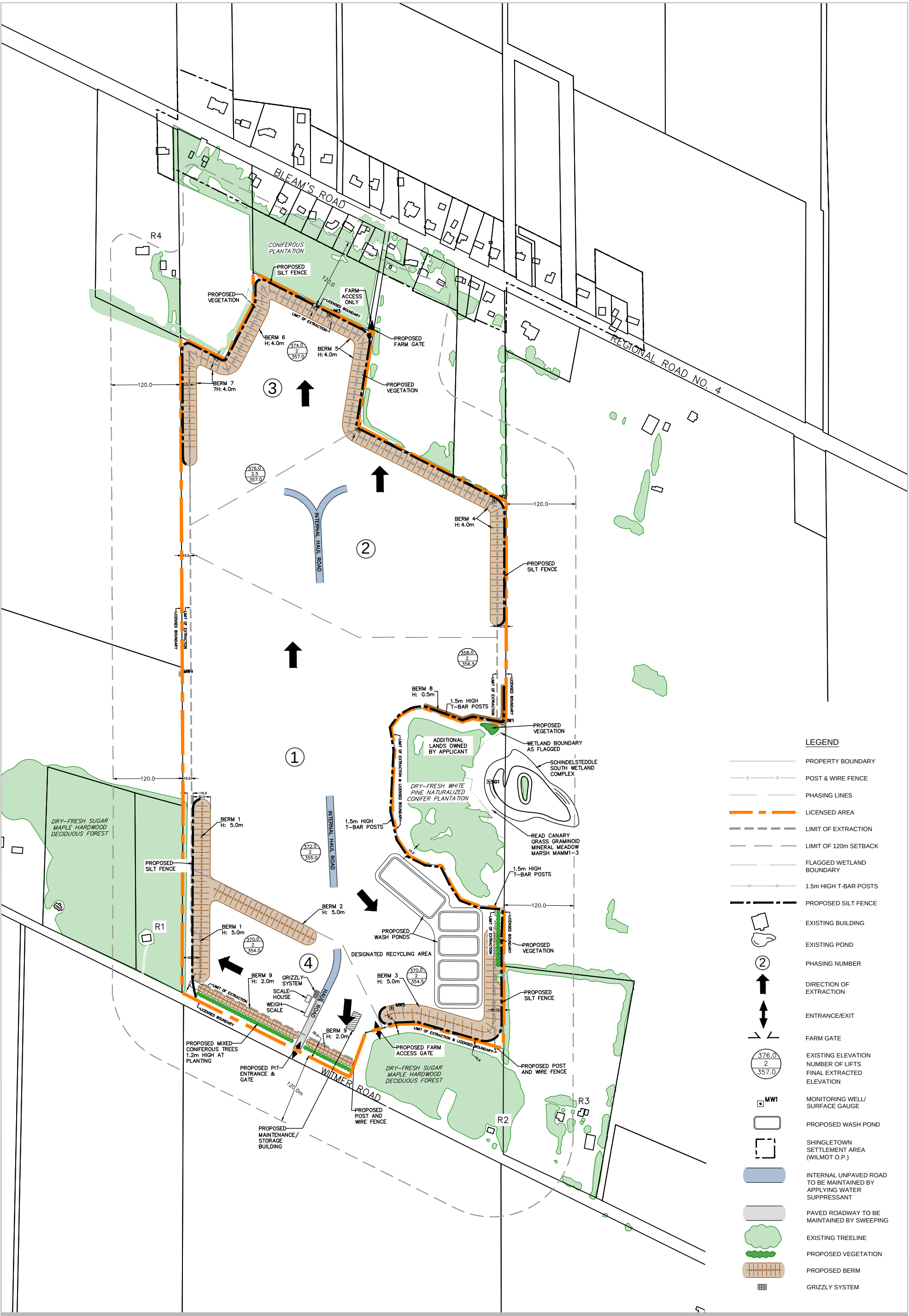


**HALLMAN PIT  
1984 WITMER ROAD  
WILMOT, ONTARIO  
BMPP FOR CONTROL OF FUGITIVE DUST EMISSIONS**

**SITE LOCATION MAP**

Project No. 11202973  
Revision No. -  
Date Sep 19, 2019

**FIGURE 1**



Coordinate System:  
UTM, NAD83, ZONE 17

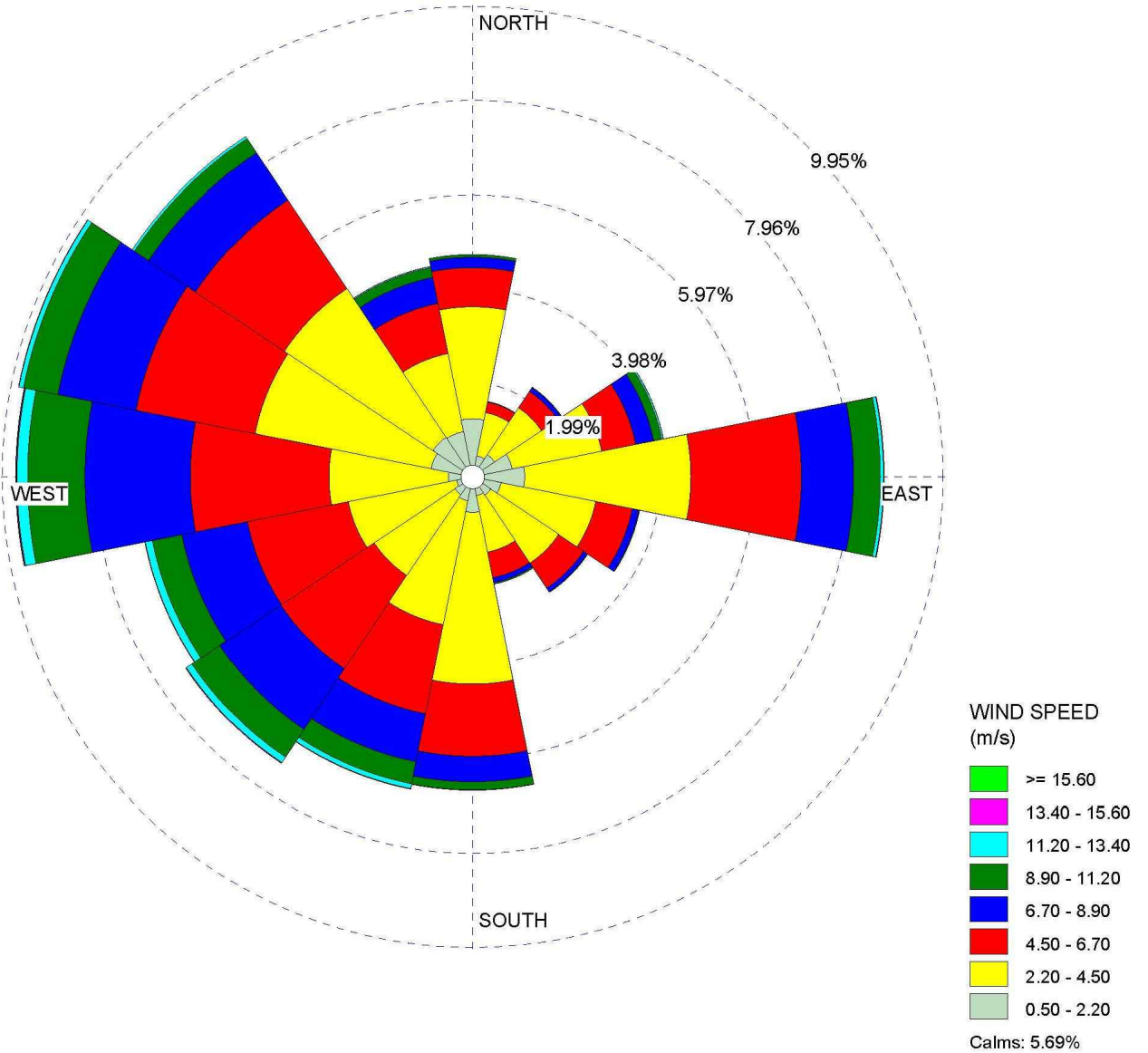


HALLMAN PIT  
1894 WITMER ROAD, WILMOT, ONTARIO  
BMPP FOR CONTROL OF  
FUGITIVE DUST EMISSIONS

KEY DUST  
MANAGEMENT PRACTICES

Project No. 11202973-01  
Date September 2019

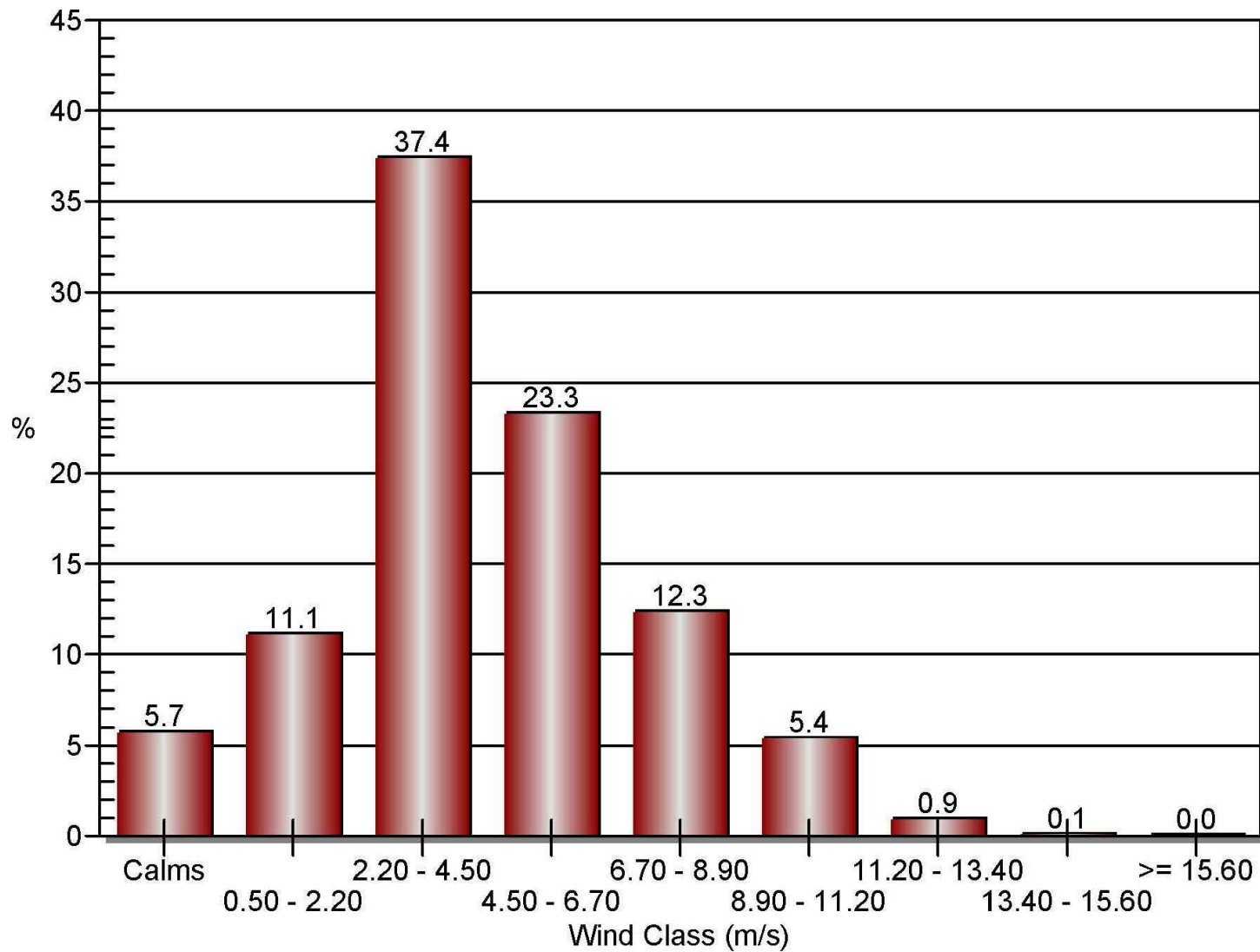
FIGURE 2



HALLMAN PIT  
1894 WITMER ROAD, WILMOT, ONTARIO  
BMPP FOR CONTROL OF  
FUGITIVE DUST EMISSIONS  
KITCHENER/WATERLOO  
WIND ROSE 2014-2018

Project No. 11202973-01  
Date September 2019

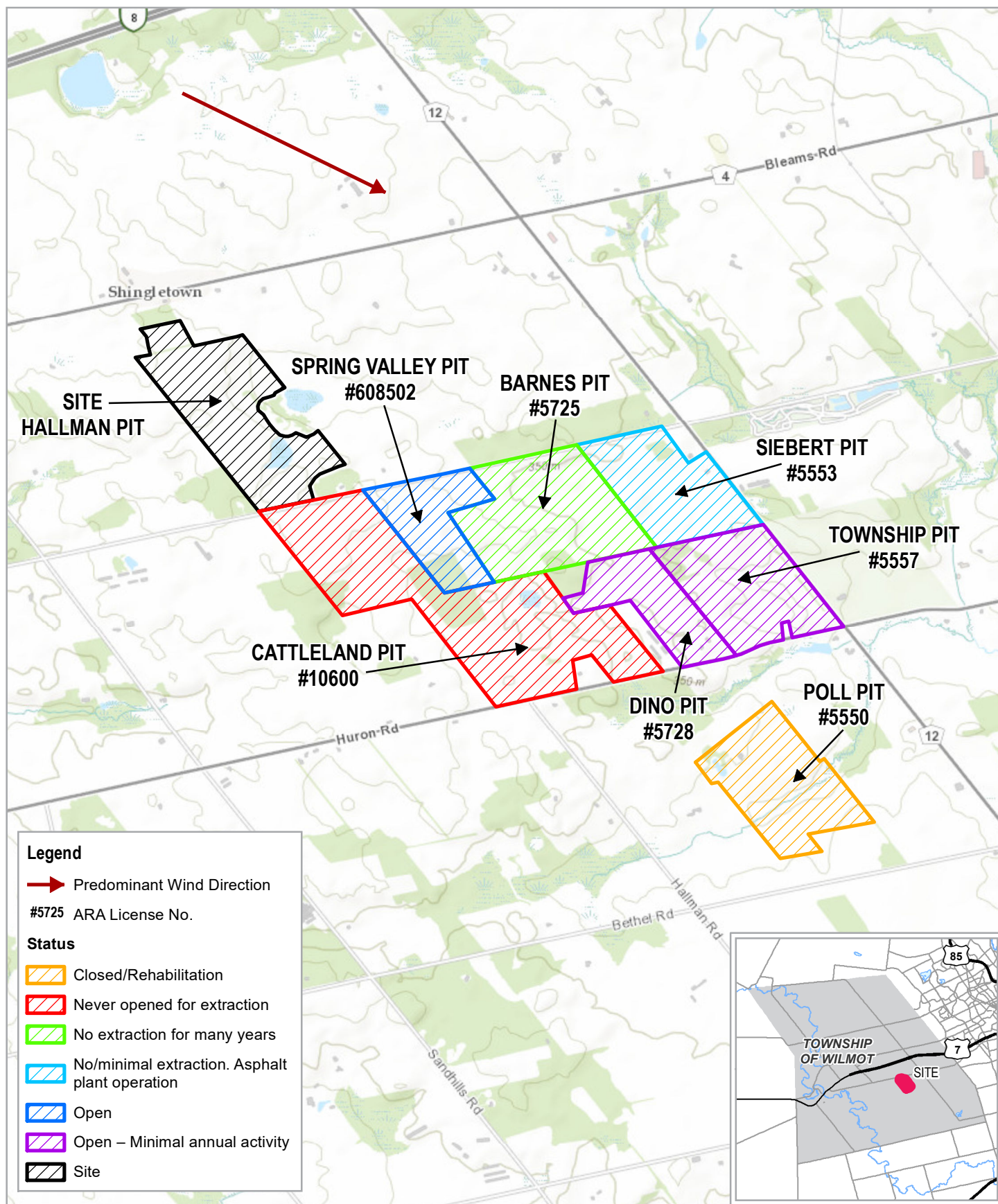
**FIGURE 3**



HALLMAN PIT  
1894 WITMER ROAD, WILMOT, ONTARIO  
BMPP FOR CONTROL OF  
FUGITIVE DUST EMISSIONS  
KITCHENER/WATERLOO WIND CLASS  
FREQUENCY DISTRIBUTION GRAPH

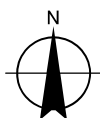
Project No. 11202973-01  
Date September 2019

**FIGURE 4**



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Meters

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N

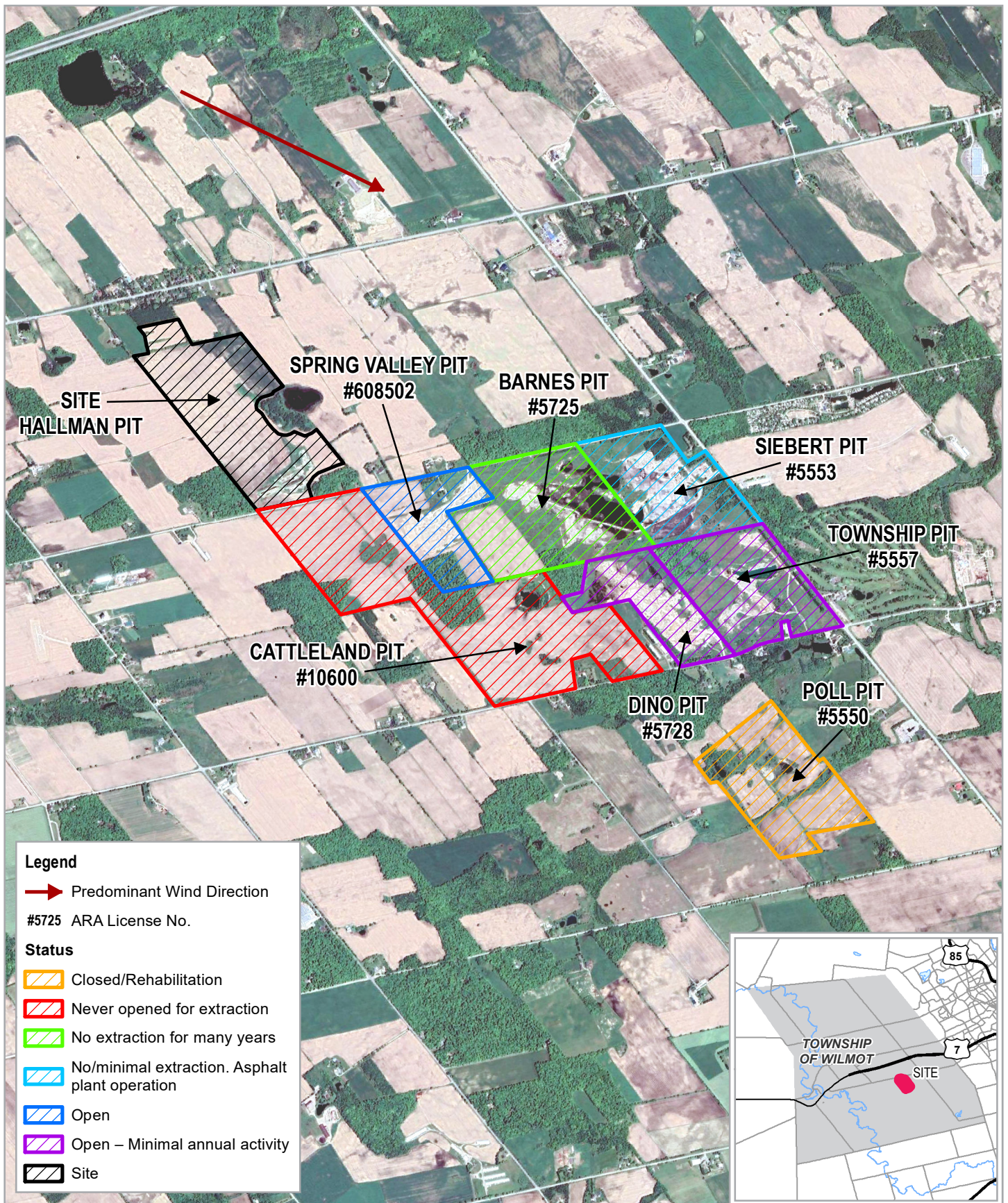


**HALLMAN PIT**  
1984 WITMER ROAD  
WILMOT, ONTARIO  
BMPP FOR CONTROL OF FUGITIVE DUST EMISSIONS

Project No. 11202973  
Revision No. -  
Date Oct 14, 2020

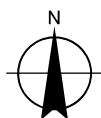
**NEARBY PIT OPERATIONS**

**FIGURE 5**



Paper Size ANSI A  
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Meters

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N



HALLMAN PIT  
1984 WITMER ROAD  
WILMOT, ONTARIO  
BMPP FOR CONTROL OF FUGITIVE DUST EMISSIONS

Project No. 11202973  
Revision No. -  
Date Oct 14, 2020

AERIAL SITE LOCATION MAP

FIGURE 6

# **Appendix A**

## **Fugitive Dust Checklist**

Fugitive Dust BMPP Inspection Checklist  
Jackson Harvest Farms Ltd.  
1894 Witmer Road, Wilmot

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

Weather Conditions:      Precipitation?      Yes ☐      No ☐  
                                         Rain ☐      Snow ☐      Temperature: \_\_\_\_\_ °C      Wind Speed:      Calm ☐      Moderate ☐      High ☐  
                                         Wind Direction (blowing from): \_\_\_\_\_

| SOURCE             | INSPECTION POINTS                                | Yes                      | No                       | NOTES |
|--------------------|--------------------------------------------------|--------------------------|--------------------------|-------|
| Paved Roads        | Are dust emissions observed to be under control? | <input type="checkbox"/> | <input type="checkbox"/> |       |
|                    | Are vehicles obeying the posted speed limit?     | <input type="checkbox"/> | <input type="checkbox"/> |       |
|                    | Is washing/sweeping required?                    | <input type="checkbox"/> | <input type="checkbox"/> |       |
| Unpaved Roads      | Are dust emissions observed to be under control? | <input type="checkbox"/> | <input type="checkbox"/> |       |
|                    | Is water spraying required?                      | <input type="checkbox"/> | <input type="checkbox"/> |       |
|                    | Are vehicles obeying the posted speed limit?     | <input type="checkbox"/> | <input type="checkbox"/> |       |
| Stockpiles         | Are dust emissions observed to be under control? | <input type="checkbox"/> | <input type="checkbox"/> |       |
|                    | Is water spraying required?                      | <input type="checkbox"/> | <input type="checkbox"/> |       |
| Transfer Locations | Are dust emissions observed to be under control? | <input type="checkbox"/> | <input type="checkbox"/> |       |
|                    | Are drivers required to unload at lower height   | <input type="checkbox"/> | <input type="checkbox"/> |       |
| Berms              | Are dust emissions observed to be under control? | <input type="checkbox"/> | <input type="checkbox"/> |       |
|                    | Are berms in good condition                      | <input type="checkbox"/> | <input type="checkbox"/> |       |

Additional Comments / Corrective Action:

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\_\_\_\_\_



## about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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## **APPENDIX C**

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**DANCE ENVIRONMENTAL INC. MEMORANDUM DATED SEPTEMBER 25,  
2020**

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September 25, 2020.

David Sisco  
c/o IBI Group

**Subject: Jackson Harvest Farms Ltd. – Proposed Hallman Pit – Input to Cumulative Impact Assessment.**

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Dear David:

In response to your request for input to a Cumulative Impact Assessment, we provide the following:

From an ecological perspective, the presence of other aggregate operations south of Witmer Road should be considered within the overall landscape context. Factors to consider would include ecological linkages to the south such as watercourses, valleylands, hedgerows and woodlands.

A review of Figure 2 present in the Dance Environmental Inc. (2019) EIS prepared regarding the proposed Hallman Pit, reveals that there are no significant ecological features present immediately south of Witmer Road that provide significant linkage to the ecological features present on the Hallman Pit site. Lands to the south were planted to soybeans during the 2020 growing season.

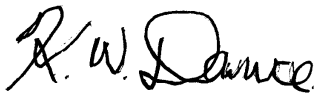
A site visit on September 11, 2020, revealed that there is currently a narrow sparsely-treed hedgerow present along the western margin of the Cattleland Pit (Lafarge), south of Witmer Road. This woodland is large enough that it is expected to qualify as a Significant Woodland under regional policy. It is probable that some mobile wildlife species capable of crossing the Witmer Road right-of-way currently move north and south between the Hallman Pit property and the woodland south of Witmer Road, but this is probably at a very low level of activity. We did not observe significant wildlife movement in this area during inventories associated with preparation of the EIS.

Setbacks between extraction and the western margin of the Cattleland property would allow for maintenance of this corridor and continuation of any wildlife movement.

There is little that needs to be done on the Hallman Pit property beyond existing plans to protect the Significant Woodland located west of the southwestern corner of the Hallman Pit, to maintain any existing corridor feature or wildlife movement in this area.

Please contact me if there are any questions about this letter.

Regards,

A handwritten signature in black ink, appearing to read "K. W. Dance". The signature is fluid and cursive, with the first name "Ken" and last name "Dance" being more legible than the middle initial "W".

Ken Dance, M.Sc.  
President  
Dance Environmental Inc.  
519-463-6156